5229
SR85 Landfill
Stormwater Drainage Report
TO 4E
REPORT

URS

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STATE ROUTE 85 LANDFILL STORMWATER DRAINAGE DESIGN REPORT

Prepared for
CITY OF PHOENIX

URS Job No. 23444155
August 2010

APPROVED

9-10-10

TOWN OF BUCKEYE ENGINEER **DATE**

THE TOWN APPROVES THIS REPORT FOR CONCEPT ONLY AND ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS

URS Corporation
7720 North 16th Street, Suite 100
Phoenix, Arizona 85020

Registered Professional Engineer (Civil)
CERTIFICATE NO. 37872
M. C. F. McINTOSH
Date Signed 8.13.10
ARIZONA, U.S.A.
EXPIRES 9.30.2011

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1.0 INTRODUCTION

This report details the design layout for the stormwater controls that will be built for the City of Phoenix's SR85 Landfill. The landfill site is located in southwestern Maricopa County approximately 17 miles south of Interstate 10. The site is located approximately ½ mile west of SR85 just south of Patterson Road and the Gila Bend Canal and Old U.S. Highway 80 bound the site to the west. The landfill site is within the municipal corporate limits of the Town of Buckeye. The site encompasses portions of Sections 8, 9, 10, 15, 16, 17, 21, 22, and 27, Township 3 South, Range 4 West of the Gila and Salt River Base Meridian. The location and vicinity of the study area are shown on Figure 1 and Figure 2, respectively.

1.1 PREFERRED ALTERNATIVE

The interim stormwater controls will consist of channels and a basin that will be constructed during the development of Landfill Cells 1, 2, and 3 to manage off-site and on-site drainage.

URS Corporation (URS) analyzed several alternatives for the stormwater controls at the SR85 landfill and Alternative 4 was selected by the City of Phoenix as the preferred alternative. Refer to *Interim Stormwater Controls Memorandum* (Reference 1) for a brief description of the various alternatives considered for the stormwater control system. Alternative 4 is part of the final "Build-out" condition. Alternative 4 consists of constructing a South Detention Basin to collect stormwater from East Channel 1 and Interim East Channel 2, and construction of North Channels 1A and 1B, a portion of North Channel 2A, Interim Channels 1 and 2, and the South Channel. A plan view of Alternative 4 is shown on Figure 3. However, during the early stages of the design it was decided that it would be more beneficial to construct East Channel 2 rather than Interim East Channel 2 at this time. Therefore, the East Channel 2 alignment was changed back to the alignment for the final build out condition of East Channel 2.

1.2 FINAL BUILD-OUT

The final build-out of the landfill is shown on the Facility Plan (Reference 2) and will include construction of the West Channel and North Channel 2. A plan view of the channel and basin system for the final landfill build-out condition is shown on Figure 4.

The following sections of the report provide a description of the design plans for the interim stormwater controls for SR85 Landfill based on Alternative 4.

2.0 SITE DESCRIPTION

The landfill site covers an approximate area of 2,652 acres and is located on agricultural land. Surrounding land use is mostly agriculture land with some commercial properties. Major developed features around the landfill site include SR85, the Sam Lewis Prison, and the Southwest Regional Landfill. Two natural water bodies near the site include Rainbow Wash to the north and the Gila River to the west. The stormwater flowing through the SR85 site drains over the Gila Bend Canal overchute through Layton Wash and into the Gila River. The stormwater from the Gila Bend Canal overchute flows over a dip crossing of Old Highway 80 into Layton Wash. Layton Wash is an existing channel used to convey stormwater flow from the Gila Bend Canal overchute to the Gila River. The channel is constructed with earthen embankments through agricultural areas.

3.0 FACILITY DESIGN

The landfill is proposed to be built in sequential phases, beginning at the northeastern corner of the property. The basic design and operation of the landfill will include disposal of municipal solid waste within specified areas known as "cells." Each cell will have several 25 to 30 acre phases that are active at any given time. Farming operations will continue for as long as possible during landfill operations. Berms and landscaping will be used to screen the landfilling operations as each phase is constructed. Fuel storage tanks, emergency equipment, and other operation support facilities will be located adjacent to and generally north of the initial phase of landfill cells.

3.1 TOPOGRAPHIC DATASET

The 1-foot contour interval topographic mapping was prepared by Southwest Mapping for the hydrologic and hydraulic analysis. The aerial mapping for SR85 Landfill area was conducted in 2002. The 1-foot contour interval mapping was used to design the channels and basins. The United States Geological Survey 7.5 Minute Quadrangle mapping was used to delineate the off-site drainage basin and identify the natural flow paths.

3.2 SR85 LANDFILL DRAINAGE FACILITIES DESCRIPTION

The proposed drainage facilities include channels, grade control structures and a storage basin. The proposed channels will have earth-lined bottoms and riprap lining will be provided along the side slopes of the permanent channel segments. Riprap lining will not be provided for the interim channel segments. The south storage basin will also be earth-lined and will have a slight western slope. Grade control structures will be provided along the channel at appropriate locations to maintain the slope, minimize the excavation needed, and control flow velocities. Once constructed, the City of Phoenix will perform operations, testing and maintenance of the storm water protection systems as well as landfill operations.

3.2.1 Channels

The Alternative 4 stormwater channels will be constructed along the east and southern boundary of the property. East Channel 1 is aligned along the east boundary of Cell 1 and 2 of the landfill. It drains into the proposed South Detention Basin through East Channel 2. East Channel 2 extends from East Channel 1 and drains into South Detention Basin. North Channel 1A begins at the same point as East Channel 1 on the east side of Cell 1 and connects to North Channel 1B. North Channel 1B extends north and connects to North Channel 2A. North Channel 2A extends

along the northeast boundary of the landfill flowing west. Interim Channels 1 and 2 extend north to south along the west side of Cells 1, 2 and 3 from North Channel 2A to the South Channel. The controlled flow from the South Detention Basin is taken to the Gila Bend Canal overchute via the South Channel. Table 1 summarizes the channel lengths, widths, slope, side slope and design flows calculated for each of the channels.

A minimum freeboard of 1-foot is provided for all the final channel segments. The interim channels are not designed to capture the entire peak flow of the off-site flow hydrographs.

Table 1 – Channel Properties Summary

Channel Dimension Summary						
Channel	**Contributing CP/Basin**	**Lengths (ft)**	**Width (ft)**	**Max Slope (ft/ft)**	**Sideslopes (H:V)**	**Peak Flow (cfs)**
North Channel 1A	5.10	2660	30	0.003	3:1	659
North Channel 1B	5.10	2632	30	0.003	3:1	659
North Channel 2A	5.10	1186	30	0.0034	3:1	659
Interim Channel 1	CP5.3	7118	30	0.0034	3:1	788
Interim Channel 2	CP5.3	7343	30	0.0034	3:1	788
East Channel 1	CP6.10	7343	80	0.0037	3:1	1563
East Channel 2	CP6.4	5415	200	0.0013	3:1	4857
South Channel	CP6.5	3370	100	0.0037	3:1	2179

Flows in excess of the channel capacity may overtop the channel and continue west toward the Gila Bend Canal floodplain. The final build-out channels will be constructed with grade control structures to control the flow velocity and minimize excavation. No grade control structures will be constructed along the interim channels in order to reduce construction costs.

The permanent channel banks will be protected against erosion and scour by placing riprap on the side slopes. The channel lining will consist of D_{50}= 6 inch angular rip-rap. Regular maintenance of the temporary channels will be required following storm events, which may include repair and/or reconstruction of channel banks.

3.2.2 Grade Control Structures (Drop Structures)

Grade control structures are provided at appropriate locations along the channels to maintain channel slope, control flow velocity and minimize excavation. The height of the drop varies for the grade control structures ranging from 2 feet to 6.0 feet. Seven drop structures are proposed

for East Channel 1, seven drop structures for the South Channel and four drop structures for North Channels 1A and 1B.

For the channel segments that slope against the existing natural grade, such as for North Channel 1B and East Channel 2, the excavation ranges from 5 feet near the drop structure to a maximum of 15 feet at the 90-degree bend.

Gabion protection will be provided along the length of the apron downstream of the drop structures. A typical drop structure cross section is shown in the construction drawings. Gabion counter weirs will be installed above the gabion mat at the end of the apron to dissipate the energy of the flow.

3.2.3 Detention Basin

The South Detention Basin reduces the stormwater entering into the South Channel from the offsite flow in East Channel 2. The purpose of constructing the South Detention Basin is to maintain stormwater discharge from the site at flow rates equal to those prior to the development of the landfill. The South Detention Basin also serves as the first-flush basin for the first phase of the landfill project. However, much of the property will not be disturbed during the first phase of the landfill project. As such, no first flush retention will be provided for those areas during the first phase of the project. As other parts of the landfill property are constructed in the future, first-flush will be provided at that time. The South Channel drains to the Gila Bend Canal overchute. Flow from the Gila Bend Canal overchute drains into Layton Wash which conveys stormwater from the Gila Bend Canal overchute to the Gila River.

The proposed basin has an estimated capacity of approximately 450 acre-feet. The basin has 4:1 (H:V) side slopes and a 0.05% bottom slope and will have a minimum of 1-foot of freeboard. The perimeter access road along the top of the basin is approximately twenty feet wide and is at an elevation of 802 feet, and the access ramps into the basin will have a width of 20 feet. Per discussion with the Town of Buckeye Public Works Director, public access to the basin shall be prohibited. Public access to the detention basin will be prevented by a 6-foot viewable fence. The spillway is located at the northwest corner of the basin and has a crest elevation of 790 feet with a crest length of 20 feet and 3:1 (H:V) side slopes and will be lined with concrete. Two 24-inch HDPE pipes underneath the spillway will regulate low flow from the basin and discharge into the South Channel. The basin drains in less than 36-hours for the 100-year event, as shown in the HEC-1 model output. Although the basin drains in less than 36-hours, Town of Buckeye retention/detention basin regulations require a minimum of one drywell per basin if the water depth is over one foot. Therefore, a drywell will be installed in the basin near the outlet.

3.3 LAYTON WASH

Part of the proposed stormwater control system includes the improvement of the Layton Wash channel. The improvements include increasing the bottom width of the channel, constructing grade control structures and installing riprap erosion protection for the side slopes. Layton Wash lies within unincorporated Maricopa County. As such, any required design review will be coordinated with Maricopa County. The existing Layton Wash channel does not have the capacity to contain the 100-year peak flow (approximately 2,725 cfs) flowing through the Gila Bend Canal overchute.

The channel upgrades include increasing the channel width to 90 feet and providing sufficient channel depth to contain the 100-yr peak flow with a minimum freeboard of 1-foot. Grade control structures are provided at six locations to maintain channel slope and control flow velocity.

4.0 FEMA FLOODPLAIN CLASSIFICATION

Based on FEMA Flood Insurance Rate Map (FIRM) Number 04013C2870G (September 30, 2005) and FIRM number 04013C2865H (September 30, 2005), most of the SR85 Landfill area is located within the special flood hazard area Zone X of the National Flood Insurance Program (NFIP). The shaded Zone X classification indicates the following:

> *Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.*

However, areas along the western property line along the Gila Bend Canal are located in a Zone AO special flood hazard area with depths varying from 1 to 3 feet. The Zone AO classification indicates the following:

> *Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.*

The portion of the map containing the project site is presented on Figure 5. The proposed channel improvements for the first phase of the landfill will not fall within the effective Zone AO floodplains. However, rip-rap will be placed downstream of the south channel within the floodplain limits to protect the 30" - inch high pressure gas line. The rip-rap will be placed over the pipe such that the finish grade of the rip-rap will match existing grade. Therefore, there will be no impacts to the depth of the Zone AO floodplain. A floodplain use permit will be obtained from the Flood Control District of Maricopa County prior to any placement of rip-rap within the floodplain. If there are landfill facilities and/or fill placed in the floodplains as the landfill expands either a CLOMR/LOMR or a LOMR-Fill should be obtained.

5.0 HYDROLOGY

The hydrologic analysis that was conducted for the existing condition developed for the *Facility Plan Report (FPR) Volume I of IV* was the basis for the hydrologic analysis for the interim condition stormwater control design.

The drainage area for the project site is approximately 17 square miles. The U.S. Army Corps of Engineers HEC-1 hydrologic modeling software (Reference 3) has been used to calculate flow rates at the project site for the interim landfill condition. The existing condition HEC-1 model for this project site (refer to the FPR) was modified to incorporate the interim landfill condition and the drainage basins were re-delineated. It should be noted that the existing condition HEC-1 model was originally based on the effective Flood Insurance Study (FIS) hydrologic model developed by Donohue & Associates, Inc. (Reference 4). The drainage basin delineations for the proposed future condition with the channels and retention basins are shown in Figure 6.

The updated hydrologic analyses for the 100-year 24-hour storm event for existing and future conditions are discussed in detail in the *Hydrology Update Memorandum* (attached in Appendix A).

6.0 HYDRAULICS

The hydraulic analysis for the interim stormwater control includes design of channels, basins, grade controls and culverts. The design was based on Drainage Design Manual for Maricopa County – Volume II Hydraulics (Reference 5), the City of Tucson – Department of Transportation, *Standards Manual For Drainage Design And Floodplain Management In Tucson* (Reference 6), and the *Hydraulic Design of Energy Dissipators for Culverts and Channels* – Federal Highway Administration (Reference 7).

6.1 CHANNELS

The interim condition stormwater channel sections were sized using the normal depth equation to capture the off-site and on-site flows impacting the site. These flows are based on the peak discharges obtained from the HEC-1 model discussed in Section 5. The channels were designed with earthen bottoms and riprap lined side slopes. The temporary channels will not have any riprap because they will be abandoned once the ultimate build-out is complete. Table 1 summarizes the channel lengths, widths, slope, side slope and design flows calculated for each of the channels.

6.1.1 Erosion and Scour Protection for channels

Erosion and scour protection will be provided along the channel side slopes, drop structures, and basin inlets for the landfill channels. Additional scour protection will be provided at the channel bends if necessary.

Riprap will be provided along the side slopes of the permanent channels. Scour protection will be constructed along the channel side slope and extend below the channel bottom to the calculated scour depths. A detailed calculation of scour depth, as well as the riprap size, for each of the channel reaches is summarized in Appendix B. A uniform riprap with a median diameter (D_{50}) of 6-inches is proposed for all channels.

6.1.2 Channel Transition

There is one channel transition in the stormwater control system. Proper channel transition design will alleviate backwater effects, local scour and wave formation. The transition is where East Channel 1 discharges into East Channel 2, where the bottom width increases from 80 feet to 200 feet. The design for the transition from East Channel 1 to East Channel 2 is based on the Surface Mining Water Diversion Design Manual (Reference 7). This manual was used for the transition design in lieu of the local agency manuals for the Flood Control District of Maricopa

County (FCDMC) and the City of Phoenix because these manuals do not provide adequate guidance for designing the type of channel transition required for this project.

6.1.3 Super Elevation

Bends in the channel cause the maximum flow velocity to shift toward the outside of the bend. Thus, additional freeboard has to be provided at the outer curvature of the bend and this raises the elevation of the banks. The super elevations for the each of the bends were calculated and added to the total depth of the channel to obtain the channel flow depth at bends. The design is based on the FCDMC's *Hydraulics Manual* (Reference 5) and these calculations are provided in Appendix B.

6.2 GRADE CONTROL STRUCTURES

Grade control structures are proposed at various locations along the channel to reduce velocities and minimize excavation. The grade control structures were designed based on U.S. Army Corps of Engineers' HEC-14 (Reference 7) and FCDMC's *Hydraulics Manual* (Reference 5). The height of the drop structure was determined based on the existing topography and the setbacks to the landfill property line. The grade control structure design calculations for SR 85 Landfill channels are included in Appendix B.

6.3 DETENTION BASIN

The South Detention Basin was designed to attenuate the peak flows and velocities entering the Gila Bend Canal Overchute and provide retention for first flush of runoff from disturbed areas. The basin is provided with a spillway located at the northwest corner. The storage volume in the storage basin was calculated using the level-pool reservoir routing procedure, which is the same methodology used in the FPR HEC-1 model. Detention basin volume versus elevation relationships and spillway sizes for the proposed detention basins were based on preliminary estimates of detention basin and spillway sizes. Two 24-inch concrete pipes (RCP) underneath the spillway will regulate low flow from the basin and discharge into the South Channel. The detention/retention basin design calculations for the South Detention Basin are included in Appendix B. The invert elevation of the outlet pipes will be elevated a minimum of six inches above the basin bottom in order to retain the first flush volume. The basin will only retain the first flush volume from the disturbed areas that drain into the basin from the development of the first phase of the landfill project. Separate first flush basins will need to be provided for areas that are disturbed in the future that do not drain into the basin.

6.3.1 Splash Pad

A splash pad will be provided at the location where East Channel 2 discharges its flows into the South Detention Basin. The splash pad will help to protect from scour at the basin entrance and provides scour protection at the basin bottom. The splash pad design calculation for the South Detention Basin is included in Appendix B.

7.0 404 PERMITTING

A jurisdictional delineation study was conducted on Layton Wash to determine if the wash could be considered Water of the U.S. under Section 404 of the Clean Water Act. Through coordination with the City of Phoenix and the U.S Army Corps of Engineers it was determined that Layton Wash does not meet the criteria to be classified as a jurisdictional stream. Therefore, a 404 Permit is not required for Layton Wash.

A previous study conducted for the SR85 landfill property also determined that there were no jurisdictional streams on the property. Thus, no 404 Permit is required for the landfill.

Supporting documentation for the jurisdictional determination for Layton Wash and the SR85 landfill site is provided in Appendix C.

8.0 REFERENCES

1. URS Corporation, *Interim Stormwater Controls Memorandum –Final,* May 2007.

2. City of Phoenix, *State Route 85 Landfill – Facility Plan, Volume I,* September 2003.

3. U.S. Department of the Army – Corps of Engineers, Hydrologic Engineering Center, Computer Program, *HEC-1, Flood Hydrograph, Version 4.0*, September 1990.

4. Donohue & Associates, Inc., *Gila Bend Canal Floodplain Delineation Study – Hydrology Report,* November 1991.

5. Flood Control District of Maricopa County, *Drainage Design Manual for Maricopa County, Arizona, Volume II – Hydraulics,* revised January 2004.

6. City of Tucson – Department of Transportation, *Standards Manual For Drainage Design And Floodplain Management In Tucson*, December 1989.

7. U.S Department of Transportation – Federal Highway Administration, *HEC-14, Hydraulic Design of Energy Dissipators for Culverts and Channels, Version 3.0*, July 2006.

8. United States Department of the Interior Office of Surface Mining, *Surface Mining Water Diversion Design Manual,* September 1983.

FIGURES

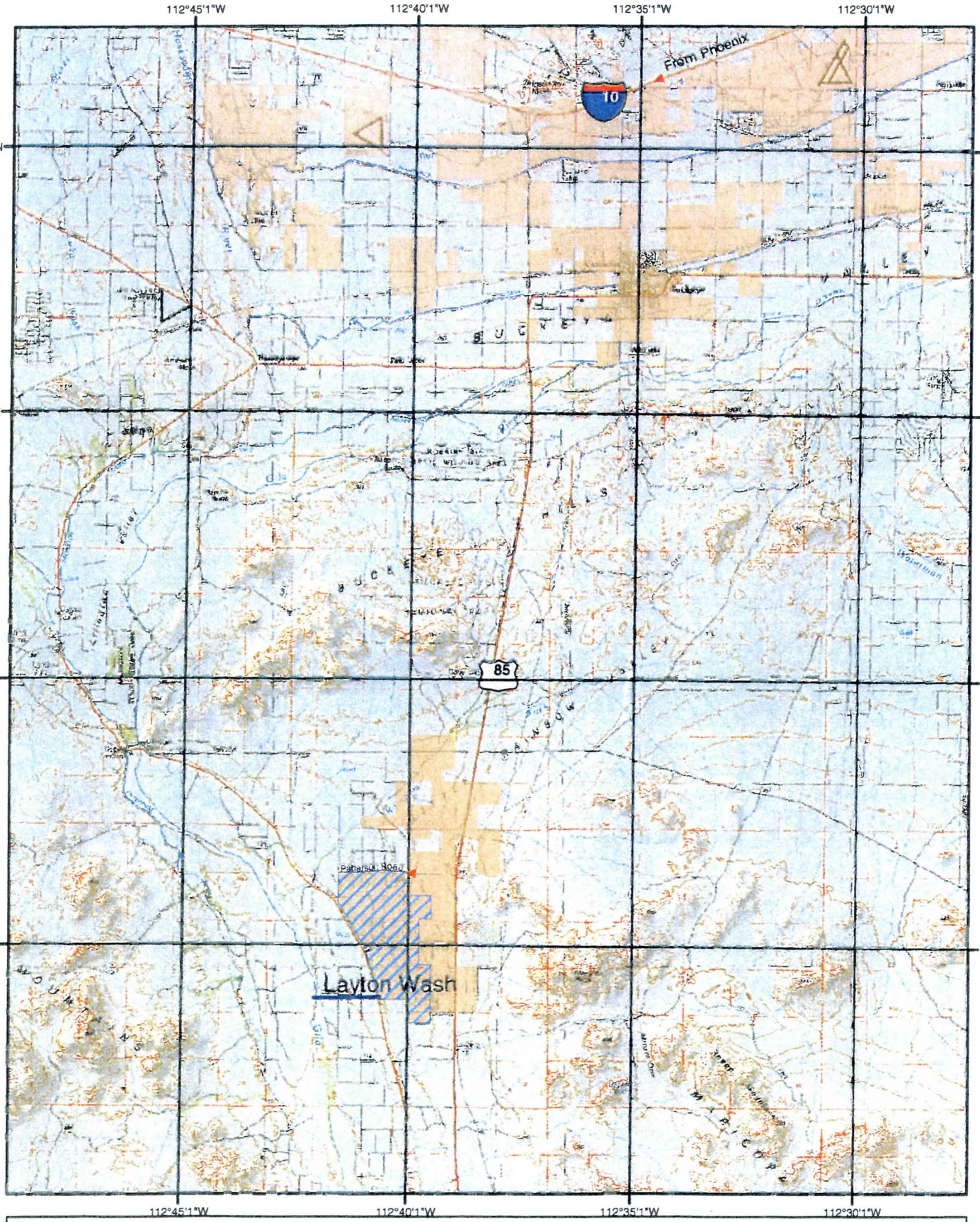

Figure 1
Location Map

Legend

- Landfill Site Perimeter
- Town of Buckeye
- Layton Wash

N

0 0.5 1 2 3 4
Miles (1:62,500)

URS

Map Produced 03/12/03

Source:
United States Geologic Survey, Phoenix South 30x60 Minute Quadrangle Map, 1991.
Arizona State Land Department, 1997.

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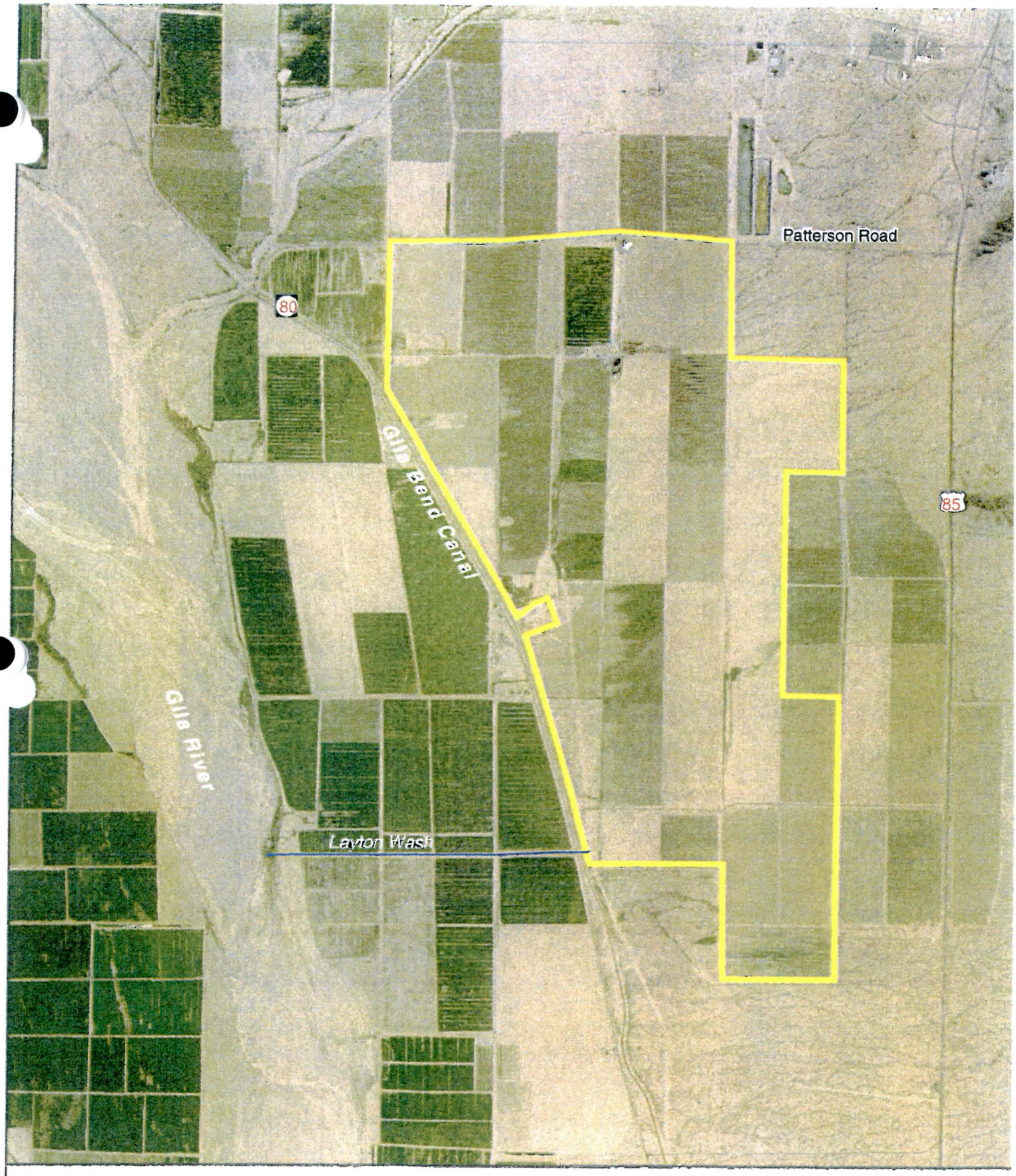

Figure 2
Vicinity Map

Legend

Proposed Site

Layton Wash

N

0 3,000 6,000
Feet

URS

Map Produced 06/04/07

Source:
Landiscor Inc., 2002.

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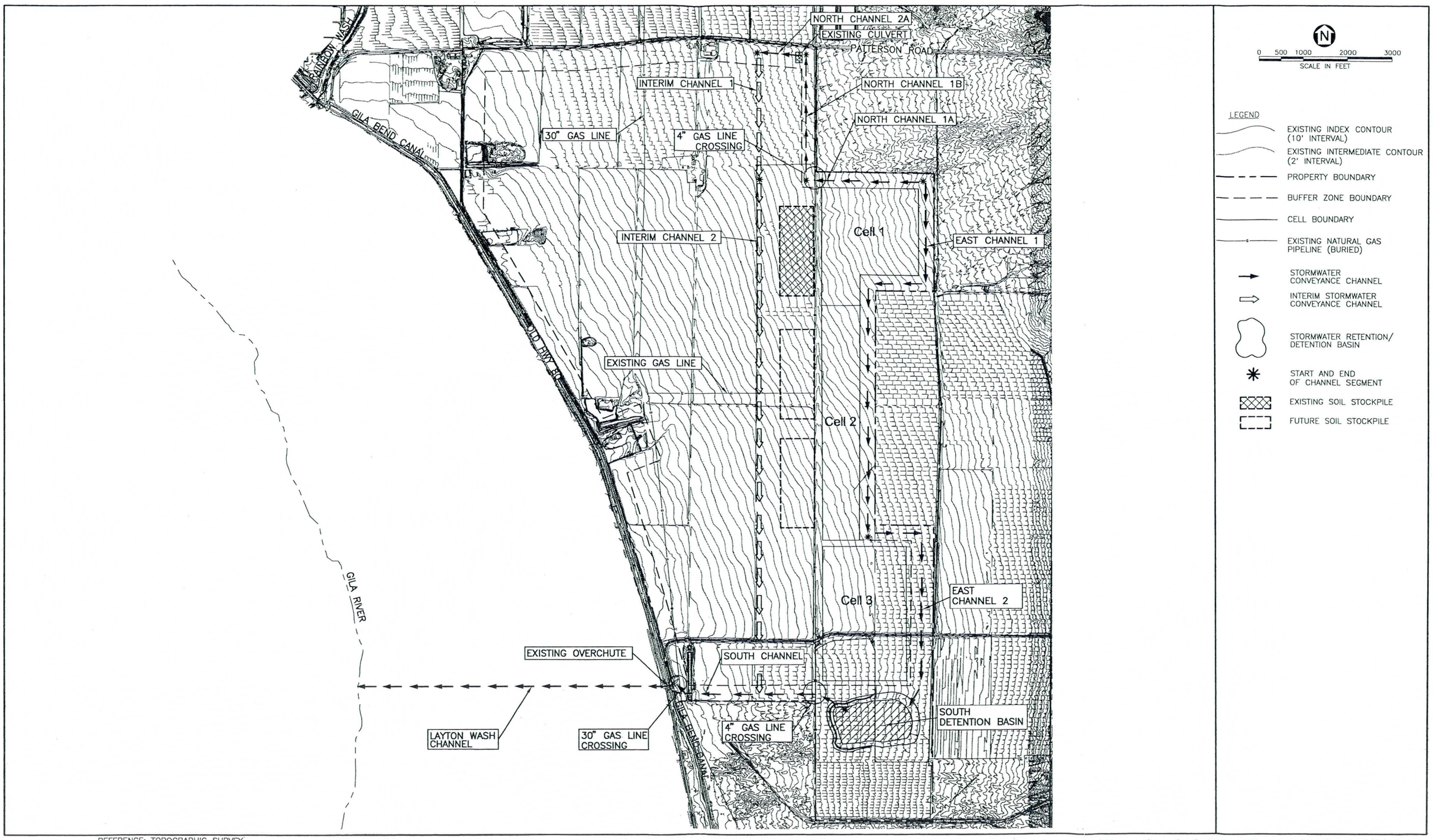

REFERENCE: TOPOGRAPHIC SURVEY
PREPARED BY URS CORPORATION
ON MARCH 15, 2002.

Alternative 4 - Interim Stormwater Control System
City of Phoenix SR 85 Landfill

Figure 3

URS

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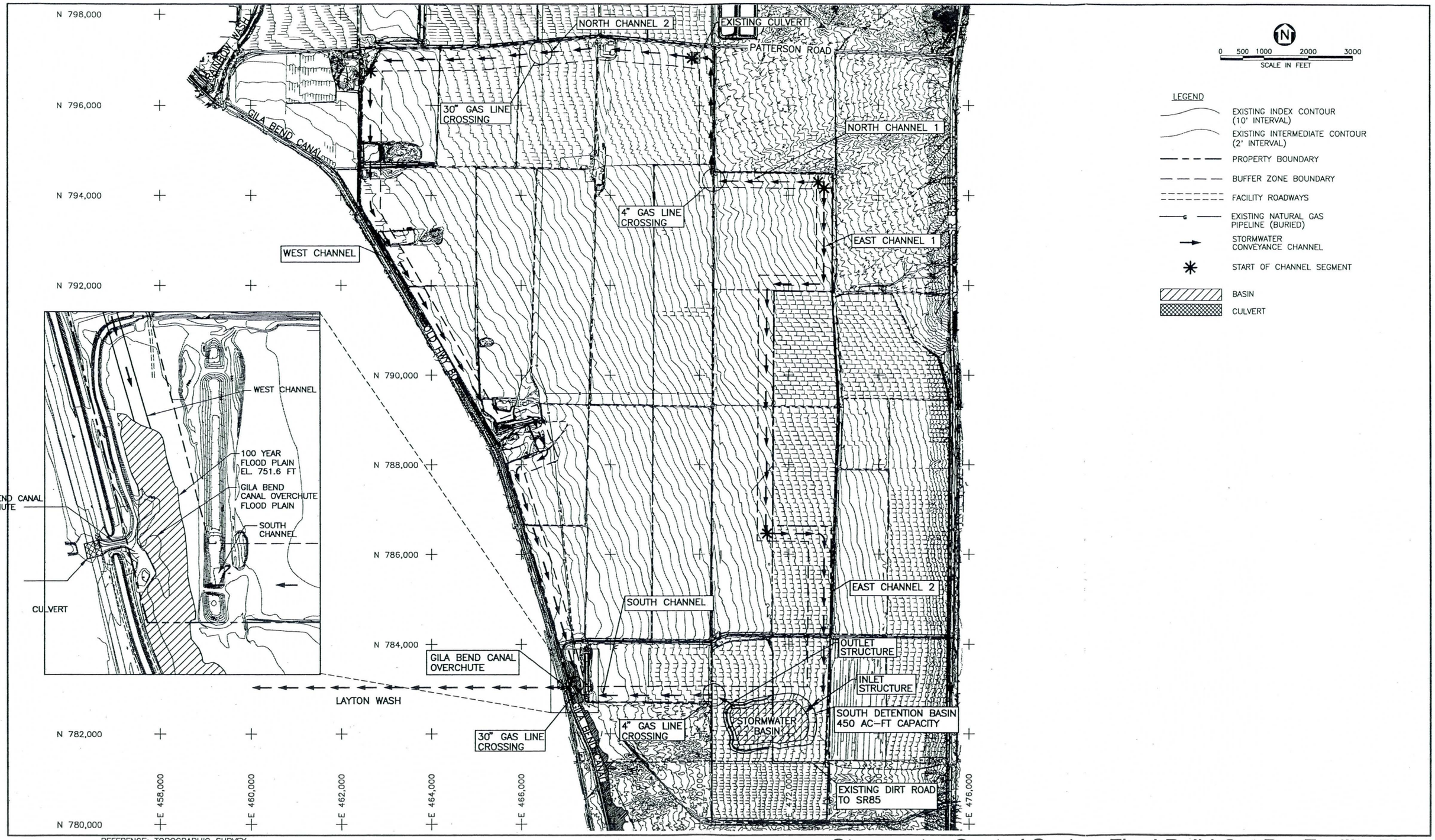

REFERENCE: TOPOGRAPHIC SURVEY
PREPARED BY URS CORPORATION
ON MARCH 15, 2002.

Stormwater Control System Final Build-Out Per Facility Plan

City of Phoenix S.R. 85 Landfill

Figure 4

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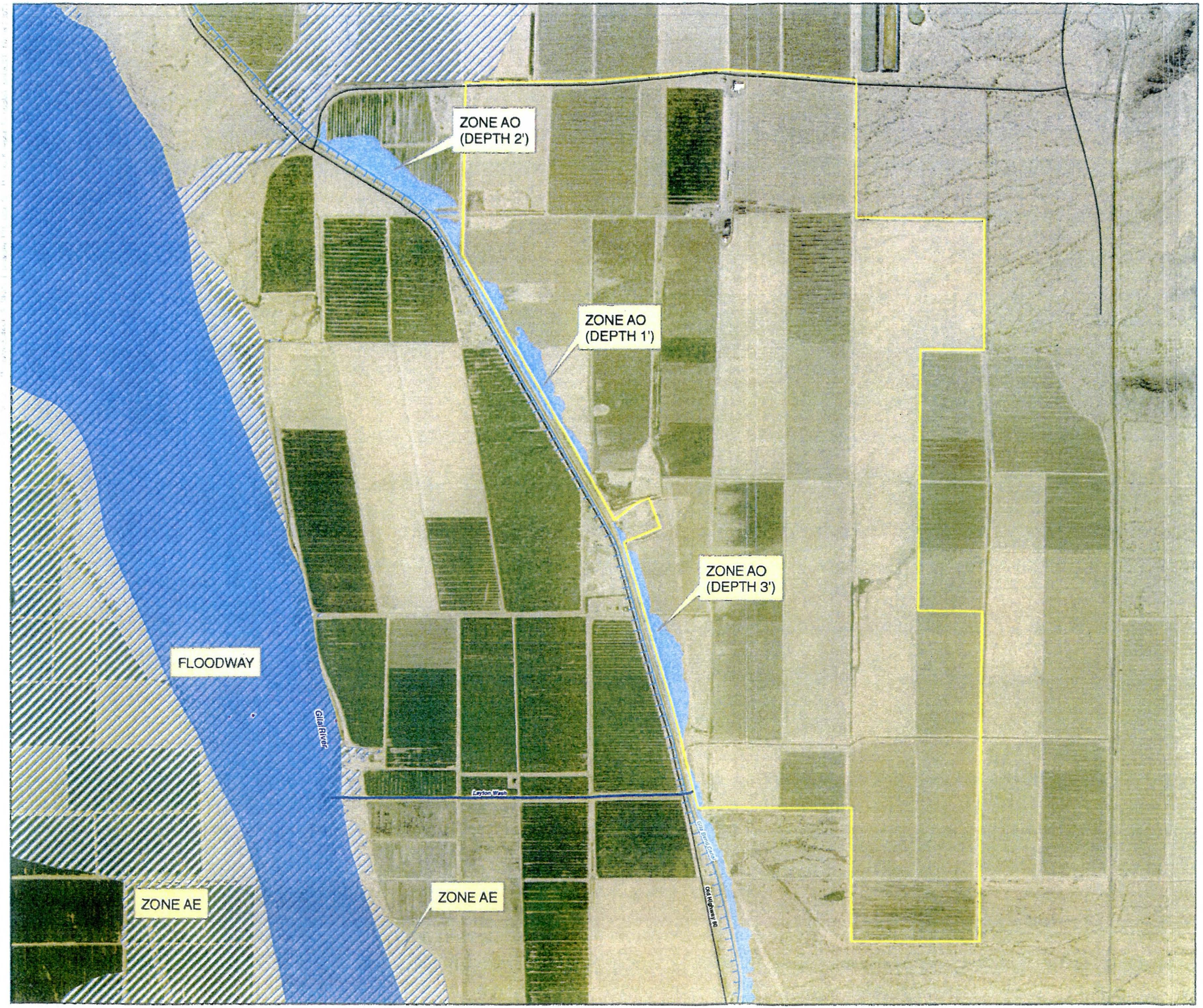


Figure 5
FEMA Floodplain Map

SR 85 LANDFILL

Legend

- Layton Wash
- Major Road
- Canal
- SR 85 LANDFILL PROPERTY BOUNDARY

FLOOD ZONE

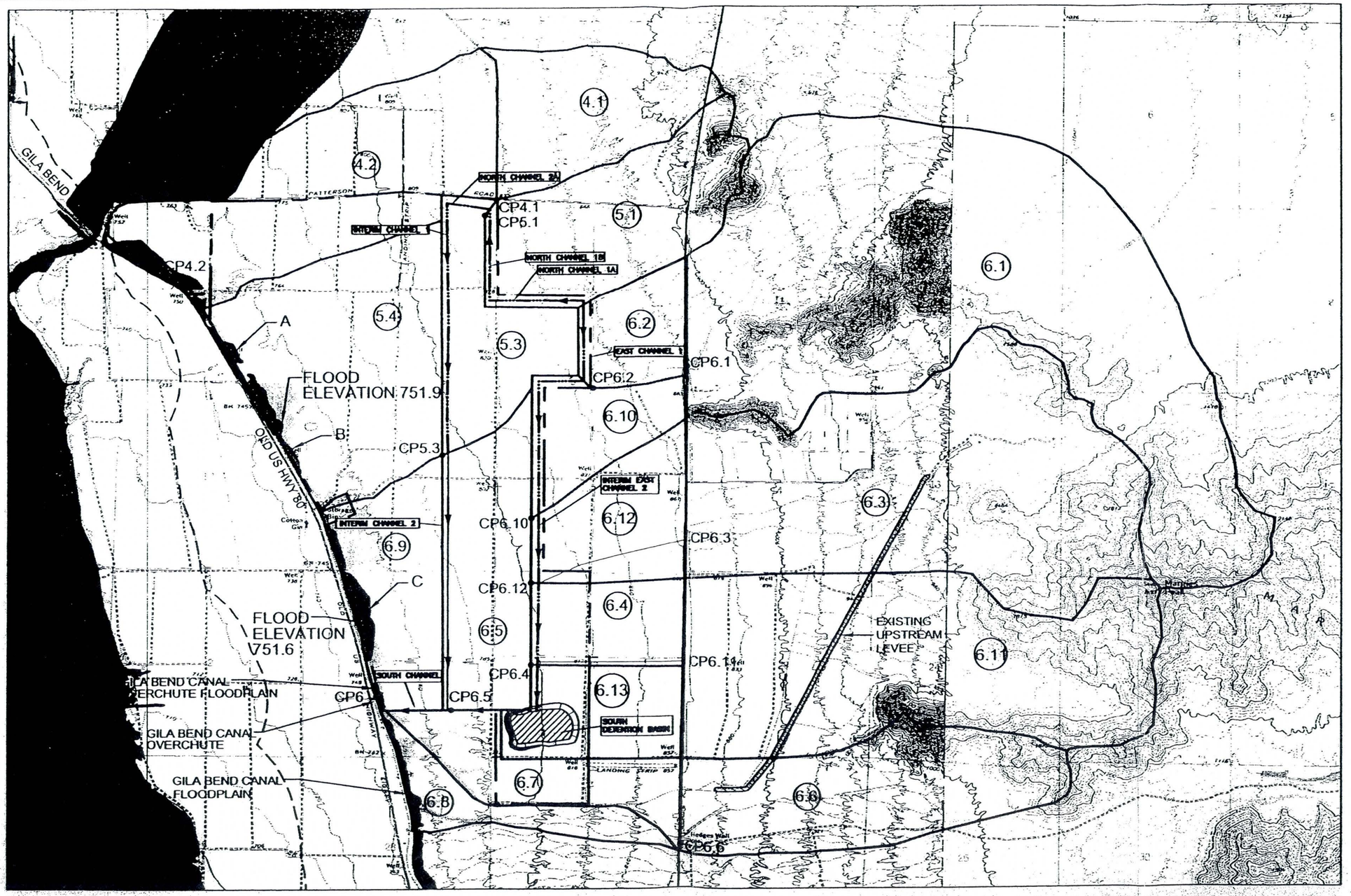
- FLOODWAY
- ZONE AE
- ZONE AO

Sources:
Floodplains - FEMA 2005
Layton Wash - URS 2007
Vector Base Data - ALRIS 1997-2007
Imagery Provided by City of Phoenix - MCFCD 2007

N
W E
S

0 2,000 4,000
Feet

URS



REFERENCE: USGS TOPOGRAPHIC QUAD COTTON CENTER NW, AZ 1973; FLOODPLAIN - MARICOPA COUNTY FLOOD CONTROL DISTRICT, 2000

LEGEND:

- PROPOSED STORMWATER CHANNEL
- PROPERTY BOUNDARY
- SUB-BASIN BOUNDARY
- (6.4) SUB-BASIN NAME
- STORMWATER CHANNEL FLOW
- CP6.4 CONCENTRATION POINT
- 100-YEAR FLOODPLAIN
- 25,000 CFS WATER LIMIT DURRING 100-YEAR STORM
- A, B, C 100-YEAR FLOOD PLAIN WITHIN LANDFILL BOUNDARY

N

0 1500 3000 6000 9000

SCALE IN FEET

Proposed Drainage Patterns and Sub-Basin Boundaries

City of Phoenix S.R. 85 Landfill

URS

Figure 6

P:\WRES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\CADD\Figures\Hydrology\Proposed_Drainage.dwg

EXHIBITS

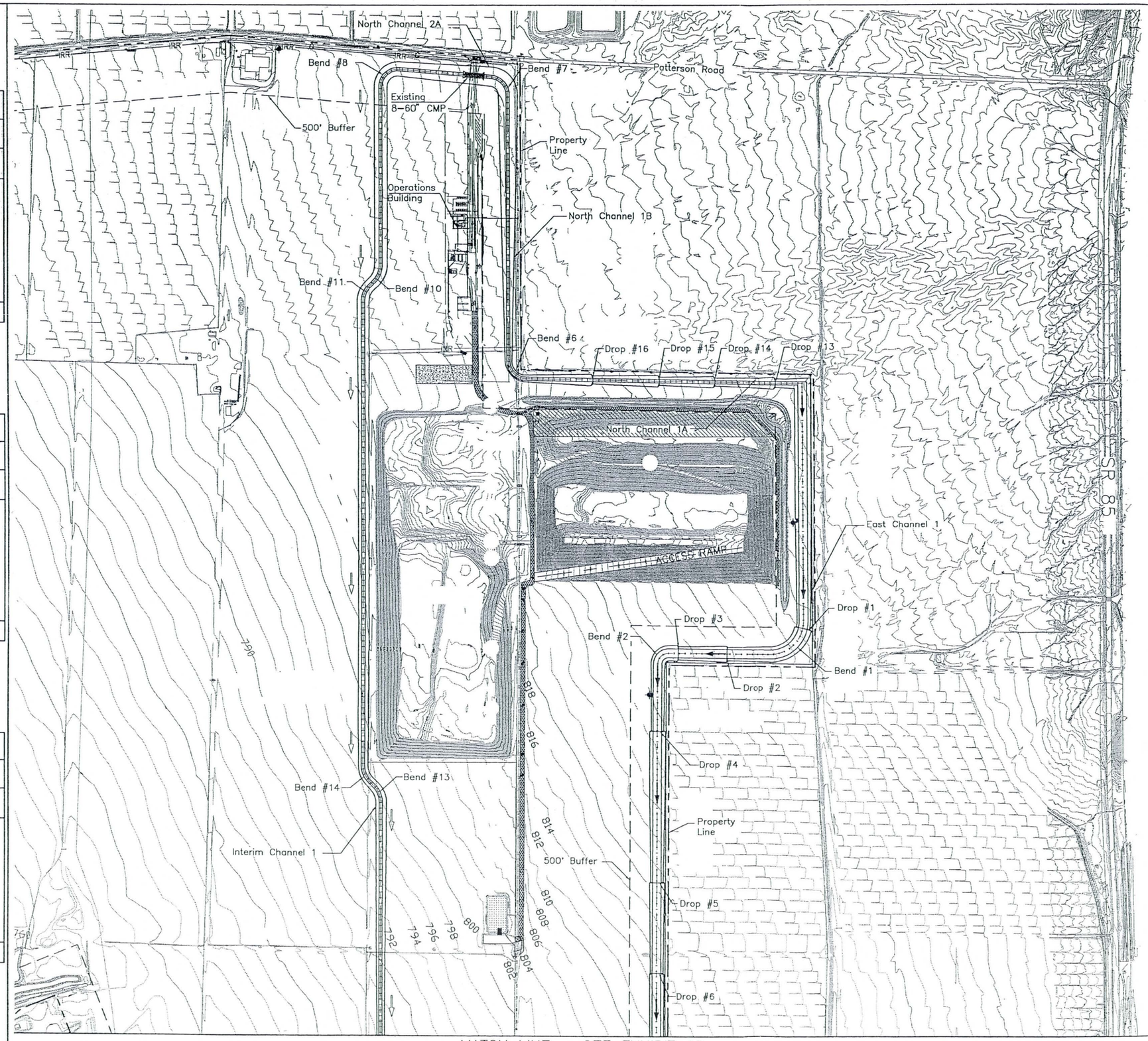
F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			

CONSULTING ENGINEER

DES | DR: | CK: | DATE:

URS

7720 N. 16th Street
Suite 100
Phoenix, Arizona 85020



LEGEND

- Property Boundary
- Buffer Zone Boundary
- Final Stormwater Conveyance Channel
- Interim Stormwater Conveyance Channel

City of Phoenix
N

0 450 900
SCALE IN FEET

"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

SR 85 LANDFILL

CITY OF PHOENIX, ARIZONA
PUBLIC WORKS DEPARTMENT

Drainage Plan
Exhibit 1A

DR: KLP	DES: PAW	CK: MM	SHEET NO:	TOTAL SHEETS
DATE:01/09	DATE: 01/09	DATE: 01/09	1	1 OF 2
SCALE: 1" = 100' H. 1" = 10' V.	(FOR FULL SIZE SHEETS)			

PW168T0004_C-6_90.dwg

REVISION BY CITY OF PHOENIX

NO.	DESCRIPTION	REV BY	CKD BY	DATE

REVISION BY CITY OF PHOENIX

NO.	DESCRIPTION	REV BY	CKD BY	DATE

REVISION BY CITY OF PHOENIX

NO.	DESCRIPTION	REV BY	CKD BY	DATE

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			

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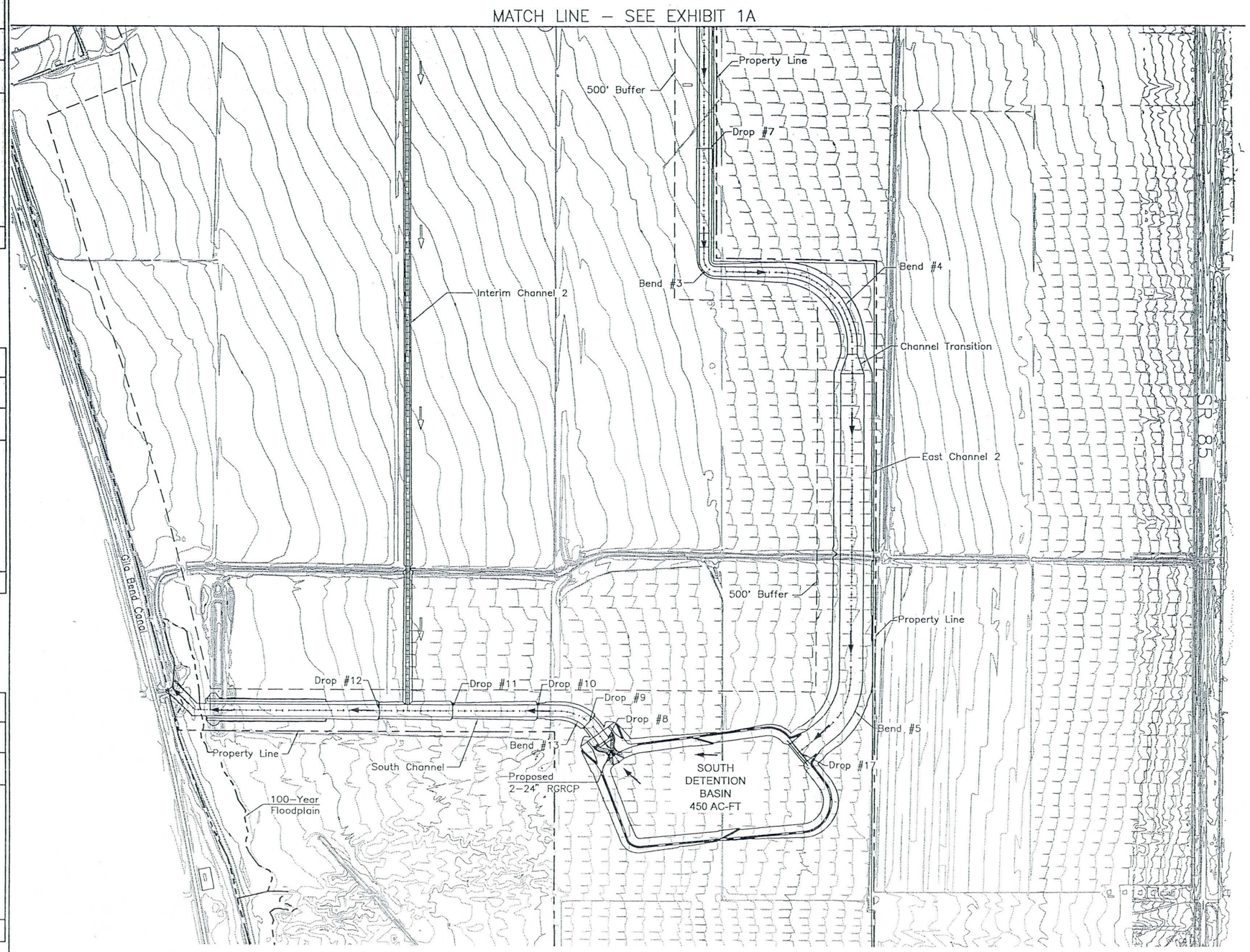
Suite 100
Phoenix, Arizona 85020



LEGEND

- Property Boundary
- Buffer Zone Boundary
- Final Stormwater Conveyance Channel
- Interim Stormwater Conveyance Channel

City of Phoenix
N

0 450 900
SCALE IN FEET

"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

SR 85 LANDFILL

CITY OF PHOENIX, ARIZONA
PUBLIC WORKS DEPARTMENT

Drainage Plan
Exhibit 1B

DR: KLP	DES: PAW	CK: MM	SHEET NO:	TOTAL SHEETS
DATE: 01/09	DATE: 01/09	DATE: 01/09	2	2 OF 2
SCALE: 1" = 100' H. 1" = 10' V.	(FOR FULL SIZE SHEETS)			

NO.	DESCRIPTION	REV BY	CKD BY	DATE

REVISION BY CITY OF PHOENIX

NO.	DESCRIPTION	REV BY	CKD BY	DATE

REVISION BY CITY OF PHOENIX

NO.	DESCRIPTION	REV BY	CKD BY	DATE

REVISION BY CITY OF PHOENIX

SW16B10004_C-7_90.dwg

APPENDIX A

HYDROLOGY UPDATE –TECHNICAL MEMO

Technical Memorandum

URS

7720 N. 16th Street
Suite 100
Phoenix, Arizona 85020
602.371.1100 Tel
602.371.1615 Fax

Action	Info	File
Marty Arambel, P.E.	SR 85 Landfill	PW16810004 23444155

From Marc McIntosh

Date November 16, 2007

Subject **DRAFT** - Alternative 4 – Hydrology Update

HYDROLOGY UPDATE

The purpose of this study is to evaluate the interim conditions hydrology for the stormwater control facilities for the SR 85 landfill. Alternative 4 was selected by the City of Phoenix from the *Interim Stormwater Control Evaluation* as the preferred alternative for the stormwater control plan constructed for the development of Landfill Cells 1, 2 and 3. The hydrologic analysis that was conducted for the existing condition developed for the *Facility Plan Report (FPR) Volume I of IV* was the basis for the hydrologic analysis conducted for the Alternative 4 - Hydrology Update.

Alternative 4 consists of constructing the South Detention Basin to collect stormwater from East Channel 1, and construction of North Channel 1A and 1B, a portion of North Channel 2A, Interim Channels 1 and 2, and the South Channel. An Interim East Channel 2 is constructed to convey flow from East Channel 1 directly to the South Detention Basin. The South Detention Basin controls discharge to the South Channel and allows the interim channels to flow into the South Channel without the need for an interim detention basin. A plan view of Alternative 4 is shown on Figure 1. Approximate dimensions for the channels and basin are provided on Figures 2 and 3. All figures are included in Appendix A.

The drainage area for the project site is approximately 17 square miles. The U.S. Army Corps of Engineers HEC-1 hydrologic modeling software has been used to calculate flow rates at the project site for the interim landfill condition. The existing condition HEC-1 model for this project site (refer to the FPR) was modified to incorporate the interim landfill condition and sub-basins were re-delineated. It should be noted that the existing condition HEC-1 model was

originally based on the effective Flood Insurance Study (FIS) hydrologic model developed by Donohue & Associates, Inc. (1991).

1. SUB-BASINS DELINEATION FOR ALTERNATIVE 4

The sub-basin delineations for this alternative basically follow the effective FIS and are primarily based on the previous sub-basin delineations for the FPR. This alternative considers the levee east of SR-85 failed. The sub-basin delineations for the existing condition HEC-1 model (with the levee failed) are shown in Figure 4. Drainage Areas 4, 5 and 6 have been modified (see Figure 5) as a result of our observations during a site visit (on October 18, 2007), proposed channels and detention basins for Alternative 4. Drainage Area 7 remains the same as in the FPR model (see Figure 6).

2. HEC-1 MODEL PARAMETERS

The primary HEC-1 model inputs are rainfall, sub-basin loss parameters, unit hydrographs and routing reach parameters. For a description of these parameters as related to SR-85 landfill project site, refer to the FPR. The three hydrologic parameters that were revised under Alternative 4 Hydrology Update are as follows:

Lag Time

Lag time for each of the re-delineated sub-basins was calculated using the procedures outlined in the Flood Control District of Maricopa County's Hydrology Manual. Physical data for lag time calculations was obtained from the proposed condition drainage area map. This data includes flow path length (L), the length along the flow path from the basin centroid to the outlet (Lca), slope of the flow path, shape factor and basin roughness, K_n. The results of the lag time calculations are listed in Table 1. This table does not include lag time calculations for Drainage Area 7 as they do not change under the proposed interim condition.

Channel Routing Parameters

Normal depth storage routing was used for channel routing with the same channel infiltration rate of the existing condition HEC-1 model. The same typical cross-sections (channel geometry) were used for routing the flow hydrographs through those channels for which no changes were made. However, the Alternative 4 proposed condition includes two interim channels in addition to the final built-out segments of the east and north channels (1A, 1B, & 2A). The routing parameters for all channel routing are included in Table 2. This table does not include channel

routing parameters for Drainage Area 7 as they do not change under the proposed interim condition.

Reservoir Routing

The off-site detention basin that was recommended at the southeast corner of the project site under the FPR study was updated in this phase of the study by keeping the same elevation-storage-outflow parameters of the FPR HEC-1 model. The FPR study used the Level-Pool Reservoir Routing procedure for the proposed detention basins. Detention basin volume versus elevation relationships and spillway sizes for the proposed detention basins were based on preliminary estimates of detention basin and spillway sizes. For the detention basin volume versus elevation relationship calculations and for the outflow versus elevation relationship calculations, refer to FPR.

Table-1:

Sub-Basin No.	Area (mi^2)	L (mi)	Lca (mi)	Slope (ft/mi)	Shape Factor	Kn	LAG (min)
4.1	0.66	1.25	0.56	66	0.09	0.06	34.04
4.2	1.35	2.20	1.07	42	0.36	0.06	58.80
5.1	0.91	2.05	1.24	170	0.19	0.06	46.42
5.3	0.54	1.62	0.64	27	0.20	0.035	27.32
5.4	1.28	1.36	0.64	50	0.12	0.05	32.48
6.1	3.91	4.48	1.92	250	0.54	0.06	68.56
6.2	0.31	1.00	0.24	54	0.03	0.05	19.62
6.3	2.53	2.94	1.34	555	0.17	0.06	43.79
6.4	0.37	1.15	0.22	51	0.04	0.05	20.23
6.5	0.70	1.97	0.76	31	0.27	0.035	30.60
6.6	1.05	2.10	0.94	257	0.12	0.06	38.98
6.7	0.45	1.83	1.02	60	0.24	0.06	50.31
6.8	0.29	1.92	0.95	58	0.24	0.06	50.19
6.9	0.60	0.75	0.18	61	0.02	0.05	15.40
6.10	0.38	1.51	0.47	48	0.10	0.05	30.29
6.11	2.17	2.97	1.21	551	0.15	0.06	42.34
6.12	0.51	1.32	1.55	58	0.27	0.05	43.69
6.13	0.44	0.96	0.52	75	0.06	0.06	29.21

Table-2:

Segment	NSTEP	PERCRT	Reach Length (ft)	Slope (ft/ft)	Channel Manning's n
4R1	3	10	8806	0.0098	0.05
5R1	5	10	8305	0.0020	0.03
5R3	5	10	7339	0.0020	0.03
6R1	1	10	3021	0.0182	0.05
6R2	2	10	5125	0.0068	0.03
6R10	3	10	1978	0.0030	0.03
6R3	1	10	4312	0.0130	0.03
6R12	2	10	2340	0.0020	0.03
6R11	1	10	4144	0.0140	0.03
6R4	2	10	1232	0.0020	0.03
RB1	2	10	1622	0.0025	0.03
6R5	2	10	2505	0.0090	0.03
6R6	3	10	9466	0.0118	0.05

3. RESULTS

The results of the hydrologic analysis are described within the HEC-1 outputs. HEC-1 outputs for this study are included in Appendix B.

The 100-year peak discharges at concentration points for the proposed interim condition are listed in Table 3. At CP6 (Gila Bend Canal overchute), the 100-year peak discharge for the existing condition (with the levee assumed to be failed) is 4,276 cfs with a contributing area of 12.08 square miles. Under the proposed interim condition, the 100-year peak discharge at CP6 is 2,927 cfs with a contributing area of 15.16 square miles. The 100-year peak discharge for the proposed interim condition is lower than the 100-year peak discharge for the existing condition due to the proposed detention basin. At CP 6&7 (combination of sub-basins 6 and 7), the 100-year peak discharge for the existing condition is 6,396 cfs with a contributing area of 34.66 square miles. Under the proposed interim condition, the 100-year peak discharge at CP 6&7 is 4,132 cfs with a contributing area of 37.74 square miles. The combined flows of sub-basins 6 and 7 are also significantly lower in the proposed interim condition than in the existing condition due to the proposed detention basin.

Table-3 100-year Peak Discharge for the Proposed Interim Condition (Levee East of SR 85 is assumed to be failed)

Concentration Point	Drainage Area (mi^2)	100-year Peak Discharge (cfs)
CP4.1	0.66	596
CP4.2	1.35	516
CP5.1	0.91	655
CP5.3	1.45	674
CP5.4	1.28	899
CP6.2	4.22	1,806
CP6.10	4.60	2,078
CP6.12	7.64	4,001
CP6.4	10.18	5,741
CP6.5	12.77	2,758
CP6	15.16	2,927
CP 6&7	37.74	4,132

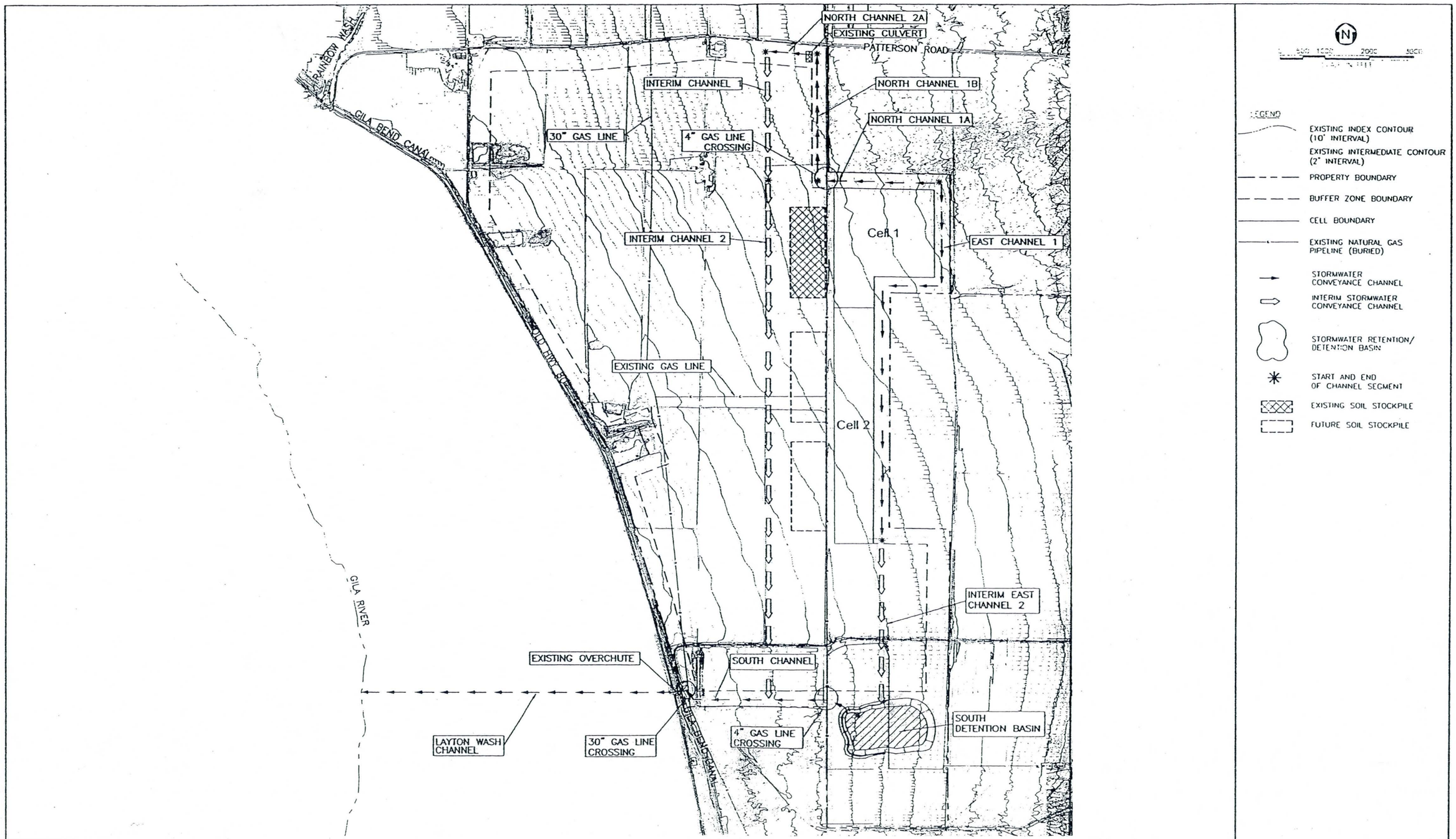
4. CONCLUSIONS

The 100-year peak discharges and stormwater runoff volumes for the existing and the interim proposed conditions at landfill site are estimated using the HEC-1 computer program. The proposed interim drainage design for the landfill site accomplishes the following goals:

1. Dissipate peak runoff discharge to the Gila Bend Canal Overchute so that the existing maximum peak discharge is not exceeded.

2. Control the 100-year runoff in the proposed channel and basin system in order to limit the total runoff volume leaving the site to pre-development conditions.

APPENDIX A



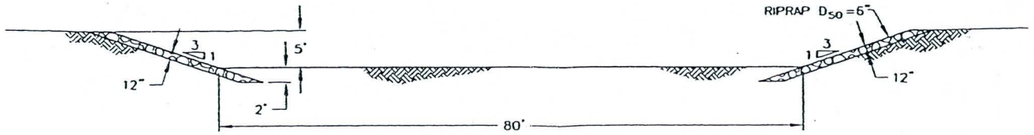
REFERENCE: TOPOGRAPHIC SURVEY
PREPARED BY URS CORPORATION
ON MARCH 15, 2002.

Alternative 4 - Interim Stormwater Control System
City of Phoenix SR 85 Landfill

URS

Figure 1

© \\URS\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\CADD\Figures\Hydrology\Final_Interim_Storm_Channel_alt4 11-7-07



TYPICAL SECTION EAST CHANNEL 1

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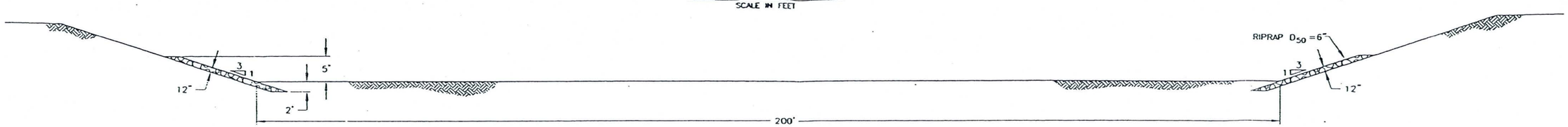
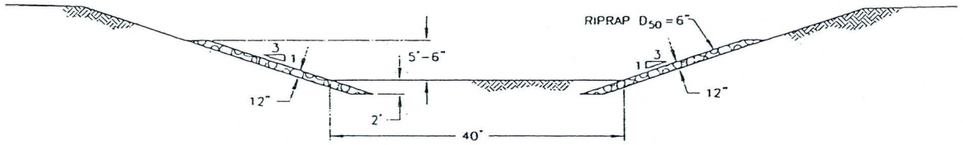
SCALE IN FEET



TYPICAL SECTION EAST CHANNEL 2

0 5 10 20 30
SCALE IN FEET



TYPICAL SECTION NORTH CHANNEL 1A AND 1B

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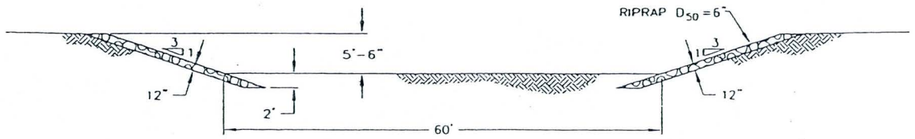
SCALE IN FEET



TYPICAL SECTION NORTH CHANNEL 2

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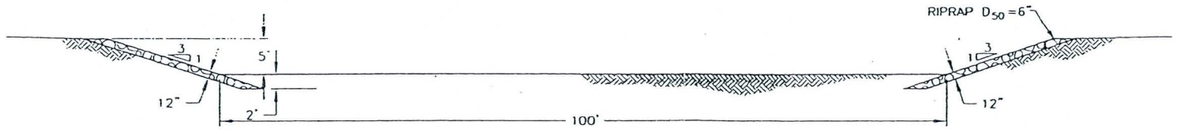
SCALE IN FEET



TYPICAL SECTION SOUTH CHANNEL

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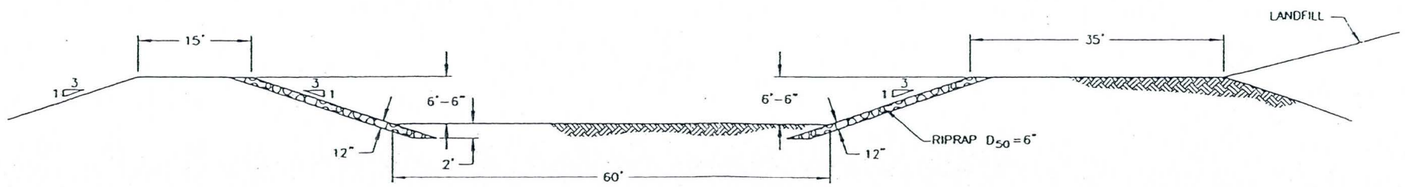
SCALE IN FEET



TYPICAL WEST CHANNEL

0 5 10 20 30
SCALE IN FEET

LEGEND:

SUBGRADE

COARSE ROCK RIP RAP

NOTE: PLAN VIEWS OF THE CHANNELS ARE SHOWN ON FIGURE 1.
RIPRAP WILL EXTEND TO TOP OF FREEBOARD.

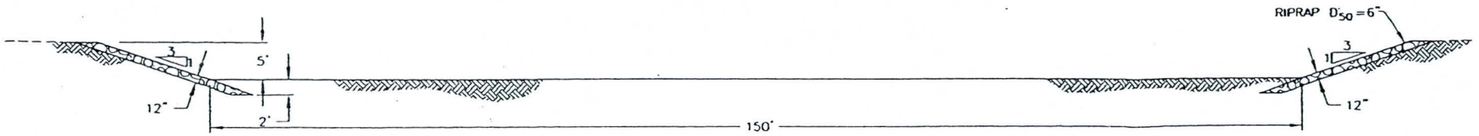
URS

Typical Channel Cross Sections

City of Phoenix S.R. 85 Landfill

Figure 2

P:\#RES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\CADD\Figures\Hydrology\A17080.dwg 11-7-07



TYPICAL SECTION LAYTON WASH CHANNEL

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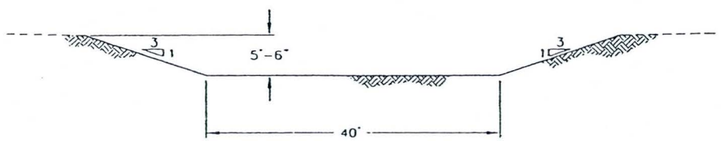
SCALE IN FEET



TYPICAL SECTION INTERIM CHANNEL 1 & 2

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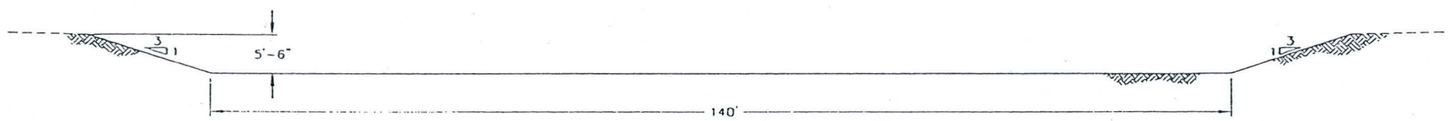

TYPICAL SECTION INTERIM EAST CHANNEL 2

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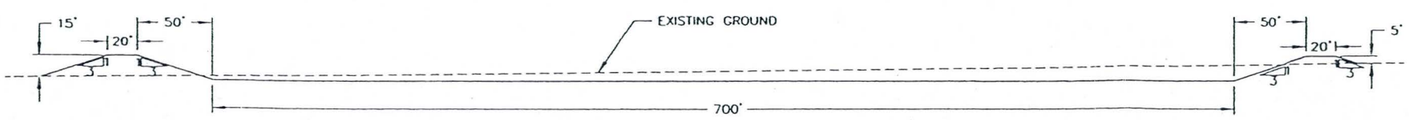
SCALE IN FEET



TYPICAL DETENTION BASIN SECTION A-A

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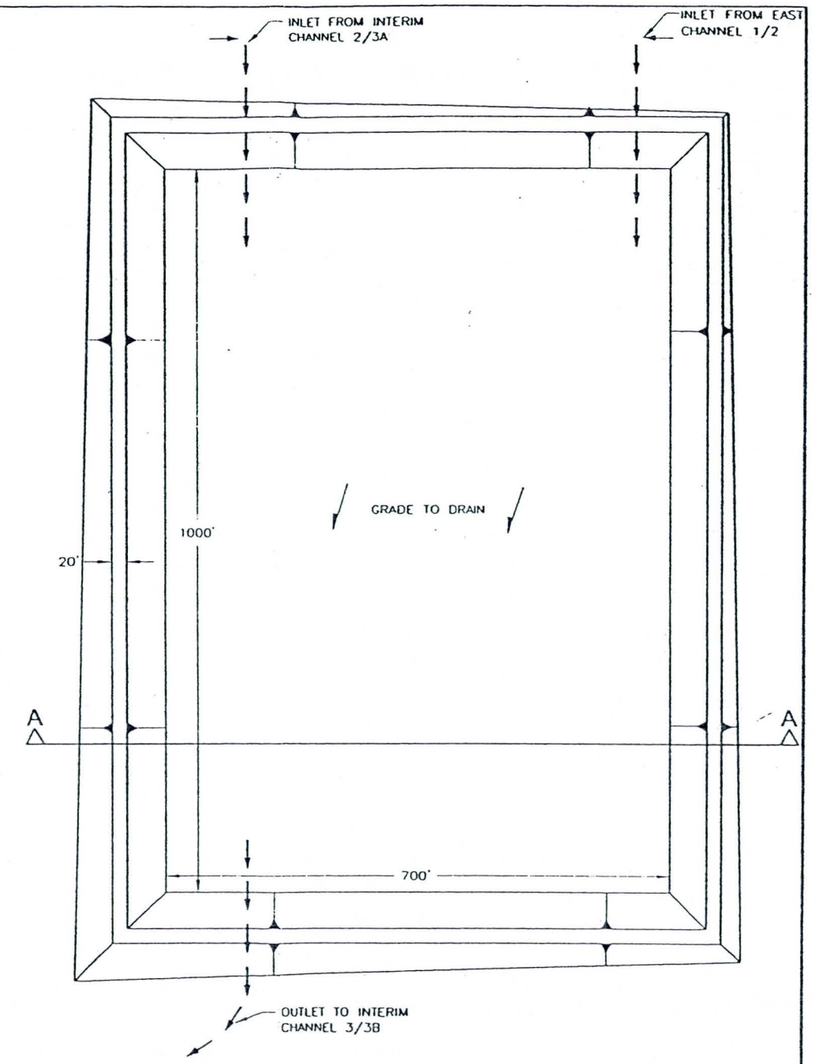
SCALE IN FEET



TYPICAL INTERIM DETENTION BASIN PLAN

0 50 100 200 300
SCALE IN FEET

LEGEND:

SUBGRADE
COARSE ROCK RIP RAP

NOTE: PLAN VIEWS OF THE CHANNELS ARE SHOWN ON FIGURE 1.
RIPRAP WILL EXTEND TO TOP OF FREEBOARD.

URS

Typical Channel And Basin Cross Sections

City of Phoenix S.R. 85 Landfill

Figure 3

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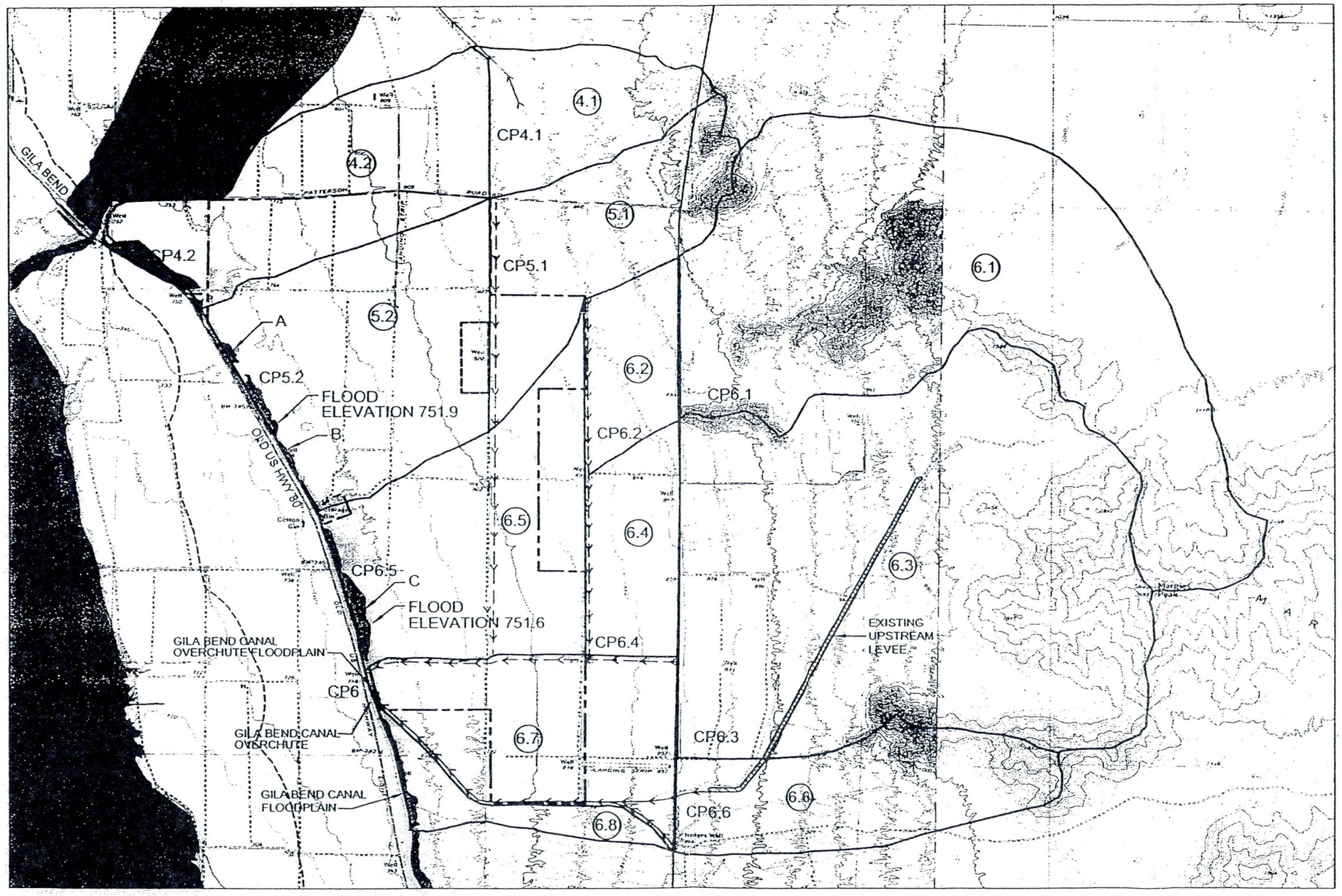


REFERENCE: USGS TOPOGRAPHIC QUAD
COTTON CENTER NW, AZ 1973;
FLOODPLAIN - MARICOPA COUNTY
FLOOD CONTROL DISTRICT, 2000

LEGEND:

- EXISTING IRRIGATION TAILWATER CHANNELS
- PROPERTY BOUNDARY
- SUB-BASIN BOUNDARY
- (6.4) SUB-BASIN NAME
- CP6.4 CONCENTRATION POINT
- 100-YEAR FLOODPLAIN
- 25,000 CFS WATER LIMIT DURRING 100-YEAR STORM
- A, B, C 100-YEAR FLOOD PLAIN WITHIN LANDFILL BOUNDARY

N

0 1500 3000 6000 9000
SCALE IN FEET

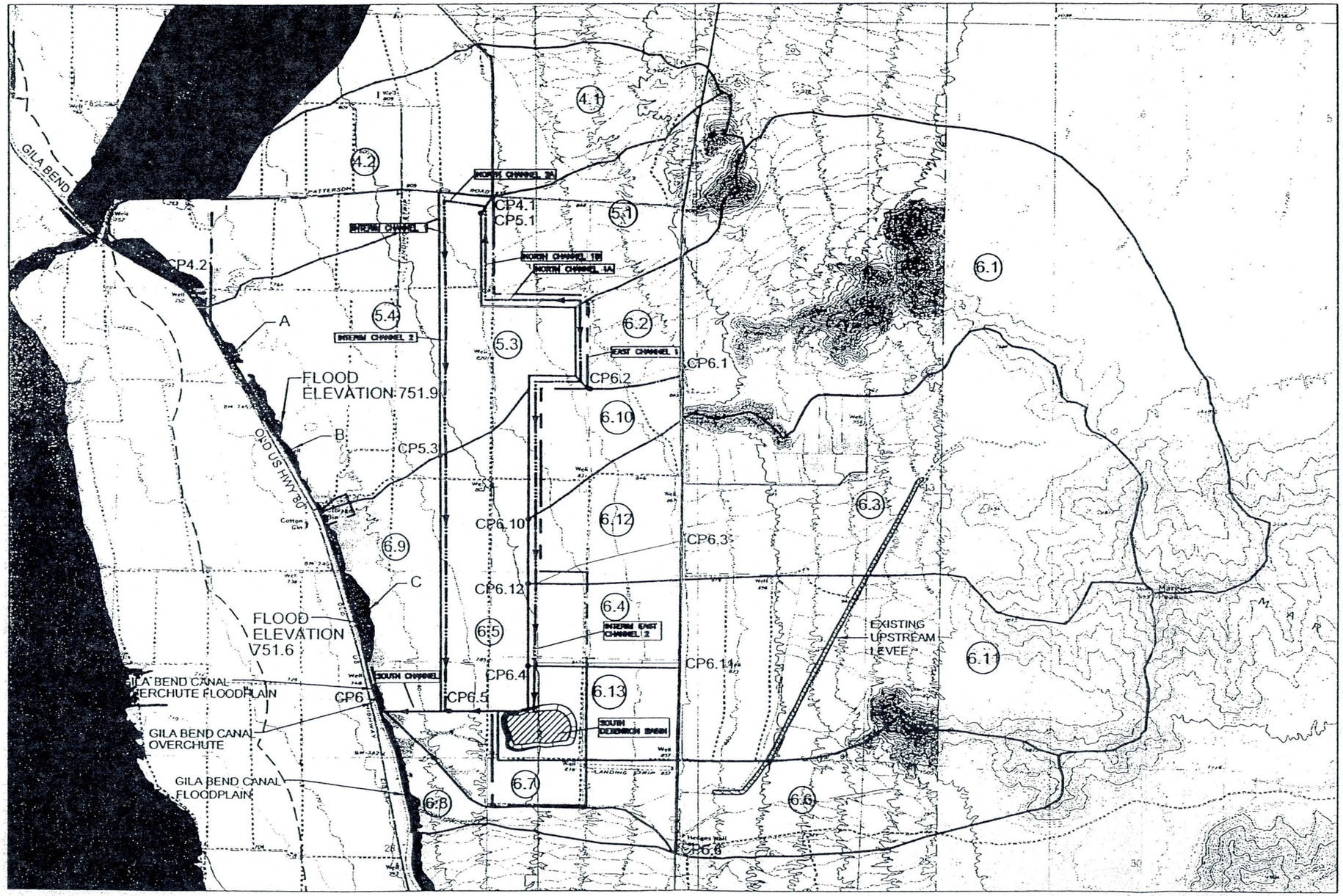
Existing Drainage Patterns and Sub-Basin Boundaries

City of Phoenix S.R. 85 Landfill

URS

Figure 4

P:\WRES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\CADD\Figures\Hydrology\A15731.dwg 11-7-07



REFERENCE: USGS TOPOGRAPHIC QUAD COTTON CENTER NW, AZ 1973; FLOODPLAIN - MARICOPA COUNTY FLOOD CONTROL DISTRICT, 2000

LEGEND:

- PROPOSED STORMWATER CHANNEL
- PROPERTY BOUNDARY
- SUB-BASIN BOUNDARY
- (6.4) SUB-BASIN NAME
- STORMWATER CHANNEL FLOW
- CP6.4 CONCENTRATION POINT
- 100-YEAR FLOODPLAIN
- 25,000 CFS WATER LIMIT DURRING 100-YEAR STORM
- A, B, C 100-YEAR FLOOD PLAIN WITHIN LANDFILL BOUNDARY

N

0 1500 3000 6000 9000

SCALE IN FEET

Proposed Drainage Patterns and Sub-Basin Boundaries

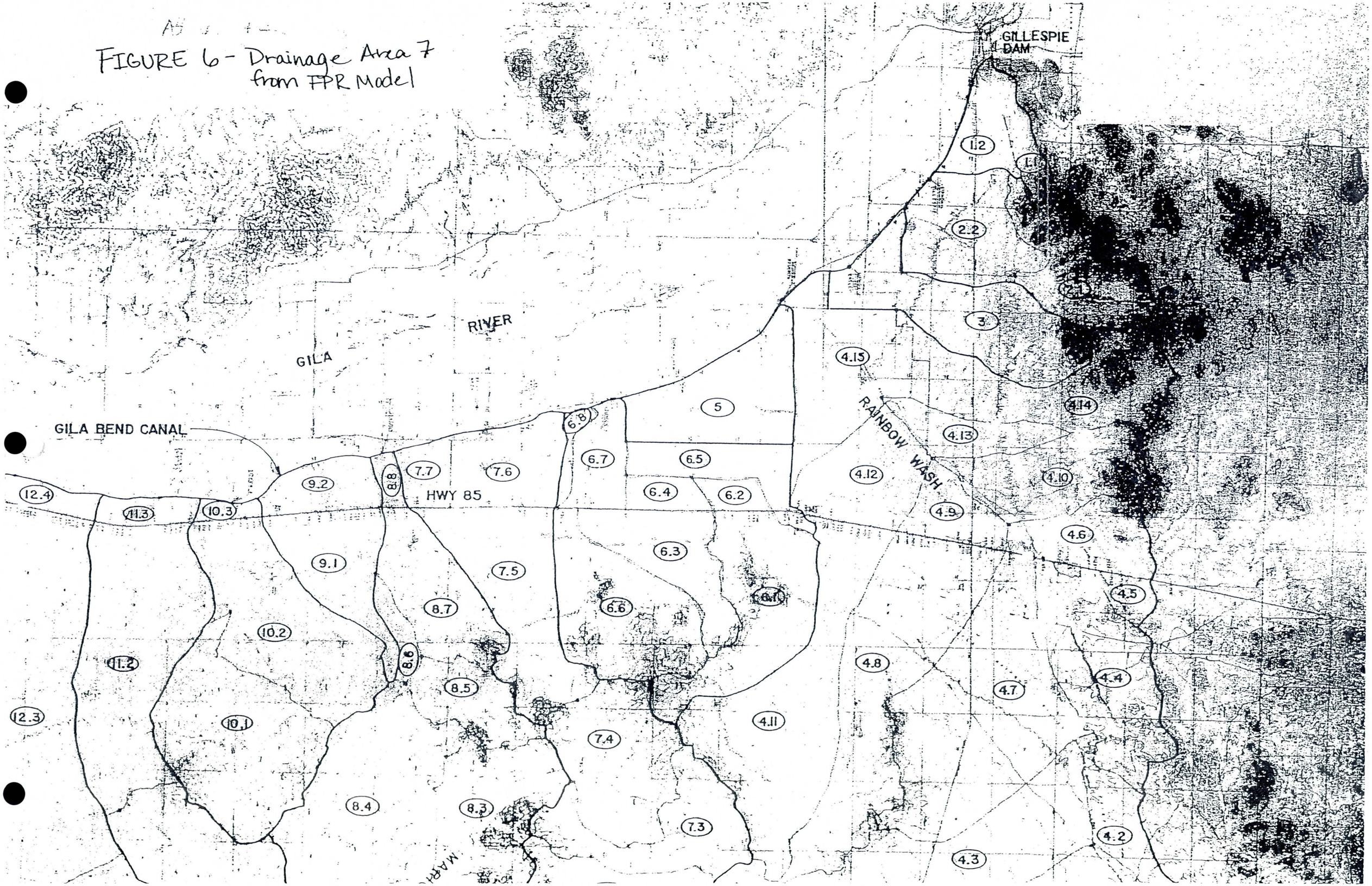
City of Phoenix S.R. 85 Landfill

URS

Figure 5

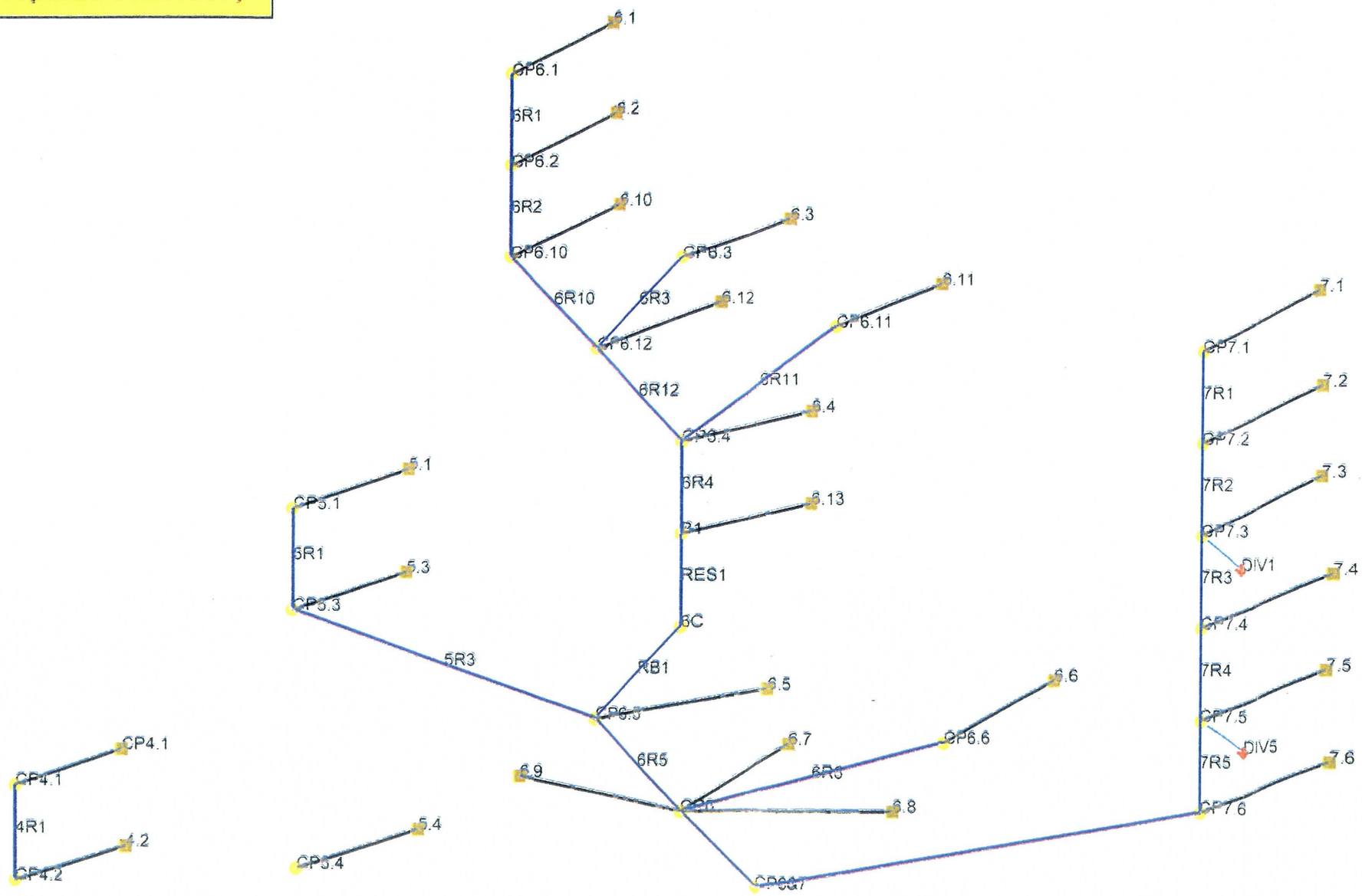
P:\WRES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\CADD\Figures\Hydrology\Proposed_Drainage.dwg

FIGURE 6 - Drainage Area 7
from FPR Model



APPENDIX B

HEC-1 Hydrologic Tree (Proposed Condition)



APPENDIX B

DESIGN CALCULATIONS – SR85 LANDFILL STORM DRAIN CHANNELS

DESIGN CALCULATIONS

1. Channel Properties – Flow Master
2. Channel transition Calculation
3. Drop Structure Design
4. Riprap Design – Channel Lining
5. Channel Scour for Toe-downs and Bends
6. Super Elevation Calculation
7. Splash Pad Design
8. Detention Basin Calculation

URS

CALCULATION COVER SHEET

Client: City of Phoenix

Project Name: SR-85 Landfill

Project/Calculation Number: 23444155

Title: Lag Time Calculation and HEC-1 Model

Total Number of Pages (including cover sheet):

Total Number of Computer Runs:

Prepared by: Ashley Meyer

Date: 11/19/07

Checked by: Md. Abdur Rahman

Date: 11/20/07

Description and Purpose:

The purpose of this calculation was to determine the lag times associated with each sub-basin in the proposed condition model.

Design Basis /Assumptions

Lag times were computed using the methodology outlined in the Maricopa County Hydrology Manual.

Remarks/Conclusions/Results:

The lag times are given in the following table.

Calculation Approved by: 11.20.07

Project Manager/Date

Revision No.:	Description of Revision:	Approved by:
N/A	No Comments	/ 11.20.07

Project Manager/Date

Sub-Basin No.	Area (mi^2)	L (mi)	Lca (mi)	Slope (ft/mi)	Shape Factor	Kn	LAG (min)
4.1	0.66	1.25	0.56	66	0.09	0.06	34.04
4.2	1.35	2.20	1.07	42	0.36	0.06	58.80
5.1	0.91	2.05	1.24	170	0.19	0.06	46.42
5.3	0.54	1.62	0.64	27	0.20	0.035	27.32
5.4	1.28	1.36	0.64	50	0.12	0.05	32.48
6.1	2.91	3.48	1.92	250	0.54	0.06	68.56
6.2	0.31	1.00	0.24	54	0.03	0.05	19.62
6.3	2.53	2.94	1.34	555	0.17	0.06	43.79
6.4	0.37	1.15	0.22	51	0.04	0.05	20.23
6.5	0.70	1.97	0.76	31	0.27	0.035	30.60
6.6	1.05	2.10	0.94	257	0.12	0.06	38.98
6.7	0.67	1.82	0.92	160	0.24	0.06	50.31
6.8	0.29	1.92	0.95	58	0.24	0.06	50.19
6.9	0.30	0.75	0.38	61	0.08	0.05	15.40
6.10	0.38	1.51	0.47	48	0.10	0.05	30.29
6.11	2.17	2.97	1.21	551	0.15	0.06	42.34
6.12	0.51	1.32	1.55	58	0.27	0.05	43.69
6.13	0.44	0.96	0.52	75	0.06	0.06	29.21

	A	B	C	D	E	F	G	H
3	**Sub-Basin No.**	**Area**	**L**	**Lca**	**Slope**	**Shape Factor**	**Kn**	**LAG**
4		**(mi^2)**	**(mi)**	**(mi)**	**(ft/mi)**			**(min)**
5	4.1	0.664783595902204	1.25	0.56	66	=C5*D5/E5^0.5	0.06	=24*G5*F5^0.38*60
6	4.2	1.34729912764004	2.2	1.07	42	=C6*D6/E6^0.5	0.06	=24*G6*F6^0.38*60
7	5.1	0.905612768308081	2.05	1.24	170	=C7*D7/E7^0.5	0.06	=24*G7*F7^0.38*60
8	5.3	0.539973312672176	1.62	0.64	27	=C8*D8/E8^0.5	0.035	=24*G8*F8^0.38*60
9	5.4	1.27501233930211	1.36	0.64	50	=C9*D9/E9^0.5	0.05	=24*G9*F9^0.38*60
10	6.1	3.91379064078283	4.48	1.92	250	=C10*D10/E10^0.5	0.06	=24*G10*F10^0.38*60
11	6.2	0.31	1	0.24	54	=C11*D11/E11^0.5	0.05	=24*G11*F11^0.38*60
12	6.3	2.53092397698577	2.94	1.34	555	=C12*D12/E12^0.5	0.06	=24*G12*F12^0.38*60
13	6.4	0.37	1.15	0.22	51	=C13*D13/E13^0.5	0.05	=24*G13*F13^0.38*60
14	6.5	0.701403667355372	1.97	0.76	31	=C14*D14/E14^0.5	0.035	=24*G14*F14^0.38*60
15	6.6	1.04760086662075	2.1	0.94	257	=C15*D15/E15^0.5	0.06	=24*G15*F15^0.38*60
16	6.7	0.452855759297521	1.83	1.02	60	=C16*D16/E16^0.5	0.06	=24*G16*F16^0.38*60
17	6.8	0.286052607036272	1.92	0.95	58	=C17*D17/E17^0.5	0.06	=24*G17*F17^0.38*60
18	6.9	0.599938446969697	0.75	0.18	61	=C18*D18/E18^0.5	0.05	=24*G18*F18^0.38*60
19	6.1	0.38	1.51	0.47	48	=C19*D19/E19^0.5	0.05	=24*G19*F19^0.38*60
20	6.11	2.1669606577135	2.97	1.21	551	=C20*D20/E20^0.5	0.06	=24*G20*F20^0.38*60
21	6.12	0.508694150309917	1.32	1.55	58	=C21*D21/E21^0.5	0.05	=24*G21*F21^0.38*60
22	6.13	0.44	0.96	0.52	75	=C22*D22/E22^0.5	0.06	=24*G22*F22^0.38*60

```
1**********************************
*                                *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            JUN   1998          *
*          VERSION 4.1           *
*                                *
*  RUN DATE   23FEB09  TIME  16:01:46  *
*                                *
**********************************
```

```
**********************************
*                                *
*   U.S. ARMY CORPS OF ENGINEERS *
*   HYDROLOGIC ENGINEERING CENTER *
*         609 SECOND STREET      *
*      DAVIS, CALIFORNIA 95616   *
*          (916) 756-1104        *
*                                *
**********************************
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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          PHOENIX LANDFILL CLOMR
  2           ID          CITY OF PHOENIX
  3           ID          URS   1/8/08
  4           ID          proposed_24HR.DAT
  5           ID          2-YEAR, 5-YEAR, 10-YEAR, AND 100-YEAR STORM (PROPOSED CONDITION WITH
  6           IT      5                   300
  7           IO      3
              *DIAGRAM
  8           JR    PREC    0.34    0.50    0.61     1.0
  9           IN      15
              * ***********************************************************************

 10           KK   CP4.1
 11           KM   BASIN 4.1
 12           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 13           KM    L=      1.25  Lca=       .56   S=    66.0  Kn= .060  LAG=  34.0
 14           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 15           BA     .66
 16           PB    4.08
 17           KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
 18           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 19           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 20           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 21           PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
 22           PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
 23           PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
 24           PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
 25           PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
 26           PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
 27           PC    .984    .987    .990    .993    .996    .999   1.000
 28           LG     .32     .33    4.20     .38     .00
 29           UI     98.    322.    527.    716.    449.    250.    103.     48.     20.     20.
 30           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 31           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * ***********************************************************************

 32           KK   4R1
 33           KM    ROUTE FROW TO CP4.2
 34           RS      3    FLOW      -1
 35           RL                     10     792
 36           RC   0.05    0.05    0.05    8806  0.0098     794
 37           RX      0     924     932     940     944     950     956    1730
 38           RY    794   792.4     794     792     792   794.6     793     794
              * ***********************************************************************

 39           KK   4.2
 40           KM   BASIN 4.2
 41           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 42           KM    L=      2.2  Lca=      1.07   S=    42.0  Kn= .060  LAG=  59
 43           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 44           BA    1.35
 45           LG     .38     .35    4.30     .43     .00
 46           UI     81.    212.    394.    507.    677.    990.    777.    600.    454.    317.
 47           UI    162.    123.     81.     33.     25.     25.     25.      0.      0.      0.
 48           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * ***********************************************************************
```

1

HEC-1 INPUT

PAGE 2

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  49          KK   CP4.2
  50          KM   COMBINE Q FROM BASINS 4.2 AND ROUTED FLOW FROM BASIN 4.1
  51          HC       2
              * ***********************************************************************

  52          KK    5.4
  53          KM   BASIN 5.4
  54          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  55          KM    L=     1.36  Lca=      .64   S=   50.0  Kn= .050  LAG=  32.5
  56          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  57          BA    1.28
  58          LG     .44     .35    4.30     .62     .00
  59          UI    250.    819.   1366.   1761.   1090.    575.    245.    106.     50.      0.
  60          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
  61          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * ***********************************************************************

  62          KK     5.1
  63          KM   BASIN 5.1
  64          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  65          KM    L=     2.05  Lca=     1.24   S=    170  Kn= .060  LAG=  46.4
  66          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  67          BA     .91
  68          KM   RAINFALL DEPTH OF 4.13 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
  69          KM   AN AREAL REDUCTION COEFFICIENT OF  .9181 WAS USED
  70          PB    4.06
  71          KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
  72          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
  73          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
  74          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
  75          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
  76          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
  77          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
  78          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
  79          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
  80          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
  81          PC    .984    .987    .990    .993    .996    .999   1.000
  82          LG     .44     .34    4.00     .38     .00
  83          UI    124.    433.    663.   1083.    791.    519.    243.    128.     56.     29.
  84          UI     29.      0.      0.      0.      0.      0.      0.      0.      0.      0.
  85          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * ***********************************************************************

  86          KK     5R1
  87          KM    ROUTE FLOW TO CP5.3
  88          RS       5    FLOW      -1
  89          RL                     10     810
  90          RC   0.030   0.030   0.030    8305   .0032     817
  91          RX       0     100     200   216.5   246.5     263     363     463
  92          RY     817     817     817   811.5   811.5     817     817     817
              * ***********************************************************************
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  93          KK     5.3
  94          KM   BASIN 5.3
  95          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  96          KM    L=     1.62  Lca=      .64   S=    27.0  Kn= .060  LAG=  46.8
  97          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  98          BA     .54
  99          LG     .44     .34    4.00     .38     .00
 100          UI    124.    433.    663.   1083.    791.    519.    243.    128.     56.     29.
 101          UI     29.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 102          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * ***********************************************************************

 103          KK   CP5.3
 104          KM    COMBINE Q FROM BASIN 5.3 AND ROUTED FLOW FROM BASIN 5.1
 105          HC       2
              * ***********************************************************************

 106          KK     5R3
 107          KM    ROUTE FLOW TO CP6.5
 108          RS       5    FLOW      -1
 109          RL                     10     800
 110          RC    .030    .030    .030    7339   .0032     803
 111          RX       0     100     200   216.5   246.5     263     363     463
 112          RY     803     803     803   797.5   797.5     803     803     803
              * ***********************************************************************

 113          KK     6.5
 114          KM   BASIN 6.5
 115          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 116          KM    L=       2.0  Lca=      .76   S=    31.0  Kn= .050  LAG=  43.7
 117          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 118          BA     .70
 119          PB    4.09
 120          KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
 121          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
```

```
PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
PC    .984    .987    .990    .993    .996    .999   1.000
IN      15
LG     .44     .35    4.30     .62     .00
UI    168.    607.    921.   1533.   1260.    842.    479.    225.    121.     42.
UI     42.      0.      0.      0.      0.      0.      0.      0.      0.      0.
UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
* ************************************************************************
```

1

HEC-1 INPUT

PAGE 4

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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     6.1
KM   BASIN 6.1
KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM    L=      4.5  Lca=      1.9   S=  250.0  Kn= .060  LAG=  68.6
KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA    3.91
PB    3.86
KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
PC    .984    .987    .990    .993    .996    .999   1.000
LG     .50     .28    6.40     .21       7
UI    192.    378.    819.   1062.   1317.   1736.   2384.   1868.   1499.   1185.
UI    926.    596.    335.    285.    192.    103.     59.     59.     59.     59.
UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
* ************************************************************************

KK     6R1
KM    ROUTE FLOW TO CP6.2
RS       1    FLOW      -1
RL                      10     862
RC     .05    .050    .050    3021   .0182     868
RX       0     845     870     878     894     908     911    1788
RY     868     866     864     862     862     864     866     868
* ************************************************************************

KK     6.2
KM   BASIN 6.2
KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM    L=      1.0  Lca=      .24   S=   54.0  Kn= .050  LAG=  19.6
KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA     .31
LG     .39     .35    4.00     .38     .00
UI     91.    279.    516.    413.    227.     81.     32.     15.      0.      0.
UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
* ************************************************************************

KK   CP6.2
KM    COMBINE Q FROM BASINS 6.1 AND 6.2
HC       2
* ************************************************************************
```

1

HEC-1 INPUT

PAGE 5

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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     6R2
KM    ROUTE FLOW TO CP6.10
RS       2    FLOW      -1
RL                      10     820
RC    .030    .030    .030    5125    .002     815
RX       0     100     200     215     295     310     410     510
RY     815     815     815     810     810     815     815     815
* ************************************************************************

KK    6.10
KM   BASIN 6.10
KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM    L=      1.51  Lca=      .47   S=   48.0  Kn= .050  LAG=  30.3
KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA     .38
LG     .39     .35    4.00     .38     .00
UI     91.    279.    516.    413.    227.     81.     32.     15.      0.      0.
UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
* ************************************************************************

KK  CP6.10
```

```
195        KM    COMBINE ROUTED FLOW FROM BASIN 6.2 AND BASIN 6.10.
196        HC       2
           * ***********************************************************************

197        KK    6R10
198        KM    ROUTE FLOW TO CP6.12
199        RS       3    FLOW      -1
200        RL                      10      810
201        RC    .030     .030     .030    1978     .002      815
202        RX       0      100      200     215      295      310      410      510
203        RY     815      815      815     810      810      815      815      815
           * ***********************************************************************

204        KK     6.3
205        KM   BASIN 6.3
206        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
207        KM    L=     3.15  Lca=     1.55   S=  519.0  Kn= .060  LAG=  48.1
208        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
209        BA    2.53
210        LG     .38      .32     4.70     .32        1
211        UI    278.     768.    1392.   1799.    2514.    3339.    2475.    1895.    1418.     847.
212        UI    476.     340.     210.     85.      85.      85.       0.       0.       0.       0.
213        UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.
           * ***********************************************************************

214        KK     6R3
215        KM    ROUTE FLOW TO CP6.12
216        RS       1    FLOW      -1
217        RL                      10      835
218        RC    .050     .030     .050    4312    .0130    842.5
219        RX       0     1209     1242    1258     1271     1285     1312     2383
220        RY   842.5      841    842.6     836      836    841.6      841    842.5
           * ***********************************************************************
1                                        HEC-1 INPUT                                                PAGE  6

LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

221        KK    6.12
222        KM   BASIN 6.12
223        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
224        KM    L=     1.32  Lca=     1.55   S=   58.0  Kn= .050  LAG=  43.7
225        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
226        BA     .51
227        LG     .50      .30     4.00     .55      .00
228        UI     84.     277.     459.    605.     378.     205.      86.      38.      17.      17.
229        UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.
230        UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.
           * ***********************************************************************

231        KK  CP6.12
232        KM    COMBINE ROUTED FLOW FROM BASIN 6.10, ROUTED FLOW FROM BASIN 6.3, AND BASIN 6
233        HC       3
           * ***********************************************************************

234        KK    6R12
235        KM    ROUTE FLOW TO CP6.4
236        RS       2    FLOW      -1
237        RL                      10      820
238        RC    .030     .030     .030    2340    .0020      826
239        RX       0      100      200   216.5    356.5      373      473      573
240        RY     826      826      826   820.5    820.5      826      826      826
           * ***********************************************************************

241        KK    6.11
242        KM   BASIN 6.11
243        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
244        KM    L=     2.97  Lca=     1.21   S=  551.0  Kn= .060  LAG=  42.3
245        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
246        BA    2.17
247        LG     .38      .32     4.70     .32        1
248        UI    278.     768.    1392.   1799.    2514.    3339.    2475.    1895.    1418.     847.
249        UI    476.     340.     210.     85.      85.      85.       0.       0.       0.       0.
250        UI      0.       0.       0.      0.       0.       0.       0.       0.       0.       0.
           * ***********************************************************************

251        KK    6R11
252        KM    ROUTE FROW TO CP6.4
253        RS       1    FLOW      -1
254        RL                      10      830
255        RC    .050     .030     .050    4144    .0140    842.5
256        RX       0     1209     1242    1258     1271     1285     1312     2383
257        RY   842.5      841    842.6     836      836    841.6      841    842.5
           * ***********************************************************************

258        KK     6.4
259        KM   BASIN 6.4
260        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
261        KM    L=     1.15  Lca=      .22   S=   51.0  Kn= .050  LAG=  20.2
262        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
263        BA     .37
264        LG     .50      .30     4.00     .55      .00
1                                        HEC-1 INPUT                                                PAGE  7

LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
265     UI     84.    277.    459.    605.    378.    205.     86.     38.     17.     17.
266     UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
267     UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
        * ***********************************************************************************

268     KK   CP6.4
269     KM    COMBINE ROUTED FLOW FROM BASIN 6.12, ROUTED FLOW FROM BASIN 6.11, AND BASIN
270     HC       3
        * ***********************************************************************************

271     KK     6R4
272     KM    ROUTE FLOW TO OFF-SITE DETENTION BASIN B1
273     RS       2    FLOW      -1
274     RL                      10     815
275     RC    .030    .030    .030    1232   .0020     821
276     RX       0     100     200   216.5   356.5     373     473     573
277     RY     821     821     821   815.5   815.5     821     821     821
        * ***********************************************************************************

278     KK    6.13
279     KM   BASIN 6.13
280     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
281     KM    L=       .96  Lca=       .52   S=   75.0  Kn= .060  LAG=  29.2
282     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
283     BA     .44
284     LG     .46     .34    4.20     .58     .00
285     UI     78.    260.    423.    568.    895.    771.    564.    409.    233.    132.
286     UI     84.     39.     24.     24.     24.      0.      0.      0.      0.      0.
287     UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
        * ***********************************************************************************

288     KK     B1
289     KM    COMBINE Q FROM BASINS  6.13 AND ROUTED FLOW FROM CP6.4
290     KO       1       2
291     HC       2
        * ***********************************************************************************

292     KK    RES1
293     KO       1       2
294     KM   ROUTE FLOW TO OUTLET OF DETENSION BASIN
295     RS       1    ELEV     789
296     SV       0    52.2   105.7   160.5   216.6     274   332.7   392.7   454.0
297     SE     786     788     790     792     794     796     798     800     802
298     SQ     0.0    55.0   162.0   311.0   499.0   727.0   994.0  1300.0  2036.0
299     SQ  2467.0  2941.0  3459.0
300     SE   790.0   791.0   792.0   793.0   794.0   795.0   796.0   797.0   798.0   799.0
301     SE   800.0   801.0   802.0
        * ***********************************************************************************
        *  KK    V1
        *  KM  THIS CARD IS USED TO ESTIMATE STORAGE
        *  RS      1    STOR       0
        *  SV      0       0    52.2   105.7   160.5   216.6     274   332.7   392.7
        *  SE      0     786     788     790     792     794     796     798     800
        *  SQ      0     5.5     5.5     5.5     5.5     5.5     5.5     5.5     5.5
        * ***********************************************************************************
```

1

HEC-1 INPUT

PAGE 8

```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

302     KK     RB1
303     KM    ROUTE FLOW TO CP6.5
304     RS       2    FLOW      -1
305     RL                      10     790
306     RC    .030    .030    .030    1622   .0020     765
307     RX       0     100     200   216.5   316.5     333     433     533
308     RY     765     765     765     760     760     765     765     765
        * ***********************************************************************************

309     KK   CP6.5
310     KM    COMBINE Q FROM BASIN 6.5, ROUTED FLOW FROM BASIN 5.3,
311     KM    AND ROUTED FLOW FROM SOUTH DETENTION BASIN
312     HC       3
        * ***********************************************************************************

313     KK     6R5
314     KM    ROUTE FLOW TO CP6
315     RS       2    FLOW      -1
316     RL                      10     757
317     RC    .030    .030    .030    2505   .0020     765
318     RX       0     100     200   216.5   316.5     333     433     533
319     RY     765     765     765     760     760     765     765     765
        * ***********************************************************************************

320     KK     6.9
321     KM   BASIN 6.9
322     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
323     KM    L=       .75  Lca=       .18   S=   61.0  Kn= .050  LAG=  15.4
324     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
325     BA     .60
326     PB    4.09
327     KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
328     PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
329     PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
```

```
330          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
331          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
332          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
333          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
334          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
335          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
336          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
337          PC    .984    .987    .990    .993    .996    .999   1.000
338          IN      15
339          LG     .44     .35    4.30     .62     .00
340          UI    168.    607.    921.   1533.   1260.    842.    479.    225.    121.     42.
341          UI     42.      0.      0.      0.      0.      0.      0.      0.      0.      0.
342          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * ***********************************************************************************
1                                                HEC-1 INPUT                                                    PAGE  9

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


343          KK     6.6
344          KM   BASIN 6.6
345          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
346          KM    L=       2.1  Lca=       .94   S=  257.0  Kn= .060  LAG=  39.0
347          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
348          BA    1.05
349          LG     .29     .26    7.30     .15    9.00
350          UI    112.    402.    609.   1015.    809.    538.    293.    142.     73.     28.
351          UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
352          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * ***********************************************************************************

353          KK     6R6
354          KM    ROUTE FLOW TO CP6
355          RS       3    FLOW      -1
356          RL                      10     784
357          RC     .05    .050     .05    9466   .0020   787.8
358          RX       0      76      97     120     181     196     224     633
359          RY   787.8   784.9     789     784     784   787.6     785     786
             * ***********************************************************************************

360          KK     6.7
361          KM   BASIN 6.7
362          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
363          KM    L=       1.8  Lca=       1.0   S=   60.0  Kn= .060  LAG=  50.3
364          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
365          BA    0.45
366          LG     .46     .34    4.20     .58     .00
367          UI     78.    260.    423.    568.    895.    771.    564.    409.    233.    132.
368          UI     84.     39.     24.     24.     24.      0.      0.      0.      0.      0.
369          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * ***********************************************************************************

370          KK     6.8
371          KM   BASIN 6.8
372          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
373          KM    L=       1.92  Lca=       .95   S=   58.0  Kn= .060  LAG=  50.2
374          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
375          BA     .29
376          LG     .35     .31    3.90     .32     .00
377          UI     19.     65.    106.    142.    224.    190.    139.    101.     56.     33.
378          UI     20.      9.      6.      6.      0.      0.      0.      0.      0.      0.
379          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * ***********************************************************************************

380          KK    CP6
381          KM    At SPILLWAY 4, COMBINE FLOWS FROM ROUTED 6.5, BASIN 6.9, BASIN 6.8, BASIN 6.
382          HC       5
1                                                HEC-1 INPUT                                                    PAGE 10

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


383          KK     7.1
384          KM   BASIN 7.1
385          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
386          KM    L=       4.9  Lca=       1.7   S=  295.0  Kn= .060  LAG=  65.6
387          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
388          BA    6.36
389          IN      15
390          KM   RAINFALL DEPTH OF 4.13 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
391          KM   AN AREAL REDUCTION COEFFICIENT OF  .9074 WAS USED
392          PB    3.75
393          KM   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
394          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
395          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
396          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
397          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
398          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
399          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
400          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
401          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
402          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
403          PC    .984    .987    .990    .993    .996    .999   1.000
404          LG     .31     .28    6.40     .21    7.00
405          UI    331.    331.    353.   1112.   1359.   1608.   1821.   2012.   2277.   2553.
```

```
406        UI   3052.   3866.   4256.   3532.   3058.   2731.   2449.   2135.   1899.   1660.
407        UI   1428.   1079.    744.    586.    549.    527.    331.    331.    306.    102.
408        UI    102.    102.    102.    102.    102.    102.    102.    102.     0.      0.
409        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

410        KK     7R1
411        KM    ROUTE FLOW TO CP7.2
412        RS       2    FLOW      -1
413        RL                      1     100
414        RC    .050    .050    .050    5531    .108     105
415        RX       0     100    1259    1426    1592    1759    2917    3017
416        RY     106     104     102   100.1     100     102     104     106

417        KK     7.2
418        KM    BASIN 7.2
419        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
420        KM    L=      3.1  Lca=      1.3   S=  354.0  Kn= .060  LAG=  48.1
421        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
422        BA    4.32
423        LG     .33     .27    6.70     .21    9.00
424        UI    302.    302.    865.   1288.   1577.   1812.   2138.   2549.   3467.   3710.
425        UI   2942.   2513.   2147.   1820.   1511.   1223.    770.    533.    497.    361.
426        UI    302.    201.     93.     93.     93.     93.     93.     93.      0.      0.
427        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

428        KK   CP7.2
429        KM    COMBINE BASINS 7.1 AND 7.2
430        HC       2
```

1

HEC-1 INPUT

PAGE 11

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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

431        KK     7R2
432        KM    ROUTE FLOW TO CP7.3
433        RS       2    FLOW      -1
434        RL                      1     100
435        RC    .050    .050    .050    6034   .0066     105
436        RX       0     100     931    1064    1198    1331    2162    2262
437        RY     106     104     102   100.1     100     102     104     106

438        KK     7.3
439        KM    BASIN 7.3
440        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
441        KM    L=      4.2  Lca=      2.8   S=  227.0  Kn= .060  LAG=  78.6
442        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
443        BA    2.84
444        LG     .30     .26    7.40     .18   10.00
445        UI    122.    122.    122.    228.    418.    498.    579.    644.    699.    764.
446        UI    848.    933.   1054.   1330.   1516.   1500.   1281.   1138.   1035.    955.
447        UI    854.    767.    701.    618.    571.    476.    355.    256.    215.    205.
448        UI    200.    165.    122.    122.    122.     51.     37.     37.     37.     37.
449        UI     37.     37.     37.     37.     37.     37.      0.      0.      0.      0.
450        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

451        KK   CP7.3
452        KM    COMBINE ROUTED 7.2 AND BASIN 7.3
453        HC       2

454        KK      D1
455        KM    DIVERT FLOW FROM BASIN 7 TO BASIN 8
456        DT    DIV1
457        DI       0      36      66     200    1600    2400    5000    8900
458        DQ       0       0       0      40     240     460    1000    1800

459        KK     7R3
460        KM    ROUTE THE REMAINING FLOW TO CP7.4
461        RS       2    FLOW      -1
462        RL                      1     100
463        RC    .050    .050    .050    6537   .0153     105
464        RX       0     100    1308    1441    1575    1708    2917    3017
465        RY     106     104     102   100.1     100     102     104     106

466        KK     7.4
467        KM    BASIN 7.4
468        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
469        KM    L=      2.7  Lca=      1.3   S=  395.0  Kn= .060  LAG=  44.7
470        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
471        BA    3.25
472        LG     .28     .27    7.20     .20   12.00
473        UI    245.    245.    815.   1109.   1345.   1565.   1870.   2483.   3072.   2521.
474        UI   2092.   1782.   1481.   1219.    944.    575.    423.    392.    245.    244.
475        UI     75.     75.     75.     75.     75.     75.      0.      0.      0.      0.
476        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

1

HEC-1 INPUT

PAGE 12

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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

477        KK   CP7.4
478        KM    COMBINE ROUTED 7.3 AND BASIN 7.4
479        HC       2

480        KK     7R4
481        KM    ROUTE THE  FLOW TO CP7.5
```

```
482          RS      6   FLOW      -1
483          RL                     1     100
484          RC   .050    .050    .050   17600   .0153     105
485          RX      0     100    1973    2501    3029    3557    5431    5531
486          RY    106     104     102   100.1     100     102     104     106

487          KK    7.5
488          KM   BASIN 7.5
489          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
490          KM    L=      3.4  Lca=      1.5   S=   80.0  Kn= .060  LAG=  69.8
491          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
492          BA    3.89
493          LG     .34     .30    4.50     .29    2.00
494          UI    188.    188.    188.    526.    700.    875.    972.   1077.   1187.   1338.
495          UI   1488.   1782.   2228.   2417.   2022.   1764.   1586.   1439.   1269.   1136.
496          UI   1006.    895.    759.    560.    380.    332.    309.    308.    188.    188.
497          UI    188.     85.     58.     58.     58.     58.     58.     58.     58.     58.
498          UI     58.      0.      0.      0.      0.      0.      0.      0.      0.      0.
499          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

500          KK   CP7.5
501          KM    COMBINE ROUTED 7.4 AND BASIN 7.5
502          HC      2

503          KK     D5
504          KM    DIVERTION @ sr85, 7.5 TO 7.6  7.7
505          DT    DIV5
506          DI      0     100     200     500    1000    2500    5000
507          DQ      0      27      55     135     270     680    1360

508          KK    7R5
509          KM    ROUTE THE  FLOW TO CP7.6
510          RS      2    FLOW      -1
511          RL                     1     100
512          RC   .050    .050    .050    5280   .0133     105
513          RX      0     100    3350    4050    4750    5450    8700    8800
514          RY    106     104     102   100.1     100     102     104     106

515          KK    7.6
516          KM   BASIN 7.6
517          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
518          KM    L=      1.3  Lca=       .6   S=   90.0  Kn= .060  LAG=  33.4
519          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
520          BA    1.92
521          LG     .35     .31    3.80     .33     .00
522          UI    193.    397.    843.   1091.   1358.   1869.   2354.   1795.   1439.   1125.
523          UI    862.    486.    329.    245.    187.     59.     59.     59.     59.      0.
524          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

525          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

526          KK   CP7.6
527          KM    COMBINE FLOW FROM BASINS 7.5 AND 7.6
528          HC      2

529          KK   CP6&7
530          KM    COMBINE FLOW FROM BASINS 6 AND 7 NORTH OF SKI LAKE
531          KO      1       2
532          HC      2

533          KK  RES6&7
534          KO      1       2
535          KM     ROUTE COMBINED HYDROGRAPHS FROM BASINS 6 & 7 NORTH OF SKI LAKE
536          KM     COMBINED OUTFLOW FROM SPILLWAY #4, BERM OVERTOPPING, AND SPILL-TO'S
537          RS      1    ELEV   744.3
538          SV      0    35.1     136
539          SE    748     750     752
540          SQ      0      80     278     560    1003    1521    1901    2638    9142   15793
541          SE  744.3   745.1   746.1   747.1   748.3   749.4   750.1   751.1   752.1   752.6
542          ZZ
```

1

```
        SCHEMATIC DIAGRAM OF STREAM NETWORK

 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   10       CP4.1
                V
                V
   32       4R1
                .
                .
   39           .        4.2
                .          .
                .          .
   49       CP4.2............
                .
                .
   52           .        5.4
                .          .
                .          .
```

```
62        5.1
           V
86         V
          5R1
93                5.3
103     CP5.3............
           V
106        V
          5R3
113               6.5
136                       6.1
                           V
159                        V
                          6R1
166                                 6.2
175                     CP6.2............
                           V
178                        V
                          6R2
185                                 6.10
194                     CP6.10...........
                           V
197                        V
                         6R10
204                                 6.3
                                     V
214                                  V
                                    6R3
221                                            6.12
231                     CP6.12......................
                           V
234                        V
                         6R12
241                                 6.11
                                     V
251                                  V
                                   6R11
258                                            6.4
268                     CP6.4.......................
                           V
271                        V
                          6R4
278                                 6.13
288                       B1............
                           V
292                        V
                        RES1
                           V
302                        V
                         RB1
309     CP6.5........................
           V
313        V
          6R5
320               6.9
343                       6.6
                           V
```

```
                                                  V
353                                              6R6
                                                   .
                                                   .
360                                                .        6.7
                                                   .          .
                                                   .          .
370                                                .          .        6.8
                                                   .          .          .
                                                   .          .          .
380                        CP6 ...................................................
                                                   .
                                                   .
383                                        7.1
                                             V
                                             V
410                                        7R1
                                                   .
                                                   .
417                                                .        7.2
                                                   .          .
                                                   .          .
428                                      CP7.2............
                                             V
                                             V
431                                        7R2
                                                   .
                                                   .
438                                                .        7.3
                                                   .          .
                                                   .          .
451                                      CP7.3............
                                                   .
                                                   .
456                                                .-------->    DIV1
454                                          D1
                                             V
                                             V
459                                        7R3
                                                   .
                                                   .
466                                                .        7.4
                                                   .          .
                                                   .          .
477                                      CP7.4............
                                             V
                                             V
480                                        7R4
                                                   .
                                                   .
487                                                .        7.5
                                                   .          .
                                                   .          .
500                                      CP7.5............
                                                   .
                                                   .
505                                                .-------->    DIV5
503                                          D5
                                             V
                                             V
508                                        7R5
                                                   .
                                                   .
515                                                .        7.6
                                                   .          .
                                                   .          .
526                                      CP7.6............
                                                   .
                                                   .
529                          CP6&7............
                                 V
                                 V
533                          RES6&7
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*************************************
 *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *             JUN   1998            *
 *           VERSION 4.1             *
 *                                   *
 *  RUN DATE   23FEB09  TIME  16:01:46  *
 *                                   *
 *************************************
```

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

PHOENIX LANDFILL CLOMR
CITY OF PHOENIX
URS 1/8/08
proposed_24HR.DAT
2-YEAR, 5-YEAR, 10-YEAR, AND 100-YEAR STORM (PROPOSED CONDITION WITH

```
7 IO          OUTPUT CONTROL VARIABLES
                    IPRNT           3  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         300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     2    0  ENDING DATE
                    NDTIME       0055  ENDING TIME
                    ICENT          19  CENTURY MARK

               COMPUTATION INTERVAL     .08 HOURS
                    TOTAL TIME BASE   24.92 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 PRECIPITATION
                 .34      .50      .61      1.00

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 10 KK        *   CP4.1    *
              *            *
              **************

                      BASIN 4.1
                       THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                       L=      1.25  Lca=      .56   S=    66.0  Kn= .060  LAG=   34.0
                       PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                      THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL

  9 IN          TIME DATA FOR INPUT TIME SERIES
                    JXMIN          15  TIME INTERVAL IN MINUTES
                    JXDATE     1    0  STARTING DATE
                    JXTIME          0  STARTING TIME

              SUBBASIN RUNOFF DATA

 15 BA          SUBBASIN CHARACTERISTICS
                    TAREA         .66  SUBBASIN AREA

                PRECIPITATION DATA

 17 PB              STORM        4.08  BASIN TOTAL PRECIPITATION

 17 PI            INCREMENTAL PRECIPITATION PATTERN
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .01     .01     .01     .01
                  .01     .01     .01     .01     .01     .02     .02     .02     .05     .05
                  .05     .07     .07     .07     .01     .01     .01     .01     .01     .01
                  .01     .01     .01     .01     .01     .01     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00

 28 LG          GREEN AND AMPT LOSS RATE
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                    STRTL        .32  STARTING LOSS
                      DTH        .33  MOISTURE DEFICIT
                     PSIF       4.20  WETTING FRONT SUCTION
                    XKSAT        .38  HYDRAULIC CONDUCTIVITY
                    RTIMP        .00  PERCENT IMPERVIOUS AREA

  28 UI        INPUT UNITGRAPH,  10 ORDINATES,  VOLUME =  .50
                 98.0     322.0     527.0     716.0     449.0     250.0     103.0      48.0      20.0      20.0

                                                                  ***

    TOTAL RAINFALL =    4.08, TOTAL LOSS =    3.02, TOTAL EXCESS =    1.06

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    439.     12.08                   37.         9.          9.          9.
                         (INCHES)    .527        .527        .527        .527
                          (AC-FT)     19.         19.         19.         19.

                         CUMULATIVE AREA =     .66 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION    CP4.1
                          FOR PLAN 1, RATIO =  .34

    TOTAL RAINFALL =    1.39, TOTAL LOSS =    1.39, TOTAL EXCESS =     .00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      0.        .00                    0.          0.          0.          0.
                         (INCHES)    .000        .000        .000        .000
                          (AC-FT)      0.          0.          0.          0.

                         CUMULATIVE AREA =     .66 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION    CP4.1
                          FOR PLAN 1, RATIO =  .50

    TOTAL RAINFALL =    2.04, TOTAL LOSS =    1.89, TOTAL EXCESS =     .15

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     82.     12.17                    5.          1.          1.          1.
                         (INCHES)    .074        .074        .074        .074
                          (AC-FT)      3.          3.          3.          3.

                         CUMULATIVE AREA =     .66 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION    CP4.1
                          FOR PLAN 1, RATIO =  .61

    TOTAL RAINFALL =    2.49, TOTAL LOSS =    2.14, TOTAL EXCESS =     .35

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    160.     12.08                   12.         3.          3.          3.
                         (INCHES)    .173        .173        .173        .173
                          (AC-FT)      6.          6.          6.          6.

                         CUMULATIVE AREA =     .66 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION    CP4.1
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.08, TOTAL LOSS =    3.02, TOTAL EXCESS =    1.06

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    439.     12.08                   37.         9.          9.          9.
                         (INCHES)    .527        .527        .527        .527
                          (AC-FT)     19.         19.         19.         19.

                         CUMULATIVE AREA =     .66 SQ MI
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*** ***

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              **************
              *            *
32 KK         *    4R1     *
              *            *
              **************
                                    /
                        ROUTE FROW TO CP4.2

          HYDROGRAPH ROUTING DATA

35 RL        ROUTING LOSSES
                  QLOSS        .00  INITIAL LOSS
                  CLOSS        .00  ADDITIONAL FRACTION LOST
                 PERCRT      10.00  CHANNEL PERCOLATION RATE
                 ELVINV     792.00  INVERT ELEVATION

34 RS        STORAGE ROUTING
                  NSTPS          3  NUMBER OF SUBREACHES
                   ITYP       FLOW  TYPE OF INITIAL CONDITION
                 RSVRIC      -1.00  INITIAL CONDITION
                      X        .00 WORKING R AND D COEFFICIENT

36 RC        NORMAL DEPTH CHANNEL
                    ANL       .050  LEFT OVERBANK N-VALUE
                   ANCH       .050  MAIN CHANNEL N-VALUE
                    ANR       .050  RIGHT OVERBANK N-VALUE
                  RLNTH      8806.  REACH LENGTH
                    SEL      .0098  ENERGY SLOPE
                  ELMAX      794.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
38 RY        ELEVATION  794.00   792.40   794.00   792.00   792.00   794.60   793.00   794.00
37 RX        DISTANCE      .00   924.00   932.00   940.00   944.00   950.00   956.00  1730.00
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***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.09	.20	.32	.48	1.54	3.93	7.63	12.65	18.99
OUTFLOW	.00	.28	.93	1.89	3.18	6.93	17.63	38.70	73.01	123.16
ELEVATION	792.00	792.11	792.21	792.32	792.42	792.53	792.63	792.74	792.84	792.95
STORAGE	26.87	37.60	51.39	68.24	88.15	111.13	137.17	166.27	198.43	233.66
OUTFLOW	191.81	285.65	412.38	578.31	789.06	1049.86	1365.61	1741.01	2180.53	2689.04
ELEVATION	793.05	793.16	793.26	793.37	793.47	793.58	793.68	793.79	793.90	794.00

*** *** *** *** ***

HYDROGRAPH AT STATION 4R1
FOR PLAN 1, RATIO = .34

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ 792.00	.00	792.00	792.00	792.00	792.00

CUMULATIVE AREA = .66 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 4R1
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+					

```
      0.        .00                    0.          0.          0.          0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                        6-HR        24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   792.00        .00                  792.00      792.00      792.00      792.00

                          CUMULATIVE AREA =      .66 SQ MI

     ***              ***              ***              ***              ***

                          HYDROGRAPH AT STATION     4R1
                            FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                 (CFS)
+      0.         .00                    0.          0.          0.          0.
                          (INCHES)     .000        .000        .000        .000
                           (AC-FT)       0.          0.          0.          0.

 PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                        6-HR        24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      0.         .00                    0.          0.          0.          0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                        6-HR        24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   792.00        .00                  792.00      792.00      792.00      792.00

                          CUMULATIVE AREA =      .66 SQ MI

     ***              ***              ***              ***              ***

                          HYDROGRAPH AT STATION     4R1
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                                 (CFS)
+      0.         .00                    0.          0.          0.          0.
                          (INCHES)     .000        .000        .000        .000
                           (AC-FT)       0.          0.          0.          0.

 PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                        6-HR        24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      1.       13.17                    0.          0.          0.          0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                        6-HR        24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   792.54      13.17                  792.23      792.06      792.06      792.06

                          CUMULATIVE AREA =      .66 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  39 KK     *     4.2    *
            *            *
            **************
                          BASIN 4.2
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=      2.2  Lca=     1.07   S=   42.0  Kn= .060  LAG=  59
                           PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

  44 BA         SUBBASIN CHARACTERISTICS
                     TAREA        1.35  SUBBASIN AREA

                PRECIPITATION DATA

  17 PB              STORM        4.08  BASIN TOTAL PRECIPITATION

  17 PI           INCREMENTAL PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

45 LG GREEN AND AMPT LOSS RATE

STRTL	.38	STARTING LOSS
DTH	.35	MOISTURE DEFICIT
PSIF	4.30	WETTING FRONT SUCTION
XKSAT	.43	HYDRAULIC CONDUCTIVITY
RTIMP	.00	PERCENT IMPERVIOUS AREA

40 UI INPUT UNITGRAPH, 17 ORDINATES, VOLUME = .52

81.0	212.0	394.0	507.0	677.0	990.0	777.0	600.0	454.0	317.0
162.0	123.0	81.0	33.0	25.0	25.0	25.0			

***

TOTAL RAINFALL = 4.08, TOTAL LOSS = 3.11, TOTAL EXCESS = .97

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 661.	12.25	(CFS)	74.	19.	18.	18.
		(INCHES)	.511	.511	.511	.511
		(AC-FT)	37.	37.	37.	37.

CUMULATIVE AREA = 1.35 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 4.2
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.39, TOTAL LOSS = 1.39, TOTAL EXCESS = .00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 1.35 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 4.2
FOR PLAN 1, RATIO = .50

TOTAL RAINFALL = 2.04, TOTAL LOSS = 1.96, TOTAL EXCESS = .08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 70.	12.42	(CFS)	6.	2.	2.	2.
		(INCHES)	.044	.044	.044	.044
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = 1.35 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 4.2
FOR PLAN 1, RATIO = .61

TOTAL RAINFALL = 2.49, TOTAL LOSS = 2.24, TOTAL EXCESS = .24

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				

```
+     190.     12.33                    19.          5.          4.          4.
                          (INCHES)     .128        .128        .128        .128
                           (AC-FT)      9.          9.          9.          9.

                         CUMULATIVE AREA =    1.35 SQ MI

      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    4.2
                           FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.08, TOTAL LOSS =    3.11, TOTAL EXCESS =     .97

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     661.     12.25                    74.         19.         18.         18.
                          (INCHES)     .511        .511        .511        .511
                           (AC-FT)     37.         37.         37.         37.

                         CUMULATIVE AREA =    1.35 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  49 KK     *    CP4.2   *
            *            *
            **************
                         COMBINE Q FROM BASINS 4.2 AND ROUTED FLOW FROM BASIN 4.1

  51 HC          HYDROGRAPH COMBINATION
                       ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    CP4.2
                           FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+       0.        .00                     0.          0.          0.          0.
                          (INCHES)     .000        .000        .000        .000
                           (AC-FT)      0.          0.          0.          0.

                         CUMULATIVE AREA =    2.01 SQ MI

      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    CP4.2
                           FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      70.     12.42                     6.          2.          2.          2.
                          (INCHES)     .030        .030        .030        .030
                           (AC-FT)      3.          3.          3.          3.

                         CUMULATIVE AREA =    2.01 SQ MI

      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    CP4.2
                           FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     190.     12.33                    19.          5.          4.          4.
                          (INCHES)     .086        .086        .086        .086
                           (AC-FT)      9.          9.          9.          9.

                         CUMULATIVE AREA =    2.01 SQ MI

      ***             ***             ***             ***             ***

                         HYDROGRAPH AT STATION    CP4.2
                           FOR PLAN 1, RATIO = 1.00
```

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 661.	12.25		74.	19.	18.	18.
		(INCHES)	.343	.343	.343	.343
		(AC-FT)	37.	37.	37.	37.

CUMULATIVE AREA = 2.01 SQ MI

*** ***

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              **************
              *            *
52 KK         *    5.4     *
              *            *
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BASIN 5.4
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.36 Lca= .64 S= 50.0 Kn= .050 LAG= 32.5
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

57 BA SUBBASIN CHARACTERISTICS
TAREA 1.28 SUBBASIN AREA

PRECIPITATION DATA

17 PB STORM 4.08 BASIN TOTAL PRECIPITATION

17 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.01	.01	.01	.01
.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

58 LG GREEN AND AMPT LOSS RATE

STRTL	.44	STARTING LOSS
DTH	.35	MOISTURE DEFICIT
PSIF	4.30	WETTING FRONT SUCTION
XKSAT	.62	HYDRAULIC CONDUCTIVITY
RTIMP	.00	PERCENT IMPERVIOUS AREA

53 UI INPUT UNITGRAPH, 9 ORDINATES, VOLUME = .63

250.0	819.0	1366.0	1761.0	1090.0	575.0	245.0	106.0	50.0

***

TOTAL RAINFALL = 4.08, TOTAL LOSS = 3.31, TOTAL EXCESS = .77

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 825.	12.08		67.	17.	16.	16.
		(INCHES)	.485	.485	.485	.485
		(AC-FT)	33.	33.	33.	33.

CUMULATIVE AREA = 1.28 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5.4
FOR PLAN 1, RATIO = .34

```
    TOTAL RAINFALL =    1.39, TOTAL LOSS =    1.39, TOTAL EXCESS =     .00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)        (HR)
                                  (CFS)
+      0.         .00                 0.           0.           0.           0.
                                (INCHES)        .000         .000         .000         .000
                                 (AC-FT)           0.           0.           0.           0.

                                CUMULATIVE AREA =    1.28 SQ MI

      ***             ***             ***             ***             ***

                              HYDROGRAPH AT STATION     5.4
                                FOR PLAN 1, RATIO =  .50

    TOTAL RAINFALL =    2.04, TOTAL LOSS =    2.04, TOTAL EXCESS =     .00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)        (HR)
                                  (CFS)
+      0.       12.25                 0.           0.           0.           0.
                                (INCHES)        .000         .000         .000         .000
                                 (AC-FT)           0.           0.           0.           0.

                                CUMULATIVE AREA =    1.28 SQ MI

      ***             ***             ***             ***             ***

                              HYDROGRAPH AT STATION     5.4
                                FOR PLAN 1, RATIO =  .61

    TOTAL RAINFALL =    2.49, TOTAL LOSS =    2.39, TOTAL EXCESS =     .09

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)        (HR)
                                  (CFS)
+    136.       12.17                 8.           2.           2.           2.
                                (INCHES)        .059         .059         .059         .059
                                 (AC-FT)           4.           4.           4.           4.

                                CUMULATIVE AREA =    1.28 SQ MI

      ***             ***             ***             ***             ***

                              HYDROGRAPH AT STATION     5.4
                                FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.08, TOTAL LOSS =    3.31, TOTAL EXCESS =     .77

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)        (HR)
                                  (CFS)
+    825.       12.08                67.          17.          16.          16.
                                (INCHES)        .485         .485         .485         .485
                                 (AC-FT)          33.          33.          33.          33.

                                CUMULATIVE AREA =    1.28 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  62 KK     *      5.1   *
            *            *
            **************
                              BASIN 5.1
                               THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                               L=     2.05  Lca=     1.24   S=     170  Kn= .060  LAG=  46.4
                               PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                              RAINFALL DEPTH OF 4.13 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
                              AN AREAL REDUCTION COEFFICIENT OF  .9181 WAS USED
                              THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL

   9 IN          TIME DATA FOR INPUT TIME SERIES
                       JXMIN          15  TIME INTERVAL IN MINUTES
                      JXDATE      1    0  STARTING DATE
                      JXTIME           0  STARTING TIME

                SUBBASIN RUNOFF DATA

  67 BA           SUBBASIN CHARACTERISTICS
                       TAREA         .91  SUBBASIN AREA
```

PRECIPITATION DATA

71 PB STORM 4.06 BASIN TOTAL PRECIPITATION

71 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

82 LG GREEN AND AMPT LOSS RATE

STRTL	.44	STARTING LOSS
DTH	.34	MOISTURE DEFICIT
PSIF	4.00	WETTING FRONT SUCTION
XKSAT	.38	HYDRAULIC CONDUCTIVITY
RTIMP	.00	PERCENT IMPERVIOUS AREA

82 UI INPUT UNITGRAPH, 11 ORDINATES, VOLUME = .58

124.0	433.0	663.0	1083.0	791.0	519.0	243.0	128.0	56.0	29.0
29.0									

***

TOTAL RAINFALL = 4.06, TOTAL LOSS = 3.03, TOTAL EXCESS = 1.03

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 659.	12.08	(CFS)	59.	15.	14.	14.
		(INCHES)	.598	.598	.598	.598
		(AC-FT)	29.	29.	29.	29.

CUMULATIVE AREA = .91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5.1
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.38, TOTAL LOSS = 1.38, TOTAL EXCESS = .00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5.1
FOR PLAN 1, RATIO = .50

TOTAL RAINFALL = 2.03, TOTAL LOSS = 1.91, TOTAL EXCESS = .12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 98.	12.25	(CFS)	7.	2.	2.	2.
		(INCHES)	.068	.068	.068	.068
		(AC-FT)	3.	3.	3.	3.

```
                    CUMULATIVE AREA =     .91 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      5.1
                      FOR PLAN 1, RATIO =  .61

    TOTAL RAINFALL =    2.48, TOTAL LOSS =    2.18, TOTAL EXCESS =     .30

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     225.      12.17                17.          4.          4.          4.
                        (INCHES)    .172        .172        .172        .172
                        (AC-FT)       8.          8.          8.          8.

                    CUMULATIVE AREA =     .91 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      5.1
                      FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.06, TOTAL LOSS =    3.03, TOTAL EXCESS =    1.03

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     659.      12.08                59.         15.         14.         14.
                        (INCHES)    .598        .598        .598        .598
                        (AC-FT)      29.         29.         29.         29.

                    CUMULATIVE AREA =     .91 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  86 KK     *     5R1    *
            *            *
            **************
                        ROUTE FLOW TO CP5.3

              HYDROGRAPH ROUTING DATA

  89 RL          ROUTING LOSSES
                      QLOSS        .00  INITIAL LOSS
                      CLOSS        .00  ADDITIONAL FRACTION LOST
                     PERCRT      10.00  CHANNEL PERCOLATION RATE
                     ELVINV     810.00  INVERT ELEVATION

  88 RS          STORAGE ROUTING
                      NSTPS          5  NUMBER OF SUBREACHES
                       ITYP       FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC      -1.00  INITIAL CONDITION
                          X        .00 WORKING R AND D COEFFICIENT

  90 RC          NORMAL DEPTH CHANNEL
                        ANL       .030  LEFT OVERBANK N-VALUE
                       ANCH       .030  MAIN CHANNEL N-VALUE
                        ANR       .030  RIGHT OVERBANK N-VALUE
                      RLNTH      8305.  REACH LENGTH
                        SEL      .0032  ENERGY SLOPE
                      ELMAX      817.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
  92 RY       ELEVATION   817.00    817.00    817.00    811.50    811.50    817.00    817.00    817.00
  91 RX       DISTANCE       .00    100.00    200.00    216.50    246.50    263.00    363.00    463.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00      1.70      3.50      5.40      7.39      9.48     11.66     13.94     16.31     18.78
          OUTFLOW        .00     10.76     34.48     68.44    111.68    163.75    224.38    293.46    370.93    456.81
        ELEVATION     811.50    811.79    812.08    812.37    812.66    812.95    813.24    813.53    813.82    814.11

          STORAGE      21.35     24.01     26.77     29.63     32.58     35.62     38.76     42.00     45.33     48.79
          OUTFLOW     551.12    653.93    765.33    885.42   1014.30   1152.10   1298.93   1454.94   1620.24   1795.03
        ELEVATION     814.39    814.68    814.97    815.26    815.55    815.84    816.13    816.42    816.71    817.00

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      5R1
                      FOR PLAN 1, RATIO =  .34
```

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 0.	.00

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	0.	0.	0.	0.
(INCHES)	.000	.000	.000	.000
(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
0.	.00

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)
811.50	.00

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
811.50	811.50	811.50	811.50

CUMULATIVE AREA = .91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5R1
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 17.	13.08

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	3.	1.	1.	1.
(INCHES)	.034	.034	.034	.034
(AC-FT)	2.	2.	2.	2.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
0.	13.08

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)
811.89	13.08

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
811.60	811.52	811.52	811.52

CUMULATIVE AREA = .91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5R1
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 88.	12.75

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	11.	3.	3.	3.
(INCHES)	.116	.116	.116	.116
(AC-FT)	6.	6.	6.	6.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
1.	12.75

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)
812.54	12.75

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
811.70	811.55	811.55	811.55

CUMULATIVE AREA = .91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5R1
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 474.	12.42

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	49.	12.	12.	12.
(INCHES)	.506	.506	.506	.506
(AC-FT)	25.	25.	25.	25.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
4.	12.42

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
1.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR

```
 814.19     12.42                 811.93      811.61      811.60      811.60

                    CUMULATIVE AREA =     .91 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 93 KK    *      5.3   *
          *            *
          **************
                    BASIN 5.3
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=     1.62  Lca=      .64   S=   27.0  Kn= .060  LAG=  46.8
                     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

 98 BA        SUBBASIN CHARACTERISTICS
                  TAREA          .54  SUBBASIN AREA

              PRECIPITATION DATA

 71 PB            STORM        4.06  BASIN TOTAL PRECIPITATION

 71 PI          INCREMENTAL PRECIPITATION PATTERN
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                   .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                   .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                   .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                   .00       .00       .00       .00       .00       .00       .00       .00

 99 LG        GREEN AND AMPT LOSS RATE
                  STRTL          .44  STARTING LOSS
                    DTH          .34  MOISTURE DEFICIT
                   PSIF         4.00  WETTING FRONT SUCTION
                  XKSAT          .38  HYDRAULIC CONDUCTIVITY
                  RTIMP          .00  PERCENT IMPERVIOUS AREA

 94 UI        INPUT UNITGRAPH,  11 ORDINATES,  VOLUME =  .98
                 124.0     433.0     663.0    1083.0     791.0     519.0     243.0     128.0      56.0      29.0
                  29.0
                                                                   ***

   TOTAL RAINFALL =    4.06, TOTAL LOSS =    3.03, TOTAL EXCESS =    1.03

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+    659.      12.08                 59.         15.         14.         14.
                       (INCHES)    1.008       1.008       1.008       1.008
                       (AC-FT)      29.         29.         29.         29.

                       CUMULATIVE AREA =     .54 SQ MI

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      5.3
                        FOR PLAN 1, RATIO =  .34

   TOTAL RAINFALL =    1.38, TOTAL LOSS =    1.38, TOTAL EXCESS =     .00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
```

```
+   (CFS)        (HR)
+      0.         .00
                          (CFS)
                                        0.          0.          0.          0.
                       (INCHES)       .000        .000        .000        .000
                       (AC-FT)          0.          0.          0.          0.

                       CUMULATIVE AREA =      .54 SQ MI

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      5.3
                         FOR PLAN 1, RATIO =  .50

     TOTAL RAINFALL =    2.03, TOTAL LOSS =    1.91, TOTAL EXCESS =     .12

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR     24.92-HR
+   (CFS)         (HR)
                          (CFS)
+      98.        12.25                     7.          2.          2.          2.
                       (INCHES)       .115        .115        .115        .115
                       (AC-FT)          3.          3.          3.          3.

                       CUMULATIVE AREA =      .54 SQ MI

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      5.3
                         FOR PLAN 1, RATIO =  .61

     TOTAL RAINFALL =    2.48, TOTAL LOSS =    2.18, TOTAL EXCESS =     .30

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR     24.92-HR
+   (CFS)         (HR)
                          (CFS)
+     225.        12.17                    17.          4.          4.          4.
                       (INCHES)       .290        .290        .290        .290
                       (AC-FT)          8.          8.          8.          8.

                       CUMULATIVE AREA =      .54 SQ MI

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      5.3
                         FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    4.06, TOTAL LOSS =    3.03, TOTAL EXCESS =    1.03

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR     24.92-HR
+   (CFS)         (HR)
                          (CFS)
+     659.        12.08                    59.         15.         14.         14.
                       (INCHES)      1.008       1.008       1.008       1.008
                       (AC-FT)         29.         29.         29.         29.

                       CUMULATIVE AREA =      .54 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                 **************
                 *            *
103 KK           *    CP5.3   *
                 *            *
                 **************
                       COMBINE Q FROM BASIN 5.3 AND ROUTED FLOW FROM BASIN 5.1

105 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***
     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION    CP5.3
                         FOR PLAN 1, RATIO =  .34

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR       72-HR     24.92-HR
+   (CFS)         (HR)
                          (CFS)
+      0.          .00                      0.          0.          0.          0.
                       (INCHES)       .000        .000        .000        .000
                       (AC-FT)          0.          0.          0.          0.

                       CUMULATIVE AREA =    1.45 SQ MI
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***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CP5.3
                 FOR PLAN 1, RATIO =  .50

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+     98.     12.25                 10.          2.          2.          2.
                        (INCHES)   .064        .064        .064        .064
                         (AC-FT)     5.          5.          5.          5.

                        CUMULATIVE AREA =    1.45 SQ MI


***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CP5.3
                 FOR PLAN 1, RATIO =  .61

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    225.     12.17                 28.          7.          7.          7.
                        (INCHES)   .181        .181        .181        .181
                         (AC-FT)    14.         14.         14.         14.

                        CUMULATIVE AREA =    1.45 SQ MI


***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CP5.3
                 FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+  (CFS)       (HR)
                          (CFS)
+    788.     12.25                108.         27.         26.         26.
                        (INCHES)   .693        .693        .693        .693
                         (AC-FT)    54.         54.         54.         54.

                        CUMULATIVE AREA =    1.45 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
106 KK    *     5R3    *
          *            *
          **************
                    ROUTE FLOW TO CP6.5

            HYDROGRAPH ROUTING DATA

109 RL        ROUTING LOSSES
                   QLOSS        .00  INITIAL LOSS
                   CLOSS        .00  ADDITIONAL FRACTION LOST
                  PERCRT      10.00  CHANNEL PERCOLATION RATE
                  ELVINV     800.00  INVERT ELEVATION

108 RS        STORAGE ROUTING
                   NSTPS          5  NUMBER OF SUBREACHES
                    ITYP       FLOW  TYPE OF INITIAL CONDITION
                  RSVRIC      -1.00  INITIAL CONDITION
                       X        .00 WORKING R AND D COEFFICIENT

110 RC        NORMAL DEPTH CHANNEL
                     ANL       .030  LEFT OVERBANK N-VALUE
                    ANCH       .030  MAIN CHANNEL N-VALUE
                     ANR       .030  RIGHT OVERBANK N-VALUE
                   RLNTH      7339.  REACH LENGTH
                     SEL      .0032  ENERGY SLOPE
                   ELMAX      803.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                CROSS-SECTION DATA
                      --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
112 RY     ELEVATION   803.00    803.00    803.00    797.50    797.50    803.00    803.00    803.00
111 RX     DISTANCE       .00    100.00    200.00    216.50    246.50    263.00    363.00    463.00

                                          ***

                          COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

      STORAGE        .00      1.51      3.10      4.77      6.53      8.37     10.30     12.32     14.42     16.60
      OUTFLOW        .00     10.76     34.48     68.44    111.68    163.75    224.38    293.46    370.93    456.81
    ELEVATION     797.50    797.79    798.08    798.37    798.66    798.95    799.24    799.53    799.82    800.11
```

STORAGE	18.87	21.22	23.66	26.18	28.79	31.48	34.25	37.12	40.06	43.11
OUTFLOW	551.12	653.93	765.33	885.42	1014.30	1152.10	1298.93	1454.94	1620.24	1795.03
ELEVATION	800.39	800.68	800.97	801.26	801.55	801.84	802.13	802.42	802.71	803.00

*** *** *** *** ***

HYDROGRAPH AT STATION 5R3
FOR PLAN 1, RATIO = .34

PEAK FLOW (CFS)	TIME (HR)
+ 0.	.00

	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	0.	0.	0.	0.
(INCHES)	.000	.000	.000	.000
(AC-FT)	0.	0.	0.	0.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 0.	.00

MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)
+ 797.50	.00

MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
797.50	797.50	797.50	797.50

CUMULATIVE AREA = 1.45 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5R3
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)
+ 38.	12.92

	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	10.	2.	2.	2.
(INCHES)	.063	.064	.064	.064
(AC-FT)	5.	5.	5.	5.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 1.	12.92

MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)
+ 798.11	12.92

MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
797.71	797.55	797.55	797.55

CUMULATIVE AREA = 1.45 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5R3
FOR PLAN 1, RATIO = .61

PEAK FLOW (CFS)	TIME (HR)
+ 140.	12.67

	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	28.	7.	7.	7.
(INCHES)	.181	.181	.181	.181
(AC-FT)	14.	14.	14.	14.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 2.	12.67

MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)
+ 798.82	12.67

MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
797.89	797.60	797.59	797.59

CUMULATIVE AREA = 1.45 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 5R3
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 369.	12.50

	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	64.	16.	15.	15.
(INCHES)	.410	.411	.411	.411

```
                         (AC-FT)       32.        32.        32.        32.

 PEAK STORAGE    TIME                          MAXIMUM AVERAGE STORAGE
                                       6-HR      24-HR      72-HR     24.92-HR
+  (AC-FT)       (HR)
       3.       12.50                   1.         0.         0.         0.

  PEAK STAGE     TIME                          MAXIMUM AVERAGE STAGE
                                       6-HR      24-HR      72-HR     24.92-HR
+   (FEET)       (HR)
    799.81      12.50                 798.11     797.65     797.65     797.65

                         CUMULATIVE AREA =     1.45 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


               **************
               *            *
  113 KK       *      6.5   *
               *            *
               **************
                          BASIN 6.5
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=      2.0  Lca=      .76    S=     31.0  Kn= .050  LAG=  43.7
                           PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                          THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL

    9 IN            TIME DATA FOR INPUT TIME SERIES
                        JXMIN          15  TIME INTERVAL IN MINUTES
                       JXDATE      1    0  STARTING DATE
                       JXTIME           0  STARTING TIME

                  SUBBASIN RUNOFF DATA

  118 BA            SUBBASIN CHARACTERISTICS
                        TAREA         .70  SUBBASIN AREA

                    PRECIPITATION DATA

  120 PB                STORM        4.09  BASIN TOTAL PRECIPITATION

  120 PI             INCREMENTAL PRECIPITATION PATTERN
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .01      .01      .01      .01
                     .01      .01      .01      .01      .01      .02      .02      .02      .05      .05
                     .05      .07      .07      .07      .01      .01      .01      .01      .01      .01
                     .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                     .00      .00      .00      .00      .00      .00      .00      .00

  132 LG            GREEN AND AMPT LOSS RATE
                        STRTL         .44  STARTING LOSS
                          DTH         .35  MOISTURE DEFICIT
                         PSIF        4.30  WETTING FRONT SUCTION
                        XKSAT         .62  HYDRAULIC CONDUCTIVITY
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

  132 UI            INPUT UNITGRAPH,  11 ORDINATES,  VOLUME = 1.15
                    168.0     607.0     921.0    1533.0    1260.0     842.0     479.0     225.0     121.0      42.0
                     42.0

                                                  ***

     TOTAL RAINFALL =     4.09, TOTAL LOSS =     3.32, TOTAL EXCESS =      .77

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR      24-HR      72-HR     24.92-HR
+    (CFS)       (HR)
                         (CFS)
```

```
+     758.     12.17
                                  67.        17.        16.        16.
                   (INCHES)      .889       .889       .889       .889
                   (AC-FT)        33.        33.        33.        33.

                   CUMULATIVE AREA =     .70 SQ MI

      ***        ***        ***        ***        ***

                   HYDROGRAPH AT STATION      6.5
                     FOR PLAN 1, RATIO =  .34

     TOTAL RAINFALL =    1.39, TOTAL LOSS =    1.39, TOTAL EXCESS =     .00

   PEAK FLOW     TIME
                                   MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                6-HR       24-HR      72-HR     24.92-HR
                                (CFS)
+      0.         .00                 0.         0.         0.         0.
                   (INCHES)       .000       .000       .000       .000
                   (AC-FT)          0.         0.         0.         0.

                   CUMULATIVE AREA =     .70 SQ MI

      ***        ***        ***        ***        ***

                   HYDROGRAPH AT STATION      6.5
                     FOR PLAN 1, RATIO =  .50

     TOTAL RAINFALL =    2.04, TOTAL LOSS =    2.04, TOTAL EXCESS =     .00

   PEAK FLOW     TIME
                                   MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                6-HR       24-HR      72-HR     24.92-HR
                                (CFS)
+      0.       12.25                 0.         0.         0.         0.
                   (INCHES)       .000       .000       .000       .000
                   (AC-FT)          0.         0.         0.         0.

                   CUMULATIVE AREA =     .70 SQ MI

      ***        ***        ***        ***        ***

                   HYDROGRAPH AT STATION      6.5
                     FOR PLAN 1, RATIO =  .61

     TOTAL RAINFALL =    2.49, TOTAL LOSS =    2.40, TOTAL EXCESS =     .10

   PEAK FLOW     TIME
                                   MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                6-HR       24-HR      72-HR     24.92-HR
                                (CFS)
+    124.       12.25                 8.         2.         2.         2.
                   (INCHES)       .110       .110       .110       .110
                   (AC-FT)          4.         4.         4.         4.

                   CUMULATIVE AREA =     .70 SQ MI

      ***        ***        ***        ***        ***

                   HYDROGRAPH AT STATION      6.5
                     FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    4.09, TOTAL LOSS =    3.32, TOTAL EXCESS =     .77

   PEAK FLOW     TIME
                                   MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                6-HR       24-HR      72-HR     24.92-HR
                                (CFS)
+    758.       12.17                67.        17.        16.        16.
                   (INCHES)       .889       .889       .889       .889
                   (AC-FT)         33.        33.        33.        33.

                   CUMULATIVE AREA =     .70 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
136 KK    *     6.1    *
          *            *
          **************
                   BASIN 6.1
                    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                    L=      4.5  Lca=      1.9   S=  250.0  Kn= .060  LAG=  68.6
                    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                   THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL
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131 IN          TIME DATA FOR INPUT TIME SERIES
                   JXMIN         15  TIME INTERVAL IN MINUTES
                  JXDATE      1   0  STARTING DATE
                  JXTIME          0  STARTING TIME

              SUBBASIN RUNOFF DATA

141 BA          SUBBASIN CHARACTERISTICS
                   TAREA       3.91  SUBBASIN AREA

                PRECIPITATION DATA

143 PB             STORM       3.86  BASIN TOTAL PRECIPITATION

143 PI            INCREMENTAL PRECIPITATION PATTERN
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .01      .01      .01      .01
                   .01      .01      .01      .01      .01      .02      .02      .02      .05      .05
                   .05      .07      .07      .07      .01      .01      .01      .01      .01      .01
                   .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                   .00      .00      .00      .00      .00      .00      .00      .00

154 LG          GREEN AND AMPT LOSS RATE
                   STRTL        .50  STARTING LOSS
                     DTH        .28  MOISTURE DEFICIT
                    PSIF       6.40  WETTING FRONT SUCTION
                   XKSAT        .21  HYDRAULIC CONDUCTIVITY
                   RTIMP       7.00  PERCENT IMPERVIOUS AREA

154 UI          INPUT UNITGRAPH,  20 ORDINATES,  VOLUME =  .50
                 192.0    378.0    819.0   1062.0   1317.0   1736.0   2384.0   1868.0   1499.0   1185.0
                 926.0    596.0    335.0    285.0    192.0    103.0     59.0     59.0     59.0     59.0
                                                      ***

   TOTAL RAINFALL =     3.86, TOTAL LOSS =     2.58, TOTAL EXCESS =     1.28

PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR     24.92-HR
+  (CFS)      (HR)
                        (CFS)
+   1872.     12.33                252.          67.         65.          65.
                      (INCHES)     .599         .638        .638         .638
                       (AC-FT)     125.         133.        133.         133.

                     CUMULATIVE AREA =    3.91 SQ MI


     ***           ***           ***           ***           ***

                      HYDROGRAPH AT STATION      6.1
                        FOR PLAN 1, RATIO =   .34

   TOTAL RAINFALL =     1.31, TOTAL LOSS =     1.22, TOTAL EXCESS =      .09

PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR     24.92-HR
+  (CFS)      (HR)
                        (CFS)
+     62.     12.33                 14.           5.          5.           5.
                      (INCHES)     .033         .046        .046         .046
                       (AC-FT)       7.          10.         10.          10.

                     CUMULATIVE AREA =    3.91 SQ MI


     ***           ***           ***           ***           ***

                      HYDROGRAPH AT STATION      6.1
                        FOR PLAN 1, RATIO =   .50

   TOTAL RAINFALL =     1.93, TOTAL LOSS =     1.65, TOTAL EXCESS =      .28
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 382.	12.42	(CFS)	51.	15.	14.	14.
		(INCHES)	.122	.141	.141	.141
		(AC-FT)	25.	29.	29.	29.

CUMULATIVE AREA = 3.91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.1
FOR PLAN 1, RATIO = .61

TOTAL RAINFALL = 2.35, TOTAL LOSS = 1.86, TOTAL EXCESS = .50

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 716.	12.42	(CFS)	94.	26.	25.	25.
		(INCHES)	.224	.248	.248	.248
		(AC-FT)	47.	52.	52.	52.

CUMULATIVE AREA = 3.91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.1
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.86, TOTAL LOSS = 2.58, TOTAL EXCESS = 1.28

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 1872.	12.33	(CFS)	252.	67.	65.	65.
		(INCHES)	.599	.638	.638	.638
		(AC-FT)	125.	133.	133.	133.

CUMULATIVE AREA = 3.91 SQ MI

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              **************
              *            *
159 KK        *     6R1    *
              *            *
              **************
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ROUTE FLOW TO CP6.2

HYDROGRAPH ROUTING DATA

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162 RL      ROUTING LOSSES
                 QLOSS        .00  INITIAL LOSS
                 CLOSS        .00  ADDITIONAL FRACTION LOST
                PERCRT      10.00  CHANNEL PERCOLATION RATE
                ELVINV     862.00  INVERT ELEVATION

161 RS      STORAGE ROUTING
                 NSTPS          1  NUMBER OF SUBREACHES
                  ITYP       FLOW  TYPE OF INITIAL CONDITION
                RSVRIC      -1.00  INITIAL CONDITION
                     X        .00  WORKING R AND D COEFFICIENT

163 RC      NORMAL DEPTH CHANNEL
                   ANL       .050  LEFT OVERBANK N-VALUE
                  ANCH       .050  MAIN CHANNEL N-VALUE
                   ANR       .050  RIGHT OVERBANK N-VALUE
                 RLNTH      3021.  REACH LENGTH
                   SEL      .0182  ENERGY SLOPE
                 ELMAX      868.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

		--- LEFT OVERBANK ---			+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---	
165 RY	ELEVATION	868.00	866.00	864.00	862.00	862.00	864.00	866.00	868.00
164 RX	DISTANCE	.00	845.00	870.00	878.00	894.00	908.00	911.00	1788.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.39	.85	1.39	2.01	2.70	3.47	4.32	5.27	6.31
OUTFLOW	.00	9.79	32.51	67.00	113.54	172.73	245.28	343.40	463.97	603.03
ELEVATION	862.00	862.32	862.63	862.95	863.26	863.58	863.89	864.21	864.53	864.84

STORAGE	7.45	8.68	10.02	11.77	18.18	30.55	48.86	73.14	103.37	139.55
OUTFLOW	761.79	941.35	1142.73	1313.91	1643.53	2278.08	3326.73	4893.64	7073.73	9955.20
ELEVATION	865.16	865.47	865.79	866.11	866.42	866.74	867.05	867.37	867.68	868.00

*** *** *** *** ***

HYDROGRAPH AT STATION 6R1
FOR PLAN 1, RATIO = .34

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 41.	12.50		6.	1.	1.	1.
		(INCHES)	.013	.013	.013	.013
		(AC-FT)	3.	3.	3.	3.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	12.50	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
862.85	12.50	862.31	862.12	862.12	862.12

CUMULATIVE AREA = 3.91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R1
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 333.	12.50		41.	10.	10.	10.
		(INCHES)	.096	.096	.096	.096
		(AC-FT)	20.	20.	20.	20.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
4.	12.50	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
864.24	12.50	862.58	862.21	862.20	862.20

CUMULATIVE AREA = 3.91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R1
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 660.	12.50		82.	21.	20.	20.
		(INCHES)	.195	.195	.195	.195
		(AC-FT)	41.	41.	41.	41.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
7.	12.50	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
865.00	12.50	862.76	862.27	862.26	862.26

CUMULATIVE AREA = 3.91 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R1
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1630.	12.50		236.	59.	57.	57.
		(INCHES)	.560	.560	.560	.560
		(AC-FT)	117.	117.	117.	117.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 19.	12.50	3.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ 866.44	12.50	863.18	862.43	862.41	862.41

CUMULATIVE AREA = 3.91 SQ MI

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              *            *
166 KK        *     6.2    *
              *            *
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BASIN 6.2
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.0 Lca= .24 S= 54.0 Kn= .050 LAG= 19.6
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

171 BA SUBBASIN CHARACTERISTICS
TAREA .31 SUBBASIN AREA

PRECIPITATION DATA

143 PB STORM 3.86 BASIN TOTAL PRECIPITATION

143 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.02	.02	.02	.01	.01
.05	.07	.07	.07	.01	.01	.01	.01	.05	.05
.01	.01	.01	.01	.01	.01	.00	.00	.01	.01
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

172 LG GREEN AND AMPT LOSS RATE

STRTL	.39	STARTING LOSS
DTH	.35	MOISTURE DEFICIT
PSIF	4.00	WETTING FRONT SUCTION
XKSAT	.38	HYDRAULIC CONDUCTIVITY
RTIMP	.00	PERCENT IMPERVIOUS AREA

167 UI INPUT UNITGRAPH, 8 ORDINATES, VOLUME = .69

91.0	279.0	516.0	413.0	227.0	81.0	32.0	15.0

***

TOTAL RAINFALL = 3.86, TOTAL LOSS = 2.91, TOTAL EXCESS = .95

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW	6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	22.	5.	5.	5.
+ 270.	12.08	(INCHES)	.652	.652	.652	.652
		(AC-FT)	11.	11.	11.	11.

CUMULATIVE AREA = .31 SQ MI

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                    HYDROGRAPH AT STATION      6.2
                      FOR PLAN 1, RATIO =  .34

   TOTAL RAINFALL =    1.31, TOTAL LOSS =    1.31, TOTAL EXCESS =     .00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      0.        .00                 0.          0.          0.          0.
                        (INCHES)    .000        .000        .000        .000
                        (AC-FT)      0.          0.          0.          0.

                        CUMULATIVE AREA =     .31 SQ MI

     ***             ***            ***            ***            ***

                    HYDROGRAPH AT STATION      6.2
                      FOR PLAN 1, RATIO =  .50

   TOTAL RAINFALL =    1.93, TOTAL LOSS =    1.84, TOTAL EXCESS =     .09

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     38.      12.17                 2.          1.          1.          1.
                        (INCHES)    .064        .064        .064        .064
                        (AC-FT)      1.          1.          1.          1.

                        CUMULATIVE AREA =     .31 SQ MI

     ***             ***            ***            ***            ***

                    HYDROGRAPH AT STATION      6.2
                      FOR PLAN 1, RATIO =  .61

   TOTAL RAINFALL =    2.35, TOTAL LOSS =    2.10, TOTAL EXCESS =     .25

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     92.      12.08                 6.          1.          1.          1.
                        (INCHES)    .173        .173        .173        .173
                        (AC-FT)      3.          3.          3.          3.

                        CUMULATIVE AREA =     .31 SQ MI

     ***             ***            ***            ***            ***

                    HYDROGRAPH AT STATION      6.2
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    3.86, TOTAL LOSS =    2.91, TOTAL EXCESS =     .95

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    270.      12.08                22.          5.          5.          5.
                        (INCHES)    .652        .652        .652        .652
                        (AC-FT)     11.         11.         11.         11.

                        CUMULATIVE AREA =     .31 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  175 KK    *     CP6.2  *
            *            *
            **************
                        COMBINE Q FROM BASINS 6.1 AND 6.2

  177 HC          HYDROGRAPH COMBINATION
                       ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

     ***             ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP6.2
                      FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
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+   (CFS)       (HR)
                          (CFS)
+     41.       12.50                6.          1.          1.          1.
                          (INCHES)  .012        .012        .012        .012
                          (AC-FT)    3.          3.          3.          3.

                          CUMULATIVE AREA =    4.22 SQ MI

      ***         ***          ***         ***         ***

                          HYDROGRAPH AT STATION    CP6.2
                            FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                          (CFS)
+     335.      12.50                43.         11.         10.         10.
                          (INCHES)  .094        .094        .094        .094
                          (AC-FT)    21.         21.         21.         21.

                          CUMULATIVE AREA =    4.22 SQ MI

      ***         ***          ***         ***         ***

                          HYDROGRAPH AT STATION    CP6.2
                            FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                          (CFS)
+     664.      12.50                88.         22.         21.         21.
                          (INCHES)  .194        .194        .194        .194
                          (AC-FT)    44.         44.         44.         44.

                          CUMULATIVE AREA =    4.22 SQ MI

      ***         ***          ***         ***         ***

                          HYDROGRAPH AT STATION    CP6.2
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                          (CFS)
+    1639.      12.50                257.        64.         62.         62.
                          (INCHES)  .567        .567        .567        .567
                          (AC-FT)   128.        128.        128.        128.

                          CUMULATIVE AREA =    4.22 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
178 KK      *     6R2    *
            *            *
            **************
                          ROUTE FLOW TO CP6.10

          HYDROGRAPH ROUTING DATA

181 RL      ROUTING LOSSES
                 QLOSS        .00  INITIAL LOSS
                 CLOSS        .00  ADDITIONAL FRACTION LOST
                PERCRT      10.00  CHANNEL PERCOLATION RATE
                ELVINV     820.00  INVERT ELEVATION

180 RS      STORAGE ROUTING
                 NSTPS          2  NUMBER OF SUBREACHES
                  ITYP       FLOW  TYPE OF INITIAL CONDITION
                RSVRIC      -1.00  INITIAL CONDITION
                     X        .00  WORKING R AND D COEFFICIENT

182 RC      NORMAL DEPTH CHANNEL
                   ANL       .030  LEFT OVERBANK N-VALUE
                  ANCH       .030  MAIN CHANNEL N-VALUE
                   ANR       .030  RIGHT OVERBANK N-VALUE
                 RLNTH      5125.  REACH LENGTH
                   SEL      .0020  ENERGY SLOPE
                 ELMAX      815.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
184 RY      ELEVATION     815.00    815.00    815.00    810.00    810.00    815.00    815.00    815.00
183 RX      DISTANCE        .00    100.00    200.00    215.00    295.00    310.00    410.00    510.00
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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	2.50	5.05	7.65	10.30	13.00	15.74	18.54	21.38	24.27
OUTFLOW	.00	19.26	61.30	120.84	195.77	284.84	387.20	502.25	629.52	768.67
ELEVATION	810.00	810.26	810.53	810.79	811.05	811.32	811.58	811.84	812.11	812.37
STORAGE	27.22	30.21	33.25	36.33	39.47	42.66	45.89	49.18	52.51	55.91
OUTFLOW	919.40	1081.48	1254.74	1439.03	1634.22	1840.23	2056.96	2284.37	2522.41	2771.08
ELEVATION	812.63	812.90	813.16	813.42	813.68	813.95	814.21	814.47	814.74	815.00

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HYDROGRAPH AT STATION 6R2
FOR PLAN 1, RATIO = .34

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 15.	13.42		6.	1.	1.	1.
		(INCHES)	.012	.012	.012	.012
		(AC-FT)	3.	3.	3.	3.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	13.42	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
810.20	13.42	810.08	810.02	810.02	810.02

CUMULATIVE AREA = 4.22 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R2
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 226.	12.92		43.	11.	10.	10.
		(INCHES)	.094	.094	.094	.094
		(AC-FT)	21.	21.	21.	21.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
6.	12.92	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
811.14	12.92	810.30	810.08	810.07	810.07

CUMULATIVE AREA = 4.22 SQ MI

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HYDROGRAPH AT STATION 6R2
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 536.	12.75		88.	22.	21.	21.
		(INCHES)	.193	.194	.194	.194
		(AC-FT)	43.	44.	44.	44.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
10.	12.75	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
811.91	12.75	810.46	810.11	810.11	810.11

CUMULATIVE AREA = 4.22 SQ MI

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HYDROGRAPH AT STATION 6R2

FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 1563.	12.67

	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	257.	64.	62.	62.
(INCHES)	.566	.567	.567	.567
(AC-FT)	127.	128.	128.	128.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 19.	12.67

MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
4.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)
+ 813.59	12.67

MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
810.84	810.21	810.20	810.20

CUMULATIVE AREA = 4.22 SQ MI

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              **************
              *            *
185 KK        *     6.10   *
              *            *
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BASIN 6.10
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.51 Lca= .47 S= 48.0 Kn= .050 LAG= 30.3
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

190 BA SUBBASIN CHARACTERISTICS
TAREA .38 SUBBASIN AREA

PRECIPITATION DATA

143 PB STORM 3.86 BASIN TOTAL PRECIPITATION

143 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.02	.01	.01	.01	.01
.05	.07	.07	.07	.01	.01	.02	.02	.05	.05
.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

191 LG GREEN AND AMPT LOSS RATE

STRTL	.39	STARTING LOSS
DTH	.35	MOISTURE DEFICIT
PSIF	4.00	WETTING FRONT SUCTION
XKSAT	.38	HYDRAULIC CONDUCTIVITY
RTIMP	.00	PERCENT IMPERVIOUS AREA

186 UI INPUT UNITGRAPH, 8 ORDINATES, VOLUME = .56

91.0	279.0	516.0	413.0	227.0	81.0	32.0	15.0

***

TOTAL RAINFALL = 3.86, TOTAL LOSS = 2.91, TOTAL EXCESS = .95

PEAK FLOW (CFS)	TIME (HR)
+	

MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR

```
                    (CFS)
+     270.     12.08                22.          5.          5.          5.
                  (INCHES)         .532        .532        .532        .532
                  (AC-FT)           11.         11.         11.         11.

                  CUMULATIVE AREA =     .38 SQ MI

     ***            ***            ***          ***          ***

                  HYDROGRAPH AT STATION     6.10
                    FOR PLAN 1, RATIO =  .34

    TOTAL RAINFALL =    1.31, TOTAL LOSS =    1.31, TOTAL EXCESS =     .00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                    (CFS)
+       0.        .00                 0.          0.          0.          0.
                  (INCHES)         .000        .000        .000        .000
                  (AC-FT)             0.          0.          0.          0.

                  CUMULATIVE AREA =     .38 SQ MI

     ***            ***            ***          ***          ***

                  HYDROGRAPH AT STATION     6.10
                    FOR PLAN 1, RATIO =  .50

    TOTAL RAINFALL =    1.93, TOTAL LOSS =    1.84, TOTAL EXCESS =     .09

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                    (CFS)
+      38.      12.17                 2.          1.          1.          1.
                  (INCHES)         .052        .052        .052        .052
                  (AC-FT)             1.          1.          1.          1.

                  CUMULATIVE AREA =     .38 SQ MI

     ***            ***            ***          ***          ***

                  HYDROGRAPH AT STATION     6.10
                    FOR PLAN 1, RATIO =  .61

    TOTAL RAINFALL =    2.35, TOTAL LOSS =    2.10, TOTAL EXCESS =     .25

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                    (CFS)
+      92.      12.08                 6.          1.          1.          1.
                  (INCHES)         .141        .141        .141        .141
                  (AC-FT)             3.          3.          3.          3.

                  CUMULATIVE AREA =     .38 SQ MI

     ***            ***            ***          ***          ***

                  HYDROGRAPH AT STATION     6.10
                    FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    3.86, TOTAL LOSS =    2.91, TOTAL EXCESS =     .95

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                    (CFS)
+     270.     12.08                22.          5.          5.          5.
                  (INCHES)         .532        .532        .532        .532
                  (AC-FT)           11.         11.         11.         11.

                  CUMULATIVE AREA =     .38 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 194 KK     *   CP6.10   *
            *            *
            **************
                    COMBINE ROUTED FLOW FROM BASIN 6.2 AND BASIN 6.10.

 196 HC          HYDROGRAPH COMBINATION
                      ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
```

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                                                                                  ***
     ***              ***              ***              ***              ***

                    HYDROGRAPH AT STATION   CP6.10
                      FOR PLAN 1, RATIO =  .34

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
 +   (CFS)        (HR)                    6-HR        24-HR        72-HR      24.92-HR
                                     (CFS)
 +     15.        13.42                    6.           1.           1.           1.
                                  (INCHES)  .011        .011         .011         .011
                                  (AC-FT)    3.           3.           3.           3.

                    CUMULATIVE AREA =    4.60 SQ MI

     ***              ***              ***              ***              ***

                    HYDROGRAPH AT STATION   CP6.10
                      FOR PLAN 1, RATIO =  .50

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
 +   (CFS)        (HR)                    6-HR        24-HR        72-HR      24.92-HR
                                     (CFS)
 +    226.        12.92                   45.          11.          11.          11.
                                  (INCHES)  .090        .091         .091         .091
                                  (AC-FT)   22.          22.          22.          22.

                    CUMULATIVE AREA =    4.60 SQ MI

     ***              ***              ***              ***              ***

                    HYDROGRAPH AT STATION   CP6.10
                      FOR PLAN 1, RATIO =  .61

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
 +   (CFS)        (HR)                    6-HR        24-HR        72-HR      24.92-HR
                                     (CFS)
 +    536.        12.75                   93.          23.          23.          23.
                                  (INCHES)  .189        .189         .189         .189
                                  (AC-FT)   46.          46.          46.          46.

                    CUMULATIVE AREA =    4.60 SQ MI

     ***              ***              ***              ***              ***

                    HYDROGRAPH AT STATION   CP6.10
                      FOR PLAN 1, RATIO = 1.00

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
 +   (CFS)        (HR)                    6-HR        24-HR        72-HR      24.92-HR
                                     (CFS)
 +   1563.        12.67                  279.          70.          67.          67.
                                  (INCHES)  .563        .564         .564         .564
                                  (AC-FT)  138.         138.         138.         138.

                    CUMULATIVE AREA =    4.60 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
197 KK      *     6R10   *
            *            *
            **************
                      ROUTE FLOW TO CP6.12

          HYDROGRAPH ROUTING DATA

200 RL        ROUTING LOSSES
                   QLOSS        .00  INITIAL LOSS
                   CLOSS        .00  ADDITIONAL FRACTION LOST
                  PERCRT      10.00  CHANNEL PERCOLATION RATE
                  ELVINV     810.00  INVERT ELEVATION

199 RS        STORAGE ROUTING
                   NSTPS          3  NUMBER OF SUBREACHES
                    ITYP       FLOW  TYPE OF INITIAL CONDITION
                  RSVRIC      -1.00  INITIAL CONDITION
                       X        .00 WORKING R AND D COEFFICIENT

201 RC        NORMAL DEPTH CHANNEL
                    ANL       .030  LEFT OVERBANK N-VALUE
                   ANCH       .030  MAIN CHANNEL N-VALUE
```

ANR	.030	RIGHT OVERBANK N-VALUE
RLNTH	1978.	REACH LENGTH
SEL	.0020	ENERGY SLOPE
ELMAX	815.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---	+ ------ MAIN CHANNEL -------				+ --- RIGHT OVERBANK ---		
203 RY	ELEVATION	815.00	815.00	815.00	810.00	810.00	815.00	815.00	815.00
202 RX	DISTANCE	.00	100.00	200.00	215.00	295.00	310.00	410.00	510.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.97	1.95	2.95	3.98	5.02	6.08	7.15	8.25	9.37
OUTFLOW	.00	19.26	61.30	120.84	195.77	284.84	387.20	502.25	629.52	768.67
ELEVATION	810.00	810.26	810.53	810.79	811.05	811.32	811.58	811.84	812.11	812.37
STORAGE	10.50	11.66	12.83	14.02	15.23	16.46	17.71	18.98	20.27	21.58
OUTFLOW	919.40	1081.48	1254.74	1439.03	1634.22	1840.23	2056.96	2284.37	2522.41	2771.08
ELEVATION	812.63	812.90	813.16	813.42	813.68	813.95	814.21	814.47	814.74	815.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 387. TO 2771.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

*** *** *** *** ***

HYDROGRAPH AT STATION 6R10
FOR PLAN 1, RATIO = .34

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 0.	22.92		0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
0.	.00	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
810.00	.00	810.00	810.00	810.00	810.00

CUMULATIVE AREA = 4.60 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R10
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 180.	13.08		25.	6.	6.	6.
		(INCHES)	.050	.050	.050	.050
		(AC-FT)	12.	12.	12.	12.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	13.08	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
811.04	13.08	810.21	810.05	810.05	810.05

CUMULATIVE AREA = 4.60 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R10
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 486.	12.83		71.	18.	17.	17.
		(INCHES)	.144	.144	.144	.144
		(AC-FT)	35.	35.	35.	35.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				

```
          2.       12.83                         0.         0.         0.         0.

      PEAK STAGE    TIME                                MAXIMUM AVERAGE STAGE
                                              6-HR       24-HR       72-HR      24.92-HR
  +    (FEET)       (HR)
        811.83     12.83                     810.38      810.10     810.09      810.09

                              CUMULATIVE AREA =      4.60 SQ MI

          ***              ***              ***              ***              ***

                               HYDROGRAPH AT STATION       6R10
                                FOR PLAN 1, RATIO = 1.00

      PEAK FLOW     TIME                               MAXIMUM AVERAGE FLOW
                                              6-HR       24-HR       72-HR      24.92-HR
  +     (CFS)       (HR)
                                  (CFS)
  +     1512.      12.75                      253.         63.         61.         61.
                                (INCHES)      .511        .511        .511        .511
                                 (AC-FT)      125.        125.        125.        125.

      PEAK STORAGE  TIME                             MAXIMUM AVERAGE STORAGE
                                              6-HR       24-HR       72-HR      24.92-HR
  +    (AC-FT)      (HR)
          5.       12.75                        1.          0.          0.          0.

      PEAK STAGE    TIME                              MAXIMUM AVERAGE STAGE
                                              6-HR       24-HR       72-HR      24.92-HR
  +    (FEET)       (HR)
        813.54     12.75                     810.81      810.20     810.20      810.20

                              CUMULATIVE AREA =      4.60 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                 **************
                 *            *
   204 KK        *     6.3    *
                 *            *
                 **************

                               BASIN 6.3
                                THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                                L=      3.15  Lca=       1.55    S=   519.0  Kn= .060   LAG=    48.1
                                PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

                  SUBBASIN RUNOFF DATA

   209 BA           SUBBASIN CHARACTERISTICS
                        TAREA         2.53   SUBBASIN AREA

                    PRECIPITATION DATA

   143 PB               STORM         3.86   BASIN TOTAL PRECIPITATION

   143 PI            INCREMENTAL PRECIPITATION PATTERN
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .01      .01      .01      .01
                          .01      .01      .01      .01      .01      .02      .02      .02      .05      .05
                          .05      .07      .07      .07      .01      .01      .01      .01      .01      .01
                          .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                          .00      .00      .00      .00      .00      .00      .00      .00

   210 LG          GREEN AND AMPT LOSS RATE
                        STRTL          .38   STARTING LOSS
                          DTH          .32   MOISTURE DEFICIT
                         PSIF         4.70   WETTING FRONT SUCTION
```

```
                    XKSAT          .32  HYDRAULIC CONDUCTIVITY
                    RTIMP         1.00  PERCENT IMPERVIOUS AREA

205 UI          INPUT UNITGRAPH,  16 ORDINATES,  VOLUME =  .92
                    278.0     768.0    1392.0    1799.0    2514.0    3339.0    2475.0    1895.0    1418.0     847.0
                    476.0     340.0     210.0      85.0      85.0      85.0

                                                                  ***

   TOTAL RAINFALL =    3.86, TOTAL LOSS =    2.83, TOTAL EXCESS =    1.03

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    2299.     12.25                 254.        64.         62.         62.
                        (INCHES)    .933       .943        .943        .943
                         (AC-FT)    126.       127.        127.        127.

                        CUMULATIVE AREA =    2.53 SQ MI

     ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      6.3
                          FOR PLAN 1, RATIO =  .34

   TOTAL RAINFALL =    1.31, TOTAL LOSS =    1.30, TOTAL EXCESS =     .01

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      12.      12.25                   2.          1.          1.          1.
                        (INCHES)    .009       .012        .012        .012
                         (AC-FT)      1.         2.          2.          2.

                        CUMULATIVE AREA =    2.53 SQ MI

     ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      6.3
                          FOR PLAN 1, RATIO =  .50

   TOTAL RAINFALL =    1.93, TOTAL LOSS =    1.79, TOTAL EXCESS =     .14

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     361.      12.33                  34.         9.          9.          9.
                        (INCHES)    .126       .132        .132        .132
                         (AC-FT)     17.        18.         18.         18.

                        CUMULATIVE AREA =    2.53 SQ MI

     ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      6.3
                          FOR PLAN 1, RATIO =  .61

   TOTAL RAINFALL =    2.35, TOTAL LOSS =    2.03, TOTAL EXCESS =     .33

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     781.      12.33                  80.        20.         20.         20.
                        (INCHES)    .293       .300        .300        .300
                         (AC-FT)     40.        40.         40.         40.

                        CUMULATIVE AREA =    2.53 SQ MI

     ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      6.3
                          FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    3.86, TOTAL LOSS =    2.83, TOTAL EXCESS =    1.03

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    2299.     12.25                 254.        64.         62.         62.
                        (INCHES)    .933       .943        .943        .943
                         (AC-FT)    126.       127.        127.        127.

                        CUMULATIVE AREA =    2.53 SQ MI
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*** ***

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              **************
              *            *
214 KK        *     6R3    *
              *            *
              **************
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ROUTE FLOW TO CP6.12

HYDROGRAPH ROUTING DATA

```
217 RL    ROUTING LOSSES
                QLOSS        .00  INITIAL LOSS
                CLOSS        .00  ADDITIONAL FRACTION LOST
               PERCRT      10.00  CHANNEL PERCOLATION RATE
               ELVINV     835.00  INVERT ELEVATION

216 RS    STORAGE ROUTING
               NSTPS          1  NUMBER OF SUBREACHES
                ITYP       FLOW  TYPE OF INITIAL CONDITION
              RSVRIC      -1.00  INITIAL CONDITION
                   X        .00  WORKING R AND D COEFFICIENT

218 RC    NORMAL DEPTH CHANNEL
                 ANL       .050  LEFT OVERBANK N-VALUE
                ANCH       .030  MAIN CHANNEL N-VALUE
                 ANR       .050  RIGHT OVERBANK N-VALUE
               RLNTH      4312.  REACH LENGTH
                 SEL      .0130  ENERGY SLOPE
               ELMAX      842.5  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
220 RY	ELEVATION	842.50	841.00	842.60	836.00	836.00	841.60	841.00	842.50
219 RX	DISTANCE	.00	1209.00	1242.00	1258.00	1271.00	1285.00	1312.00	2383.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.47	.99	1.58	2.22	2.91.	3.67	4.48	5.35	6.27
OUTFLOW	.00	12.53	40.65	81.83	135.57	201.90	281.05	373.37	479.28	599.22
ELEVATION	836.00	836.34	836.68	837.03	837.37	837.71	838.05	838.39	838.74	839.08
STORAGE	7.25	8.29	9.39	10.54	11.75	14.38	31.95	67.84	121.64	193.32
OUTFLOW	733.65	883.04	1047.88	1228.64	1425.81	1647.45	2102.57	3125.65	4936.57	7719.05
ELEVATION	839.42	839.76	840.11	840.45	840.79	841.13	841.47	841.82	842.16	842.50

*** *** *** *** ***

HYDROGRAPH AT STATION 6R3
FOR PLAN 1, RATIO = .34

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 6.	12.50	(CFS)	2.	1.	1.	1.
		(INCHES)	.006	.008	.008	.008
		(AC-FT)	1.	1.	1.	1.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 0.	12.50	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ 836.22	12.50	836.06	836.02	836.02	836.02

CUMULATIVE AREA = 2.53 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R3
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 307.	12.42	(CFS)	32.	8.	8.	8.
		(INCHES)	.117	.120	.120	.120
		(AC-FT)	16.	16.	16.	16.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 4.	12.42	1.	0.	0.	0.

```
  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
    838.19     12.42               836.35      836.10      836.10      836.10

                          CUMULATIVE AREA =    2.53 SQ MI


      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      6R3
                            FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     716.     12.42                 76.         19.         19.         19.
                          (INCHES)  .280        .284        .284        .284
                          (AC-FT)    38.         38.         38.         38.

 PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       7.      12.42                  1.          0.          0.          0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
    839.42     12.42               836.56      836.15      836.15      836.15

                          CUMULATIVE AREA =    2.53 SQ MI


      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      6R3
                            FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+    1849.     12.42                248.         62.         60.         60.
                          (INCHES)  .910        .916        .916        .916
                          (AC-FT)   123.        124.        124.        124.

 PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      24.      12.42                  3.          1.          1.          1.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
    841.31     12.42               837.02      836.27      836.26      836.26

                          CUMULATIVE AREA =    2.53 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  221 KK    *      6.12  *
            *            *
            **************
                          BASIN 6.12
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=     1.32  Lca=      1.55   S=    58.0  Kn= .050  LAG=  43.7
                           PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

  226 BA        SUBBASIN CHARACTERISTICS
                      TAREA         .51  SUBBASIN AREA

                PRECIPITATION DATA

  143 PB              STORM        3.86  BASIN TOTAL PRECIPITATION

  143 PI          INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.00	.01	.01	.01	.01
.05	.07	.07	.07	.01	.02	.02	.02	.05	.05
.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

227 LG GREEN AND AMPT LOSS RATE

STRTL	.50	STARTING LOSS
DTH	.30	MOISTURE DEFICIT
PSIF	4.00	WETTING FRONT SUCTION
XKSAT	.55	HYDRAULIC CONDUCTIVITY
RTIMP	.00	PERCENT IMPERVIOUS AREA

222 UI INPUT UNITGRAPH, 10 ORDINATES, VOLUME = .55

84.0 277.0 459.0 605.0 378.0 205.0 86.0 38.0 17.0 17.0

***

TOTAL RAINFALL = 3.86, TOTAL LOSS = 3.07, TOTAL EXCESS = .79

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 287.	12.08	(CFS)	24.	6.	6.	6.
		(INCHES)	.433	.433	.433	.433
		(AC-FT)	12.	12.	12.	12.

CUMULATIVE AREA = .51 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.12
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.31, TOTAL LOSS = 1.31, TOTAL EXCESS = .00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .51 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.12
FOR PLAN 1, RATIO = .50

TOTAL RAINFALL = 1.93, TOTAL LOSS = 1.92, TOTAL EXCESS = .01

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 5.	12.25	(CFS)	0.	0.	0.	0.
		(INCHES)	.004	.004	.004	.004
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .51 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.12
FOR PLAN 1, RATIO = .61

TOTAL RAINFALL = 2.35, TOTAL LOSS = 2.23, TOTAL EXCESS = .12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 60.	12.17	(CFS)	4.	1.	1.	1.
		(INCHES)	.068	.068	.068	.068
		(AC-FT)	2.	2.	2.	2.

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                    CUMULATIVE AREA =     .51 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION     6.12
                      FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    3.86, TOTAL LOSS =    3.07, TOTAL EXCESS =     .79

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    287.      12.08                24.          6.          6.          6.
                        (INCHES)   .433        .433        .433        .433
                         (AC-FT)    12.         12.         12.         12.

                    CUMULATIVE AREA =     .51 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 231 KK     *    CP6.12  *
            *            *
            **************
                    COMBINE ROUTED FLOW FROM BASIN 6.10, ROUTED FLOW FROM BASIN 6.3, AND BASIN 6

 233 HC          HYDROGRAPH COMBINATION
                      ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION   CP6.12
                      FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      6.      12.50                 2.          1.          1.          1.
                        (INCHES)   .002        .003        .003        .003
                         (AC-FT)     1.          1.          1.          1.

                    CUMULATIVE AREA =    7.64 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION   CP6.12
                      FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    308.      12.42                57.         14.         14.         14.
                        (INCHES)   .069        .070        .070        .070
                         (AC-FT)    28.         29.         29.         29.

                    CUMULATIVE AREA =    7.64 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION   CP6.12
                      FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    824.      12.42               151.         38.         37.         37.
                        (INCHES)   .184        .185        .185        .185
                         (AC-FT)    75.         75.         75.         75.

                    CUMULATIVE AREA =    7.64 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION   CP6.12
                      FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
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```
+    3162.    12.50          (CFS)
                                524.        131.        127.        127.
                   (INCHES)     .638        .640        .640        .640
                   (AC-FT)      260.        261.        261.        261.

                   CUMULATIVE AREA =    7.64 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
234 KK      *    6R12    *
            *            *
            **************

                    ROUTE FLOW TO CP6.4

          HYDROGRAPH ROUTING DATA

237 RL          ROUTING LOSSES
                     QLOSS        .00  INITIAL LOSS
                     CLOSS        .00  ADDITIONAL FRACTION LOST
                    PERCRT      10.00  CHANNEL PERCOLATION RATE
                    ELVINV     820.00  INVERT ELEVATION

236 RS          STORAGE ROUTING
                     NSTPS          2  NUMBER OF SUBREACHES
                      ITYP       FLOW  TYPE OF INITIAL CONDITION
                    RSVRIC      -1.00  INITIAL CONDITION
                         X        .00  WORKING R AND D COEFFICIENT

238 RC          NORMAL DEPTH CHANNEL
                       ANL       .030  LEFT OVERBANK N-VALUE
                      ANCH       .030  MAIN CHANNEL N-VALUE
                       ANR       .030  RIGHT OVERBANK N-VALUE
                     RLNTH      2340.  REACH LENGTH
                       SEL      .0020  ENERGY SLOPE
                     ELMAX      826.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                CROSS-SECTION DATA
                      --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
240 RY    ELEVATION   826.00    826.00    826.00    820.50    820.50    826.00    826.00    826.00
239 RX    DISTANCE       .00    100.00    200.00    216.50    356.50    373.00    473.00    573.00

                                                  ***

                                COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       .00      2.19      4.41      6.65      8.92     11.22     13.55     15.90     18.28     20.69
          OUTFLOW       .00     39.46    125.49    247.08    399.80    580.97    788.73   1021.72   1278.88   1559.34
        ELEVATION    820.50    820.79    821.08    821.37    821.66    821.95    822.24    822.53    822.82    823.11

          STORAGE     23.12     25.58     28.07     30.59     33.13     35.70     38.29     40.91     43.56     46.25
          OUTFLOW   1862.41   2187.51   2534.14   2901.88   3290.38   3699.31   4128.42   4577.46   5046.22   5534.56
        ELEVATION    823.39    823.68    823.97    824.26    824.55    824.84    825.13    825.42    825.71    826.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN     2534. TO     5535.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

    ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION     6R12
                      FOR PLAN 1, RATIO =  .34

 PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
+  (CFS)      (HR)                  6-HR       24-HR       72-HR     24.92-HR
                                  (CFS)
+     1.      13.08                   0.          0.          0.          0.
                                (INCHES)        .000        .001        .001        .001
                                (AC-FT)            0.          0.          0.          0.

 PEAK STORAGE  TIME                          MAXIMUM AVERAGE STORAGE
+  (AC-FT)    (HR)                  6-HR       24-HR       72-HR     24.92-HR
      0.      13.00                   0.          0.          0.          0.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
+  (FEET)     (HR)                  6-HR       24-HR       72-HR     24.92-HR
   820.51     13.08                820.51      820.50      820.50      820.50

                    CUMULATIVE AREA =    7.64 SQ MI

    ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION     6R12
                      FOR PLAN 1, RATIO =  .50
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 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                              (CFS)
+    195.      12.67                40.          10.          10.          10.
                          (INCHES)  .049        .049         .049         .049
                           (AC-FT)   20.         20.          20.          20.

 PEAK STORAGE  TIME                        MAXIMUM AVERAGE STORAGE
                                   6-HR        24-HR        72-HR      24.92-HR
+  (AC-FT)      (HR)
       3.      12.67                 1.           0.           0.           0.

 PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                   6-HR        24-HR        72-HR      24.92-HR
+   (FEET)      (HR)
   821.30      12.67              820.72       820.55       820.55       820.55

                         CUMULATIVE AREA =    7.64 SQ MI

     ***            ***            ***          ***          ***

                        HYDROGRAPH AT STATION     6R12
                         FOR PLAN 1, RATIO =  .61

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                              (CFS)
+    727.      12.58               129.          32.          31.          31.
                          (INCHES)  .157        .157         .157         .157
                           (AC-FT)   64.         64.          64.          64.

 PEAK STORAGE  TIME                        MAXIMUM AVERAGE STORAGE
                                   6-HR        24-HR        72-HR      24.92-HR
+  (AC-FT)      (HR)
       7.      12.58                 2.           0.           0.           0.

 PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                   6-HR        24-HR        72-HR      24.92-HR
+   (FEET)      (HR)
   822.19      12.58              820.91       820.60       820.60       820.60

                         CUMULATIVE AREA =    7.64 SQ MI

     ***            ***            ***          ***          ***

                        HYDROGRAPH AT STATION     6R12
                         FOR PLAN 1, RATIO = 1.00

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                              (CFS)
+   3070.      12.58               495.         124.         119.         119.
                          (INCHES)  .602        .603         .603         .603
                           (AC-FT)  245.         246.         246.         246.

 PEAK STORAGE  TIME                        MAXIMUM AVERAGE STORAGE
                                   6-HR        24-HR        72-HR      24.92-HR
+  (AC-FT)      (HR)
      16.      12.58                 3.           1.           1.           1.

 PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                   6-HR        24-HR        72-HR      24.92-HR
+   (FEET)      (HR)
   824.42      12.58              821.37       820.72       820.71       820.71

                         CUMULATIVE AREA =    7.64 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 241 KK     *     6.1I   *
            *            *
            **************
                        BASIN 6.11
                         THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                         L=     2.97  Lca=     1.21   S=  551.0  Kn= .060  LAG=  42.3
                         PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

 246 BA         SUBBASIN CHARACTERISTICS
                      TAREA        2.17  SUBBASIN AREA

                PRECIPITATION DATA
```

143 PB STORM 3.86 BASIN TOTAL PRECIPITATION

143 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

247 LG GREEN AND AMPT LOSS RATE

STRTL	.38	STARTING LOSS
DTH	.32	MOISTURE DEFICIT
PSIF	4.70	WETTING FRONT SUCTION
XKSAT	.32	HYDRAULIC CONDUCTIVITY
RTIMP	1.00	PERCENT IMPERVIOUS AREA

242 UI INPUT UNITGRAPH, 16 ORDINATES, VOLUME = 1.07

278.0	768.0	1392.0	1799.0	2514.0	3339.0	2475.0	1895.0	1418.0	847.0
476.0	340.0	210.0	85.0	85.0	85.0				

***

TOTAL RAINFALL = 3.86, TOTAL LOSS = 2.83, TOTAL EXCESS = 1.03

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW	6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	254.	64.	62.	62.
+ 2299.	12.25	(INCHES)	1.088	1.100	1.100	1.100
		(AC-FT)	126.	127.	127.	127.

CUMULATIVE AREA = 2.17 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.11
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.31, TOTAL LOSS = 1.30, TOTAL EXCESS = .01

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW	6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	2.	1.	1.	1.
+ 12.	12.25	(INCHES)	.010	.014	.014	.014
		(AC-FT)	1.	2.	2.	2.

CUMULATIVE AREA = 2.17 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.11
FOR PLAN 1, RATIO = .50

TOTAL RAINFALL = 1.93, TOTAL LOSS = 1.79, TOTAL EXCESS = .14

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW	6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	34.	9.	9.	9.
+ 361.	12.33	(INCHES)	.147	.153	.153	.153
		(AC-FT)	17.	18.	18.	18.

CUMULATIVE AREA = 2.17 SQ MI

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

                    HYDROGRAPH AT STATION     6.11
                      FOR PLAN 1, RATIO =  .61

   TOTAL RAINFALL =    2.35, TOTAL LOSS =    2.03, TOTAL EXCESS =    .33

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    781.      12.33                 80.         20.         20.         20.
                        (INCHES)   .342        .349        .349        .349
                         (AC-FT)    40.         40.         40.         40.

                    CUMULATIVE AREA =    2.17 SQ MI

***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION     6.11
                      FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    3.86, TOTAL LOSS =    2.83, TOTAL EXCESS =    1.03

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+   2299.      12.25                254.         64.         62.         62.
                        (INCHES)  1.088      1.100       1.100       1.100
                         (AC-FT)   126.        127.        127.        127.

                    CUMULATIVE AREA =    2.17 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


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          *            *
251 KK    *    6R11    *
          *            *
          **************
                    ROUTE FROW TO CP6.4

            HYDROGRAPH ROUTING DATA

254 RL        ROUTING LOSSES
                   QLOSS        .00  INITIAL LOSS
                   CLOSS        .00  ADDITIONAL FRACTION LOST
                  PERCRT      10.00  CHANNEL PERCOLATION RATE
                  ELVINV     830.00  INVERT ELEVATION

253 RS        STORAGE ROUTING
                  NSTPS          1  NUMBER OF SUBREACHES
                   ITYP       FLOW  TYPE OF INITIAL CONDITION
                  RSVRIC      -1.00  INITIAL CONDITION
                       X        .00 WORKING R AND D COEFFICIENT

255 RC        NORMAL DEPTH CHANNEL
                    ANL       .050  LEFT OVERBANK N-VALUE
                   ANCH       .030  MAIN CHANNEL N-VALUE
                    ANR       .050  RIGHT OVERBANK N-VALUE
                  RLNTH      4144.  REACH LENGTH
                    SEL      .0140  ENERGY SLOPE
                  ELMAX      842.5  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                CROSS-SECTION DATA
                      --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
257 RY     ELEVATION   842.50    841.00    842.60    836.00    836.00    841.60    841.00    842.50
256 RX     DISTANCE       .00   1209.00   1242.00   1258.00   1271.00   1285.00   1312.00   2383.00

                                          ***

                          COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00       .45       .96      1.52      2.13      2.80      3.53      4.30      5.14      6.03
          OUTFLOW        .00     13.01     42.19     84.92    140.69    209.52    291.66    387.47    497.38    621.84
        ELEVATION     836.00    836.34    836.68    837.03    837.37    837.71    838.05    838.39    838.74    839.08

          STORAGE       6.97      7.97      9.02     10.13     11.30     13.82     30.71     65.20    116.91    185.79
          OUTFLOW     761.34    916.37   1087.43   1275.02   1479.63   1709.64   2181.94   3243.64   5122.92   8010.44
        ELEVATION     839.42    839.76    840.11    840.45    840.79    841.13    841.47    841.82    842.16    842.50

***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION     6R11
                      FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
```

+	(CFS)	(HR)
+	8.	12.50

		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
	(CFS)	2.	1.	1.	1.
	(INCHES)	.009	.013	.013	.013
	(AC-FT)	1.	2.	2.	2.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
0.	12.50

	MAXIMUM AVERAGE STORAGE			
	6-HR	24-HR	72-HR	24.92-HR
	0.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)
836.22	12.50

	MAXIMUM AVERAGE STAGE			
	6-HR	24-HR	72-HR	24.92-HR
	836.06	836.02	836.02	836.02

CUMULATIVE AREA = 2.17 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R11
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 320.	12.42

	MAXIMUM AVERAGE FLOW			
	6-HR	24-HR	72-HR	24.92-HR
(CFS)	34.	9.	8.	8.
(INCHES)	.144	.150	.150	.150
(AC-FT)	17.	17.	17.	17.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
4.	12.42

	MAXIMUM AVERAGE STORAGE			
	6-HR	24-HR	72-HR	24.92-HR
	1.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)
838.17	12.42

	MAXIMUM AVERAGE STAGE			
	6-HR	24-HR	72-HR	24.92-HR
	836.34	836.10	836.09	836.09

CUMULATIVE AREA = 2.17 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R11
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 729.	12.42

	MAXIMUM AVERAGE FLOW			
	6-HR	24-HR	72-HR	24.92-HR
(CFS)	79.	20.	19.	19.
(INCHES)	.337	.344	.344	.344
(AC-FT)	39.	40.	40.	40.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
7.	12.42

	MAXIMUM AVERAGE STORAGE			
	6-HR	24-HR	72-HR	24.92-HR
	1.	0.	0.	0.

PEAK STAGE	TIME
+ (FEET)	(HR)
839.36	12.42

	MAXIMUM AVERAGE STAGE			
	6-HR	24-HR	72-HR	24.92-HR
	836.54	836.15	836.14	836.14

CUMULATIVE AREA = 2.17 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R11
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 1908.	12.42

	MAXIMUM AVERAGE FLOW			
	6-HR	24-HR	72-HR	24.92-HR
(CFS)	251.	63.	61.	61.
(INCHES)	1.077	1.088	1.088	1.088
(AC-FT)	125.	126.	126.	126.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
22.	12.42

	MAXIMUM AVERAGE STORAGE			
	6-HR	24-HR	72-HR	24.92-HR
	3.	1.	1.	1.

PEAK STAGE	TIME
+ (FEET)	(HR)
841.29	12.42

	MAXIMUM AVERAGE STAGE			
	6-HR	24-HR	72-HR	24.92-HR
	836.99	836.27	836.26	836.26

CUMULATIVE AREA = 2.17 SQ MI

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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              *            *
258 KK        *      6.4   *
              *            *
              **************
                        BASIN 6.4
                         THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                         L=     1.15  Lca=      .22   S=   51.0  Kn= .050  LAG=  20.2
                         PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

                 SUBBASIN RUNOFF DATA

263 BA             SUBBASIN CHARACTERISTICS
                        TAREA          .37  SUBBASIN AREA

                   PRECIPITATION DATA

143 PB                  STORM        3.86  BASIN TOTAL PRECIPITATION

143 PI               INCREMENTAL PRECIPITATION PATTERN
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                        .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                        .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                        .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00

264 LG             GREEN AND AMPT LOSS RATE
                        STRTL          .50  STARTING LOSS
                          DTH          .30  MOISTURE DEFICIT
                         PSIF         4.00  WETTING FRONT SUCTION
                        XKSAT          .55  HYDRAULIC CONDUCTIVITY
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

259 UI             INPUT UNITGRAPH,  10 ORDINATES,  VOLUME =  .76
                       84.0     277.0     459.0     605.0     378.0     205.0      86.0      38.0      17.0      17.0
                                                                  ***

    TOTAL RAINFALL =    3.86, TOTAL LOSS =    3.07, TOTAL EXCESS =     .79

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     287.     12.08                 24.          6.          6.          6.
                         (INCHES)   .597        .597        .597        .597
                          (AC-FT)    12.         12.         12.         12.

                         CUMULATIVE AREA =     .37 SQ MI

      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      6.4
                           FOR PLAN 1, RATIO =  .34

    TOTAL RAINFALL =    1.31, TOTAL LOSS =    1.31, TOTAL EXCESS =     .00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+       0.        .00                  0.          0.          0.          0.
                         (INCHES)   .000        .000        .000        .000
```

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                    (AC-FT)        0.          0.          0.          0.

                    CUMULATIVE AREA =     .37 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      6.4
                      FOR PLAN 1, RATIO =  .50

     TOTAL RAINFALL =    1.93, TOTAL LOSS =    1.92, TOTAL EXCESS =     .01

     PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+    (CFS)         (HR)                  6-HR        24-HR        72-HR      24.92-HR
+      5.         12.25        (CFS)
                                            0.          0.           0.           0.
                              (INCHES)    .006        .006         .006         .006
                              (AC-FT)       0.          0.           0.           0.

                    CUMULATIVE AREA =     .37 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      6.4
                      FOR PLAN 1, RATIO =  .61

     TOTAL RAINFALL =    2.35, TOTAL LOSS =    2.23, TOTAL EXCESS =     .12

     PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+    (CFS)         (HR)                  6-HR        24-HR        72-HR      24.92-HR
+     60.         12.17        (CFS)
                                            4.          1.           1.           1.
                              (INCHES)    .093        .093         .093         .093
                              (AC-FT)       2.          2.           2.           2.

                    CUMULATIVE AREA =     .37 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      6.4
                      FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.86, TOTAL LOSS =    3.07, TOTAL EXCESS =     .79

     PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+    (CFS)         (HR)                  6-HR        24-HR        72-HR      24.92-HR
+    287.         12.08        (CFS)
                                           24.          6.           6.           6.
                              (INCHES)    .597        .597         .597         .597
                              (AC-FT)      12.         12.          12.          12.

                    CUMULATIVE AREA =     .37 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
268 KK    *    CP6.4   *
          *            *
          **************
                    COMBINE ROUTED FLOW FROM BASIN 6.12, ROUTED FLOW FROM BASIN 6.11, AND BASIN
270 HC         HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                 ***
     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP6.4
                      FOR PLAN 1, RATIO =  .34

     PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+    (CFS)         (HR)                  6-HR        24-HR        72-HR      24.92-HR
+      9.         12.50        (CFS)
                                            3.          1.           1.           1.
                              (INCHES)    .002        .003         .003         .003
                              (AC-FT)       1.          2.           2.           2.

                    CUMULATIVE AREA =   10.18 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP6.4
```

FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 433.	12.58		74.	19.	18.	18.
		(INCHES)	.068	.069	.069	.069
		(AC-FT)	37.	38.	38.	38.

CUMULATIVE AREA = 10.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP6.4
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1342.	12.50		211.	53.	51.	51.
		(INCHES)	.193	.195	.195	.195
		(AC-FT)	105.	106.	106.	106.

CUMULATIVE AREA = 10.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP6.4
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 4857.	12.50		770.	193.	186.	186.
		(INCHES)	.703	.706	.706	.706
		(AC-FT)	382.	383.	383.	383.

CUMULATIVE AREA = 10.18 SQ MI

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              **************
              *            *
271 KK        *     6R4    *
              *            *
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ROUTE FLOW TO OFF-SITE DETENTION BASIN B1

HYDROGRAPH ROUTING DATA

```
274 RL        ROUTING LOSSES
                   QLOSS        .00  INITIAL LOSS
                   CLOSS        .00  ADDITIONAL FRACTION LOST
                  PERCRT      10.00  CHANNEL PERCOLATION RATE
                  ELVINV     815.00  INVERT ELEVATION

273 RS        STORAGE ROUTING
                  NSTPS          2  NUMBER OF SUBREACHES
                   ITYP       FLOW  TYPE OF INITIAL CONDITION
                  RSVRIC     -1.00  INITIAL CONDITION
                       X        .00  WORKING R AND D COEFFICIENT

275 RC        NORMAL DEPTH CHANNEL
                    ANL       .030  LEFT OVERBANK N-VALUE
                   ANCH       .030  MAIN CHANNEL N-VALUE
                    ANR       .030  RIGHT OVERBANK N-VALUE
                  RLNTH      1232.  REACH LENGTH
                    SEL      .0020  ENERGY SLOPE
                  ELMAX      821.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

		--- LEFT OVERBANK ---			+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---	
277 RY	ELEVATION	821.00	821.00	821.00	815.50	815.50	821.00	821.00	821.00
276 RX	DISTANCE	.00	100.00	200.00	216.50	356.50	373.00	473.00	573.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	1.15	2.32	3.50	4.70	5.91	7.13	8.37	9.63	10.89
OUTFLOW	.00	39.46	125.49	247.08	399.80	580.97	788.73	1021.72	1278.88	1559.34
ELEVATION	815.50	815.79	816.08	816.37	816.66	816.95	817.24	817.53	817.82	818.11
STORAGE	12.17	13.47	14.78	16.10	17.44	18.79	20.16	21.54	22.94	24.35
OUTFLOW	1862.41	2187.51	2534.14	2901.88	3290.38	3699.31	4128.42	4577.46	5046.22	5534.56
ELEVATION	818.39	818.68	818.97	819.26	819.55	819.84	820.13	820.42	820.71	821.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 400. TO 5535.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

*** *** *** *** ***

HYDROGRAPH AT STATION 6R4
FOR PLAN 1, RATIO = .34

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	1.	0.	0.	0.
+ 4.	12.83	(INCHES)	.001	.002	.002	.002
		(AC-FT)	1.	1.	1.	1.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	0.	0.	0.	0.
0.	12.83				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	815.51	815.50	815.50	815.50
815.54	12.83				

CUMULATIVE AREA = 10.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R4
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	64.	16.	16.	16.
+ 394.	12.67	(INCHES)	.059	.059	.059	.059
		(AC-FT)	32.	32.	32.	32.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	1.	0.	0.	0.
2.	12.67				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	815.77	815.57	815.57	815.57
816.67	12.67				

CUMULATIVE AREA = 10.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R4
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	199.	50.	48.	48.
+ 1296.	12.50	(INCHES)	.181	.182	.182	.182
		(AC-FT)	99.	99.	99.	99.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	1.	0.	0.	0.
5.	12.50				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	816.01	815.63	815.62	815.62
817.85	12.50				

CUMULATIVE AREA = 10.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R4
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	753.	189.	182.	182.
+ 4807.	12.58	(INCHES)	.688	.689	.689	.689

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                    (AC-FT)      374.        374.        374.        374.

 PEAK STORAGE   TIME                      MAXIMUM AVERAGE STORAGE
                                    6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      11.      12.58                  2.          1.          1.          1.

  PEAK STAGE    TIME                      MAXIMUM AVERAGE STAGE
                                    6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   820.58      12.58               816.59      815.78      815.77      815.77

                    CUMULATIVE AREA =   10.18 SQ MI


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            *            *
 278 KK     *     6.13   *
            *            *
            **************
                    BASIN 6.13
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=      .96  Lca=       .52   S=   75.0  Kn= .060  LAG=  29.2
                     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

 283 BA         SUBBASIN CHARACTERISTICS
                      TAREA         .44  SUBBASIN AREA

                PRECIPITATION DATA

 143 PB               STORM        3.86  BASIN TOTAL PRECIPITATION

 143 PI           INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                      .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00

 284 LG         GREEN AND AMPT LOSS RATE
                      STRTL         .46  STARTING LOSS
                        DTH         .34  MOISTURE DEFICIT
                       PSIF        4.20  WETTING FRONT SUCTION
                      XKSAT         .58  HYDRAULIC CONDUCTIVITY
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 279 UI         INPUT UNITGRAPH,  15 ORDINATES,  VOLUME = 1.33
                     78.0      260.0      423.0      568.0      895.0      771.0      564.0      409.0      233.0      132.0
                     84.0       39.0       24.0       24.0       24.0
                                                                  ***

    TOTAL RAINFALL =    3.86, TOTAL LOSS =    3.14, TOTAL EXCESS =     .72

 PEAK FLOW     TIME                      MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     24.92-HR
+   (CFS)      (HR)
                          (CFS)
+    450.      12.25                 45.         11.         11.         11.
                       (INCHES)     .955        .955        .955        .955
                        (AC-FT)     22.         22.         22.         22.

                    CUMULATIVE AREA =     .44 SQ MI
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***          ***          ***          ***          ***

                HYDROGRAPH AT STATION     6.13
                 FOR PLAN 1, RATIO =  .34

TOTAL RAINFALL =   1.31, TOTAL LOSS =   1.31, TOTAL EXCESS =    .00

 PEAK FLOW     TIME                      MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR      24-HR      72-HR    24.92-HR
                                  (CFS)
+     0.        .00                   0.         0.         0.         0.
                                 (INCHES)      .000       .000       .000       .000
                                  (AC-FT)        0.         0.         0.         0.

                CUMULATIVE AREA =     .44 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION     6.13
                 FOR PLAN 1, RATIO =  .50

TOTAL RAINFALL =   1.93, TOTAL LOSS =   1.93, TOTAL EXCESS =    .00

 PEAK FLOW .   TIME                      MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR      24-HR      72-HR    24.92-HR
                                  (CFS)
+     0.        .00                   0.         0.         0.         0.
                                 (INCHES)      .000       .000       .000       .000
                                  (AC-FT)        0.         0.         0.         0.

                CUMULATIVE AREA =     .44 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION     6.13
                 FOR PLAN 1, RATIO =  .61

TOTAL RAINFALL =   2.35, TOTAL LOSS =   2.27, TOTAL EXCESS =    .08

 PEAK FLOW     TIME                      MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR      24-HR      72-HR    24.92-HR
                                  (CFS)
+    65.      12.33                   5.         1.         1.         1.
                                 (INCHES)      .108       .108       .108       .108
                                  (AC-FT)        3.         3.         3.         3.

                CUMULATIVE AREA =     .44 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION     6.13
                 FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL =   3.86, TOTAL LOSS =   3.14, TOTAL EXCESS =    .72

 PEAK FLOW     TIME                      MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR      24-HR      72-HR    24.92-HR
                                  (CFS)
+   450.      12.25                  45.        11.        11.        11.
                                 (INCHES)      .955       .955       .955       .955
                                  (AC-FT)       22.        22.        22.        22.

                CUMULATIVE AREA =     .44 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
288 KK      *        B1  *
            *            *
            **************
                COMBINE Q FROM BASINS  6.13 AND ROUTED FLOW FROM CP6.4

290 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          2  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

291 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***
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HYDROGRAPH AT STATION B1
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .34

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		0615	76	0.	1		1230	151	3.	1		1845	226	0.
1		0005	2	0.	1		0620	77	0.	1		1235	152	3.	1		1850	227	0.
1		0010	3	0.	1		0625	78	0.	1		1240	153	4.	1		1855	228	0.
1		0015	4	0.	1		0630	79	0.	1		1245	154	4.	1		1900	229	0.
1		0020	5	0.	1		0635	80	0.	1		1250	155	4.	1		1905	230	0.
1		0025	6	0.	1		0640	81	0.	1		1255	156	4.	1		1910	231	0.
1		0030	7	0.	1		0645	82	0.	1		1300	157	4.	1		1915	232	0.
1		0035	8	0.	1		0650	83	0.	1		1305	158	4.	1		1920	233	0.
1		0040	9	0.	1		0655	84	0.	1		1310	159	4.	1		1925	234	0.
1		0045	10	0.	1		0700	85	0.	1		1315	160	3.	1		1930	235	0.
1		0050	11	0.	1		0705	86	0.	1		1320	161	3.	1		1935	236	0.
1		0055	12	0.	1		0710	87	0.	1		1325	162	3.	1		1940	237	0.
1		0100	13	0.	1		0715	88	0.	1		1330	163	3.	1		1945	238	0.
1		0105	14	0.	1		0720	89	0.	1		1335	164	2.	1		1950	239	0.
1		0110	15	0.	1		0725	90	0.	1		1340	165	2.	1		1955	240	0.
1		0115	16	0.	1		0730	91	0.	1		1345	166	2.	1		2000	241	0.
1		0120	17	0.	1		0735	92	0.	1		1350	167	2.	1		2005	242	0.
1		0125	18	0.	1		0740	93	0.	1		1355	168	2.	1		2010	243	0.
1		0130	19	0.	1		0745	94	0.	1		1400	169	2.	1		2015	244	0.
1		0135	20	0.	1		0750	95	0.	1		1405	170	1.	1		2020	245	0.
1		0140	21	0.	1		0755	96	0.	1		1410	171	1.	1		2025	246	0.
1		0145	22	0.	1		0800	97	0.	1		1415	172	1.	1		2030	247	0.
1		0150	23	0.	1		0805	98	0.	1		1420	173	1.	1		2035	248	0.
1		0155	24	0.	1		0810	99	0.	1		1425	174	1.	1		2040	249	0.
1		0200	25	0.	1		0815	100	0.	1		1430	175	1.	1		2045	250	0.
1		0205	26	0.	1		0820	101	0.	1		1435	176	1.	1		2050	251	0.
1		0210	27	0.	1		0825	102	0.	1		1440	177	1.	1		2055	252	0.
1		0215	28	0.	1		0830	103	0.	1		1445	178	1.	1		2100	253	0.
1		0220	29	0.	1		0835	104	0.	1		1450	179	1.	1		2105	254	0.
1		0225	30	0.	1		0840	105	0.	1		1455	180	1.	1		2110	255	0.
1		0230	31	0.	1		0845	106	0.	1		1500	181	1.	1		2115	256	0.
1		0235	32	0.	1		0850	107	0.	1		1505	182	1.	1		2120	257	0.
1		0240	33	0.	1		0855	108	0.	1		1510	183	1.	1		2125	258	0.
1		0245	34	0.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	0.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	0.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	0.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	0.	1		0920	113	0.	1		1535	188	0.	1		2150	263	0.
1		0310	39	0.	1		0925	114	0.	1		1540	189	0.	1		2155	264	0.
1		0315	40	0.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	0.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	0.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	0.	1		0945	118	0.	1		1600	193	0.	1		2215	268	0.
1		0335	44	0.	1		0950	119	0.	1		1605	194	0.	1		2220	269	0.
1		0340	45	0.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	0.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	0.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	0.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	0.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	0.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	0.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	0.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	0.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	0.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	0.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	0.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	0.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	0.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	0.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	0.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	0.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	0.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	0.	1		1125	138	1.	1		1740	213	0.	1		2355	288	0.
1		0515	64	0.	1		1130	139	1.	1		1745	214	0.	2		0000	289	0.
1		0520	65	0.	1		1135	140	1.	1		1750	215	0.	2		0005	290	0.
1		0525	66	0.	1		1140	141	1.	1		1755	216	0.	2		0010	291	0.
1		0530	67	0.	1		1145	142	1.	1		1800	217	0.	2		0015	292	0.
1		0535	68	0.	1		1150	143	1.	1		1805	218	0.	2		0020	293	0.
1		0540	69	0.	1		1155	144	1.	1		1810	219	0.	2		0025	294	0.
1		0545	70	0.	1		1200	145	1.	1		1815	220	0.	2		0030	295	0.
1		0550	71	0.	1		1205	146	1.	1		1820	221	0.	2		0035	296	0.
1		0555	72	0.	1		1210	147	2.	1		1825	222	0.	2		0040	297	0.
1		0600	73	0.	1		1215	148	2.	1		1830	223	0.	2		0045	298	0.
1		0605	74	0.	1		1220	149	2.	1		1835	224	0.	2		0050	299	0.
1		0610	75	0.	1		1225	150	3.	1		1840	225	0.	2		0055	300	0.

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 4.	12.83	(CFS)	1.	0.	0.	0.
		(INCHES)	.001	.002	.002	.002
		(AC-FT)	1.	1.	1.	1.

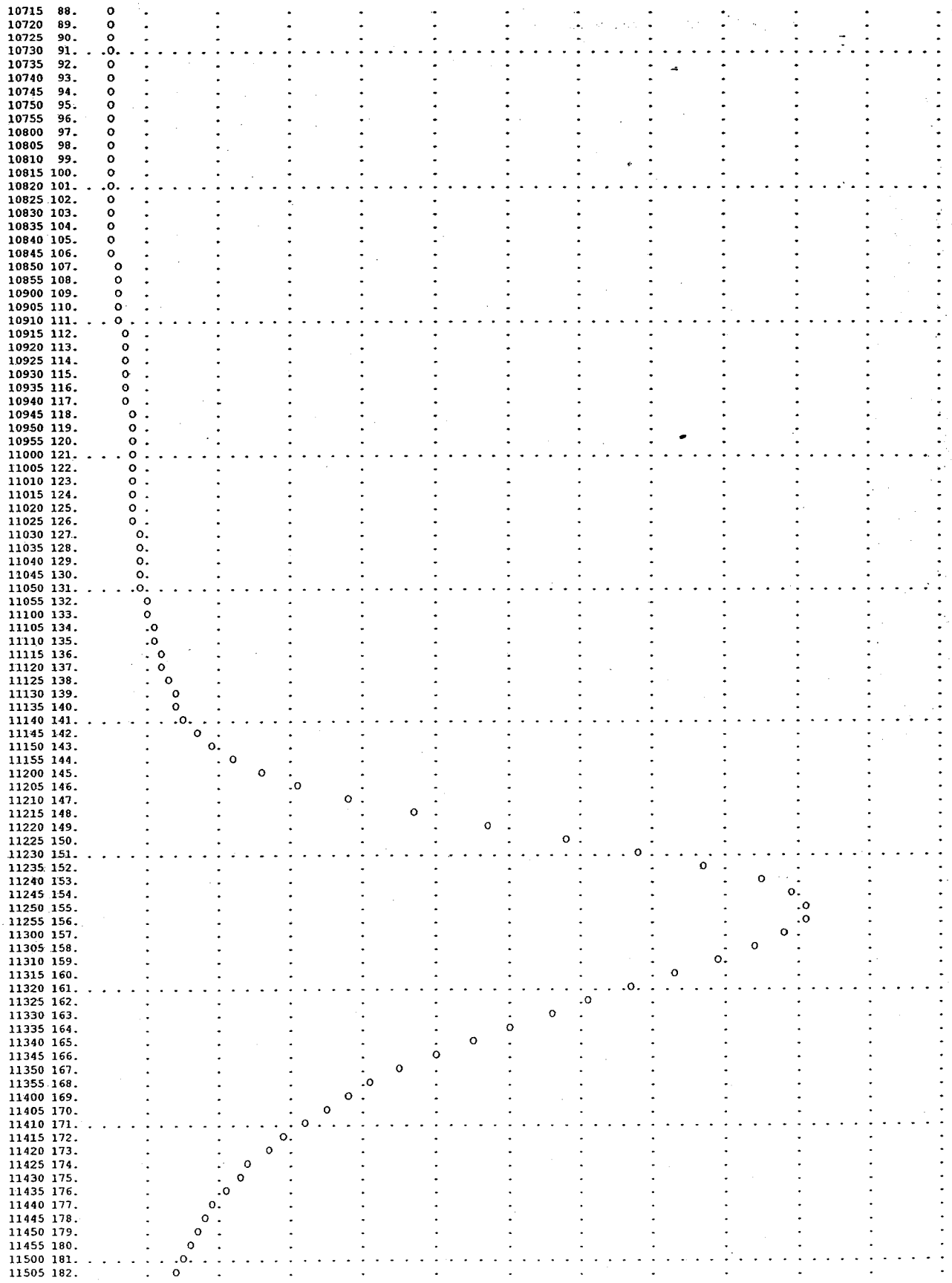
CUMULATIVE AREA = 10.62 SQ MI

1

STATION B1

(O) OUTFLOW

DAHRMN	PER	.0	.4	.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.4	.0
10000	10													
10005	20													
10010	30													
10015	40													
10020	50													
10025	60													
10030	70													
10035	80													
10040	90													
10045	100													
10050	110													
10055	12.0													
10100	13.0													
10105	14.0													
10110	15.0													
10115	16.0													
10120	17. O													
10125	18. O													
10130	19. O													
10135	20. O													
10140	21. O													
10145	22. O													
10150	23. O													
10155	24. O													
10200	25. O													
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													
10640	81. O													
10645	82. O													
10650	83. O													
10655	84. O													
10700	85. O													
10705	86. O													
10710	87. O													


10715 88.
10720 89.
10725 90.
10730 91.
10735 92.
10740 93.
10745 94.
10750 95.
10755 96.
10800 97.
10805 98.
10810 99.
10815 100.
10820 101.
10825 102.
10830 103.
10835 104.
10840 105.
10845 106.
10850 107.
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10900 109.
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10930 115.
10935 116.
10940 117.
10945 118.
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10955 120.
11000 121.
11005 122.
11010 123.
11015 124.
11020 125.
11025 126.
11030 127.
11035 128.
11040 129.
11045 130.
11050 131.
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11100 133.
11105 134.
11110 135.
11115 136.
11120 137.
11125 138.
11130 139.
11135 140.
11140 141.
11145 142.
11150 143.
11155 144.
11200 145.
11205 146.
11210 147.
11215 148.
11220 149.
11225 150.
11230 151.
11235 152.
11240 153.
11245 154.
11250 155.
11255 156.
11300 157.
11305 158.
11310 159.
11315 160.
11320 161.
11325 162.
11330 163.
11335 164.
11340 165.
11345 166.
11350 167.
11355 168.
11400 169.
11405 170.
11410 171.
11415 172.
11420 173.
11425 174.
11430 175.
11435 176.
11440 177.
11445 178.
11450 179.
11455 180.
11500 181.
11505 182.

11510 183.
11515 184.
11520 185.
11525 186.
11530 187.
11535 188.
11540 189.
11545 190.
11550 191.
11555 192.
11600 193.
11605 194.
11610 195.
11615 196.
11620 197.
11625 198.
11630 199.
11635 200.
11640 201.
11645 202.
11650 203.
11655 204.
11700 205.
11705 206.
11710 207.
11715 208.
11720 209.
11725 210.
11730 211.
11735 212.
11740 213.
11745 214.
11750 215.
11755 216.
11800 217.
11805 218.
11810 219.
11815 220.
11820 221.
11825 222.
11830 223.
11835 224.
11840 225.
11845 226.
11850 227.
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11905 230.
11910 231.
11915 232.
11920 233.
11925 234.
11930 235.
11935 236.
11940 237.
11945 238.
11950 239.
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12020 245.
12025 246.
12030 247.
12035 248.
12040 249.
12045 250.
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12110 255.
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12120 257.
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12130 259.
12135 260.
12140 261.
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12150 263.
12155 264.
12200 265.
12205 266.
12210 267.
12215 268.
12220 269.
12225 270.
12230 271.
12235 272.
12240 273.
12245 274.
12250 275.
12255 276.
12300 277.

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12305 278.  O
12310 279.  O
12315 280.  O
12320 281. .O.
12325 282.  O
12330 283.  O
12335 284.  O
12340 285.  O
12345 286.  O
12350 287.  O
12355 288.  O
20000 289.  O
20005 290.  O
20010 291. .O.
20015 292.  O
20020 293.  O
20025 294.  O
20030 295.  O
20035 296.  O
20040 297.  O
20045 298. O
20050 299. O
20055 300.-O-------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1
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HYDROGRAPH AT STATION B1
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .50

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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		0615	76	0.	*	1		1230	151	333.	*	1		1845	226	0.
1		0005	2	0.	*	1		0620	77	0.	*	1		1235	152	384.	*	1		1850	227	0.
1		0010	3	0.	*	1		0625	78	0.	*	1		1240	153	394.	*	1		1855	228	0.
1		0015	4	0.	*	1		0630	79	0.	*	1		1245	154	365.	*	1		1900	229	0.
1		0020	5	0.	*	1		0635	80	0.	*	1		1250	155	319.	*	1		1905	230	0.
1		0025	6	0.	*	1		0640	81	0.	*	1		1255	156	271.	*	1		1910	231	0.
1		0030	7	0.	*	1		0645	82	0.	*	1		1300	157	235.	*	1		1915	232	0.
1		0035	8	0.	*	1		0650	83	0.	*	1		1305	158	214.	*	1		1920	233	0.
1		0040	9	0.	*	1		0655	84	0.	*	1		1310	159	198.	*	1		1925	234	0.
1		0045	10	0.	*	1		0700	85	0.	*	1		1315	160	184.	*	1		1930	235	0.
1		0050	11	0.	*	1		0705	86	0.	*	1		1320	161	171.	*	1		1935	236	0.
1		0055	12	0.	*	1		0710	87	0.	*	1		1325	162	155.	*	1		1940	237	0.
1		0100	13	0.	*	1		0715	88	0.	*	1		1330	163	137.	*	1		1945	238	0.
1		0105	14	0.	*	1		0720	89	0.	*	1		1335	164	119.	*	1		1950	239	0.
1		0110	15	0.	*	1		0725	90	0.	*	1		1340	165	105.	*	1		1955	240	0.
1		0115	16	0.	*	1		0730	91	0.	*	1		1345	166	92.	*	1		2000	241	0.
1		0120	17	0.	*	1		0735	92	0.	*	1		1350	167	80.	*	1		2005	242	0.
1		0125	18	0.	*	1		0740	93	0.	*	1		1355	168	67.	*	1		2010	243	0.
1		0130	19	0.	*	1		0745	94	0.	*	1		1400	169	55.	*	1		2015	244	0.
1		0135	20	0.	*	1		0750	95	0.	*	1		1405	170	44.	*	1		2020	245	0.
1		0140	21	0.	*	1		0755	96	0.	*	1		1410	171	34.	*	1		2025	246	0.
1		0145	22	0.	*	1		0800	97	0.	*	1		1415	172	29.	*	1		2030	247	0.
1		0150	23	0.	*	1		0805	98	0.	*	1		1420	173	26.	*	1		2035	248	0.
1		0155	24	0.	*	1		0810	99	0.	*	1		1425	174	23.	*	1		2040	249	0.
1		0200	25	0.	*	1		0815	100	0.	*	1		1430	175	20.	*	1		2045	250	0.
1		0205	26	0.	*	1		0820	101	0.	*	1		1435	176	17.	*	1		2050	251	0.
1		0210	27	0.	*	1		0825	102	0.	*	1		1440	177	15.	*	1		2055	252	0.
1		0215	28	0.	*	1		0830	103	0.	*	1		1445	178	13.	*	1		2100	253	0.
1		0220	29	0.	*	1		0835	104	0.	*	1		1450	179	11.	*	1		2105	254	0.
1		0225	30	0.	*	1		0840	105	0.	*	1		1455	180	9.	*	1		2110	255	0.
1		0230	31	0.	*	1		0845	106	0.	*	1		1500	181	8.	*	1		2115	256	0.
1		0235	32	0.	*	1		0850	107	0.	*	1		1505	182	7.	*	1		2120	257	0.
1		0240	33	0.	*	1		0855	108	0.	*	1		1510	183	6.	*	1		2125	258	0.
1		0245	34	0.	*	1		0900	109	0.	*	1		1515	184	5.	*	1		2130	259	0.
1		0250	35	0.	*	1		0905	110	0.	*	1		1520	185	4.	*	1		2135	260	0.
1		0255	36	0.	*	1		0910	111	0.	*	1		1525	186	3.	*	1		2140	261	0.
1		0300	37	0.	*	1		0915	112	0.	*	1		1530	187	3.	*	1		2145	262	0.
1		0305	38	0.	*	1		0920	113	0.	*	1		1535	188	2.	*	1		2150	263	0.
1		0310	39	0.	*	1		0925	114	0.	*	1		1540	189	2.	*	1		2155	264	0.
1		0315	40	0.	*	1		0930	115	0.	*	1		1545	190	2.	*	1		2200	265	0.
1		0320	41	0.	*	1		0935	116	0.	*	1		1550	191	1.	*	1		2205	266	0.
1		0325	42	0.	*	1		0940	117	0.	*	1		1555	192	1.	*	1		2210	267	0.
1		0330	43	0.	*	1		0945	118	0.	*	1		1600	193	1.	*	1		2215	268	0.
1		0335	44	0.	*	1		0950	119	0.	*	1		1605	194	1.	*	1		2220	269	0.
1		0340	45	0.	*	1		0955	120	0.	*	1		1610	195	1.	*	1		2225	270	0.
1		0345	46	0.	*	1		1000	121	0.	*	1		1615	196	1.	*	1		2230	271	0.
1		0350	47	0.	*	1		1005	122	0.	*	1		1620	197	1.	*	1		2235	272	0.
1		0355	48	0.	*	1		1010	123	0.	*	1		1625	198	1.	*	1		2240	273	0.
1		0400	49	0.	*	1		1015	124	0.	*	1		1630	199	1.	*	1		2245	274	0.
1		0405	50	0.	*	1		1020	125	0.	*	1		1635	200	1.	*	1		2250	275	0.
1		0410	51	0.	*	1		1025	126	1.	*	1		1640	201	1.	*	1		2255	276	0.
1		0415	52	0.	*	1		1030	127	1.	*	1		1645	202	1.	*	1		2300	277	0.
1		0420	53	0.	*	1		1035	128	1.	*	1		1650	203	0.	*	1		2305	278	0.
1		0425	54	0.	*	1		1040	129	1.	*	1		1655	204	0.	*	1		2310	279	0.
1		0430	55	0.	*	1		1045	130	1.	*	1		1700	205	0.	*	1		2315	280	0.
1		0435	56	0.	*	1		1050	131	1.	*	1		1705	206	0.	*	1		2320	281	0.
1		0440	57	0.	*	1		1055	132	1.	*	1		1710	207	0.	*	1		2325	282	0.
1		0445	58	0.	*	1		1100	133	1.	*	1		1715	208	0.	*	1		2330	283	0.
1		0450	59	0.	*	1		1105	134	1.	*	1		1720	209	0.	*	1		2335	284	0.
1		0455	60	0.	*	1		1110	135	1.	*	1		1725	210	0.	*	1		2340	285	0.

1	0500	61	0.	*	1	1115	136	1.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	0.	*	1	1120	137	1.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	0.	*	1	1125	138	1.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	0.	*	1	1130	139	1.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	0.	*	1	1135	140	1.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	0.	*	1	1140	141	1.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	0.	*	1	1145	142	1.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	0.	*	1	1150	143	1.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	0.	*	1	1155	144	1.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	0.	*	1	1200	145	2.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	0.	*	1	1205	146	5.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	0.	*	1	1210	147	15.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	0.	*	1	1215	148	49.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	0.	*	1	1220	149	133.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	0.	*	1	1225	150	240.	*	1	1840	225	0.	*	2	0055	300	0.
				*					*					*				

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 394.	12.67	(CFS)	64.	16.	16.	16.
		(INCHES)	.056	.057	.057	.057
		(AC-FT)	32.	32.	32.	32.

CUMULATIVE AREA = 10.62 SQ MI

1

STATION B1

(O) OUTFLOW

DAHRMN	PER	0.	40.	80.	120.	160.	200.	240.	280.	320.	360.	400.	0.	0.
10000	10													
10005	20													
10010	30													
10015	40													
10020	50													
10025	60													
10030	70													
10035	80													
10040	90													
10045	100													
10050	110													
10055	120													
10100	130													
10105	140													
10110	150													
10115	160													
10120	170													
10125	180													
10130	190													
10135	200													
10140	210													
10145	220													
10150	230													
10155	240													
10200	250													
10205	260													
10210	270													
10215	280													
10220	290													
10225	300													
10230	310													
10235	320													
10240	330													
10245	340													
10250	350													
10255	360													
10300	370													
10305	380													
10310	390													
10315	400													
10320	410													
10325	420													
10330	430													
10335	440													
10340	450													
10345	460													
10350	470													
10355	480													
10400	490													
10405	500													
10410	510													
10415	520													
10420	530													
10425	540													
10430	550													
10435	560													
10440	570													
10445	580													
10450	590													
10455	600													
10500	610													
10505	620													

```
10510  630
10515  640
10520  650
10525  660
10530  670
10535  680
10540  690
10545  700
10550  710 . . . . . .
10555  720
10600  730
10605  740
10610  750
10615  760
10620  770
10625  780
10630  790
10635  800
10640  810 . . . . . .
10645  820
10650  830
10655  840
10700  850
10705  860
10710  870
10715  880
10720  890
10725  900
10730  910 . . . . . .
10735  920
10740  930
10745  940
10750  950
10755  960
10800  970
10805  980
10810  990
10815 1000
10820 1010 . . . . . .
10825 1020
10830 1030
10835 1040
10840 1050
10845 1060
10850 1070
10855 1080
10900 1090
10905 1100
10910 1110 . . . . . .
10915 1120
10920 1130
10925 1140
10930 1150
10935 1160
10940 1170
10945 1180
10950 1190
10955 1200
11000 1210 . . . . . .
11005 1220
11010 1230
11015 1240
11020 1250
11025 1260
11030 1270
11035 1280
11040 1290
11045 1300
11050 1310 . . . . . .
11055 1320
11100 1330
11105 1340
11110 1350
11115 1360
11120 1370
11125 1380
11130 1390
11135 1400
11140 1410 . . . . . .
11145 1420
11150 1430
11155 1440
11200 145.O
11205 146.O
11210 147.   O
11215 148.     O
11220 149.
11225 150.
11230 151. . . . . .
11235 152.
11240 153.
11245 154.
11250 155.
11255 156.
11300 157.
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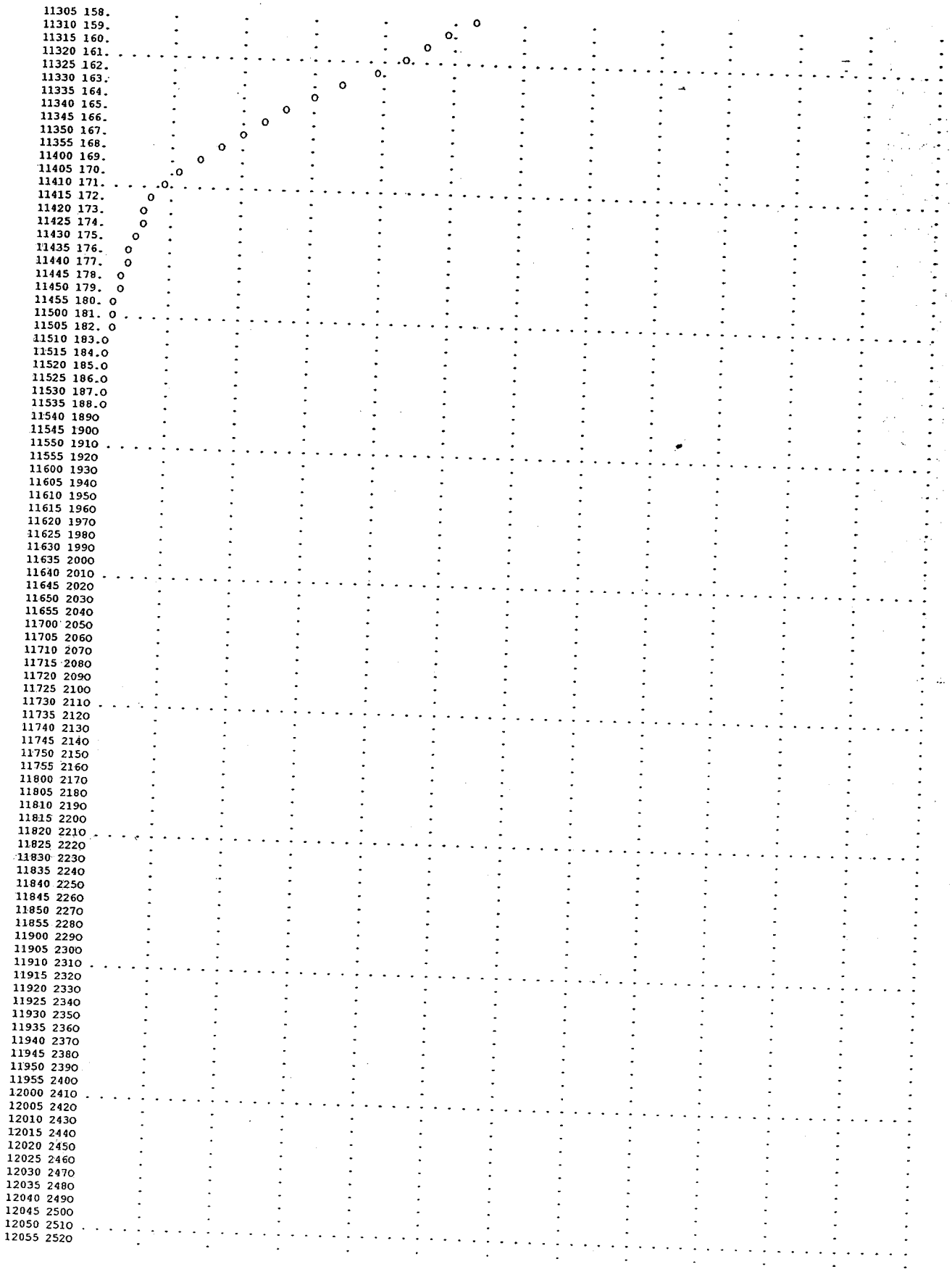
11305 158.
11310 159.
11315 160.
11320 161.
11325 162.
11330 163.
11335 164.
11340 165.
11345 166.
11350 167.
11355 168.
11400 169.
11405 170.
11410 171.
11415 172.
11420 173.
11425 174.
11430 175.
11435 176.
11440 177.
11445 178.
11450 179.
11455 180.
11500 181.
11505 182.
11510 183.
11515 184.
11520 185.
11525 186.
11530 187.
11535 188.
11540 189
11545 190
11550 191
11555 192
11600 193
11605 194
11610 195
11615 196
11620 197
11625 198
11630 199
11635 200
11640 201
11645 202
11650 203
11655 204
11700 205
11705 206
11710 207
11715 208
11720 209
11725 210
11730 211
11735 212
11740 213
11745 214
11750 215
11755 216
11800 217
11805 218
11810 219
11815 220
11820 221
11825 222
11830 223
11835 224
11840 225
11845 226
11850 227
11855 228
11900 229
11905 230
11910 231
11915 232
11920 233
11925 234
11930 235
11935 236
11940 237
11945 238
11950 239
11955 240
12000 241
12005 242
12010 243
12015 244
12020 245
12025 246
12030 247
12035 248
12040 249
12045 250
12050 251
12055 252

```
12100 2530        .         .         .         .         .         .         .         .         .         .         .         .
12105 2540        .         .         .         .         .         .         .         .         .         .         .         .
12110 2550        .         .         .         .         .         .         .         .         .         .         .         .
12115 2560        .         .         .         .         .         .         .         .         .         .         .         .
12120 2570        .         .         .         .         .         .         .         .         .         .         .         .
12125 2580        .         .         .         .         .         .         .         .         .         .         .         .
12130 2590        .         .         .         .         .         .         .         .         .         .         .         .
12135 2600        .         .         .         .         .         .         .         .         .         .         .         .
12140 2610 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 2620        .         .         .         .         .         .         .         .         .         .         .         .
12150 2630        .         .         .         .         .         .         .         .         .         .         .         .
12155 2640        .         .         .         .         .         .         .         .         .         .         .         .
12200 2650        .         .         .         .         .         .         .         .         .         .         .         .
12205 2660        .         .         .         .         .         .         .         .         .         .         .         .
12210 2670        .         .         .         .         .         .         .         .         .         .         .         .
12215 2680        .         .         .         .         .         .         .         .         .         .         .         .
12220 2690        .         .         .         .         .         .         .         .         .         .         .         .
12225 2700        .         .         .         .         .         .         .         .         .         .         .         .
12230 2710 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 2720        .         .         .         .         .         .         .         .         .         .         .         .
12240 2730        .         .         .         .         .         .         .         .         .         .         .         .
12245 2740        .         .         .         .         .         .         .         .         .         .         .         .
12250 2750        .         .         .         .         .         .         .         .         .         .         .         .
12255 2760        .         .         .         .         .         .         .         .         .         .         .         .
12300 2770        .         .         .         .         .         .         .         .         .         .         .         .
12305 2780        .         .         .         .         .         .         .         .         .         .         .         .
12310 2790        .         .         .         .         .         .         .         .         .         .         .         .
12315 2800        .         .         .         .         .         .         .         .         .         .         .         .
12320 2810 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 2820        .         .         .         .         .         .         .         .         .         .         .         .
12330 2830        .         .         .         .         .         .         .         .         .         .         .         .
12335 2840        .         .         .         .         .         .         .         .         .         .         .         .
12340 2850        .         .         .         .         .         .         .         .         .         .         .         .
12345 2860        .         .         .         .         .         .         .         .         .         .         .         .
12350 2870        .         .         .         .         .         .         .         .         .         .         .         .
12355 2880        .         .         .         .         .         .         .         .         .         .         .         .
20000 2890        .         .         .         .         .         .         .         .         .         .         .         .
20005 2900        .         .         .         .         .         .         .         .         .         .         .         .
20010 2910 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
20015 2920        .         .         .         .         .         .         .         .         .         .         .         .
20020 2930        .         .         .         .         .         .         .         .         .         .         .         .
20025 2940        .         .         .         .         .         .         .         .         .         .         .         .
20030 2950        .         .         .         .         .         .         .         .         .         .         .         .
20035 2960        .         .         .         .         .         .         .         .         .         .         .         .
20040 2970        .         .         .         .         .         .         .         .         .         .         .         .
20045 2980        .         .         .         .         .         .         .         .         .         .         .         .
20050 2990        .         .         .         .         .         .         .         .         .         .         .         .
20055 3000---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
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HYDROGRAPH AT STATION B1
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .61

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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		0615	76	0.	*	1		1230	151	1333.	*	1		1845	226	0.
1		0005	2	0.	*	1		0620	77	0.	*	1		1235	152	1299.	*	1		1850	227	0.
1		0010	3	0.	*	1		0625	78	0.	*	1		1240	153	1179.	*	1		1855	228	0.
1		0015	4	0.	*	1		0630	79	0.	*	1		1245	154	1042.	*	1		1900	229	0.
1		0020	5	0.	*	1		0635	80	0.	*	1		1250	155	921.	*	1		1905	230	0.
1		0025	6	0.	*	1		0640	81	0.	*	1		1255	156	813.	*	1		1910	231	0.
1		0030	7	0.	*	1		0645	82	0.	*	1		1300	157	719.	*	1		1915	232	0.
1		0035	8	0.	*	1		0650	83	0.	*	1		1305	158	630.	*	1		1920	233	0.
1		0040	9	0.	*	1		0655	84	0.	*	1		1310	159	545.	*	1		1925	234	0.
1		0045	10	0.	*	1		0700	85	0.	*	1		1315	160	468.	*	1		1930	235	0.
1		0050	11	0.	*	1		0705	86	0.	*	1		1320	161	394.	*	1		1935	236	0.
1		0055	12	0.	*	1		0710	87	0.	*	1		1325	162	335.	*	1		1940	237	0.
1		0100	13	0.	*	1		0715	88	0.	*	1		1330	163	278.	*	1		1945	238	0.
1		0105	14	0.	*	1		0720	89	0.	*	1		1335	164	229.	*	1		1950	239	0.
1		0110	15	0.	*	1		0725	90	0.	*	1		1340	165	194.	*	1		1955	240	0.
1		0115	16	0.	*	1		0730	91	0.	*	1		1345	166	161.	*	1		2000	241	0.
1		0120	17	0.	*	1		0735	92	0.	*	1		1350	167	130.	*	1		2005	242	0.
1		0125	18	0.	*	1		0740	93	0.	*	1		1355	168	107.	*	1		2010	243	0.
1		0130	19	0.	*	1		0745	94	0.	*	1		1400	169	92.	*	1		2015	244	0.
1		0135	20	0.	*	1		0750	95	0.	*	1		1405	170	77.	*	1		2020	245	0.
1		0140	21	0.	*	1		0755	96	0.	*	1		1410	171	63.	*	1		2025	246	0.
1		0145	22	0.	*	1		0800	97	0.	*	1		1415	172	50.	*	1		2030	247	0.
1		0150	23	0.	*	1		0805	98	0.	*	1		1420	173	38.	*	1		2035	248	0.
1		0155	24	0.	*	1		0810	99	0.	*	1		1425	174	31.	*	1		2040	249	0.
1		0200	25	0.	*	1		0815	100	0.	*	1		1430	175	27.	*	1		2045	250	0.
1		0205	26	0.	*	1		0820	101	0.	*	1		1435	176	24.	*	1		2050	251	0.
1		0210	27	0.	*	1		0825	102	0.	*	1		1440	177	21.	*	1		2055	252	0.
1		0215	28	0.	*	1		0830	103	0.	*	1		1445	178	18.	*	1		2100	253	0.
1		0220	29	0.	*	1		0835	104	0.	*	1		1450	179	15.	*	1		2105	254	0.
1		0225	30	0.	*	1		0840	105	0.	*	1		1455	180	13.	*	1		2110	255	0.
1		0230	31	0.	*	1		0845	106	0.	*	1		1500	181	11.	*	1		2115	256	0.
1		0235	32	0.	*	1		0850	107	0.	*	1		1505	182	10.	*	1		2120	257	0.
1		0240	33	0.	*	1		0855	108	0.	*	1		1510	183	8.	*	1		2125	258	0.
1		0245	34	0.	*	1		0900	109	0.	*	1		1515	184	7.	*	1		2130	259	0.
1		0250	35	0.	*	1		0905	110	0.	*	1		1520	185	6.	*	1		2135	260	0.

1	0255	36	0.	*	1	0910	111	0.	*	1	1525	186	5.	*	1	2140	261	0.
1	0300	37	0.	*	1	0915	112	0.	*	1	1530	187	4.	*	1	2145	262	0.
1	0305	38	0.	*	1	0920	113	0.	*	1	1535	188	3.	*	1	2150	263	0.
1	0310	39	0.	*	1	0925	114	1.	*	1	1540	189	3.	*	1	2155	264	0.
1	0315	40	0.	*	1	0930	115	1.	*	1	1545	190	2.	*	1	2200	265	0.
1	0320	41	0.	*	1	0935	116	1.	*	1	1550	191	2.	*	1	2205	266	0.
1	0325	42	0.	*	1	0940	117	1.	*	1	1555	192	2.	*	1	2210	267	0.
1	0330	43	0.	*	1	0945	118	1.	*	1	1600	193	2.	*	1	2215	268	0.
1	0335	44	0.	*	1	0950	119	1.	*	1	1605	194	1.	*	1	2220	269	0.
1	0340	45	0.	*	1	0955	120	1.	*	1	1610	195	1.	*	1	2225	270	0.
1	0345	46	0.	*	1	1000	121	1.	*	1	1615	196	1.	*	1	2230	271	0.
1	0350	47	0.	*	1	1005	122	1.	*	1	1620	197	1.	*	1	2235	272	0.
1	0355	48	0.	*	1	1010	123	1.	*	1	1625	198	1.	*	1	2240	273	0.
1	0400	49	0.	*	1	1015	124	1.	*	1	1630	199	1.	*	1	2245	274	0.
1	0405	50	0.	*	1	1020	125	1.	*	1	1635	200	1.	*	1	2250	275	0.
1	0410	51	0.	*	1	1025	126	1.	*	1	1640	201	1.	*	1	2255	276	0.
1	0415	52	0.	*	1	1030	127	1.	*	1	1645	202	1.	*	1	2300	277	0.
1	0420	53	0.	*	1	1035	128	1.	*	1	1650	203	1.	*	1	2305	278	0.
1	0425	54	0.	*	1	1040	129	1.	*	1	1655	204	1.	*	1	2310	279	0.
1	0430	55	0.	*	1	1045	130	1.	*	1	1700	205	1.	*	1	2315	280	0.
1	0435	56	0.	*	1	1050	131	1.	*	1	1705	206	1.	*	1	2320	281	0.
1	0440	57	0.	*	1	1055	132	1.	*	1	1710	207	1.	*	1	2325	282	0.
1	0445	58	0.	*	1	1100	133	1.	*	1	1715	208	1.	*	1	2330	283	0.
1	0450	59	0.	*	1	1105	134	1.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	0.	*	1	1110	135	1.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	0.	*	1	1115	136	1.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	0.	*	1	1120	137	1.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	0.	*	1	1125	138	1.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	0.	*	1	1130	139	1.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	0.	*	1	1135	140	1.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	0.	*	1	1140	141	1.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	0.	*	1	1145	142	1.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	0.	*	1	1150	143	4.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	0.	*	1	1155	144	12.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	0.	*	1	1200	145	37.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	0.	*	1	1205	146	130.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	0.	*	1	1210	147	347.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	0.	*	1	1215	148	641.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	0.	*	1	1220	149	958.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	0.	*	1	1225	150	1213.	*	1	1840	225	0.	*	2	0055	300	0.

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 1333.	12.50	(CFS)	204.	51.	49.	49.
		(INCHES)	.178	.179	.179	.179
		(AC-FT)	101.	102.	102.	102.

CUMULATIVE AREA = 10.62 SQ MI

1

STATION B1

(O) OUTFLOW

DAHRMN	PER	0.	200.	400.	600.	800.	1000.	1200.	1400.	0.	0.	0.	0.	0.
10000	10													
10005	20													
10010	30													
10015	40													
10020	50													
10025	60													
10030	70													
10035	80													
10040	90													
10045	100													
10050	110													
10055	120													
10100	130													
10105	140													
10110	150													
10115	160													
10120	170													
10125	180													
10130	190													
10135	200													
10140	210													
10145	220													
10150	230													
10155	240													
10200	250													
10205	260													
10210	270													
10215	280													
10220	290													
10225	300													
10230	310													
10235	320													
10240	330													
10245	340													
10250	350													
10255	360													
10300	370													

10305 380
10310 390
10315 400
10320 410
10325 420
10330 430
10335 440
10340 450
10345 460
10350 470
10355 480
10400 490
10405 500
10410 510
10415 520
10420 530
10425 540
10430 550
10435 560
10440 570
10445 580
10450 590
10455 600
10500 610
10505 620
10510 630
10515 640
10520 650
10525 660
10530 670
10535 680
10540 690
10545 700
10550 710
10555 720
10600 730
10605 740
10610 750
10615 760
10620 770
10625 780
10630 790
10635 800
10640 810
10645 820
10650 830
10655 840
10700 850
10705 860
10710 870
10715 880
10720 890
10725 900
10730 910
10735 920
10740 930
10745 940
10750 950
10755 960
10800 970
10805 980
10810 990
10815 1000
10820 1010
10825 1020
10830 1030
10835 1040
10840 1050
10845 1060
10850 1070
10855 1080
10900 1090
10905 1100
10910 1110
10915 1120
10920 1130
10925 1140
10930 1150
10935 1160
10940 1170
10945 1180
10950 1190
10955 1200
11000 1210
11005 1220
11010 1230
11015 1240
11020 1250
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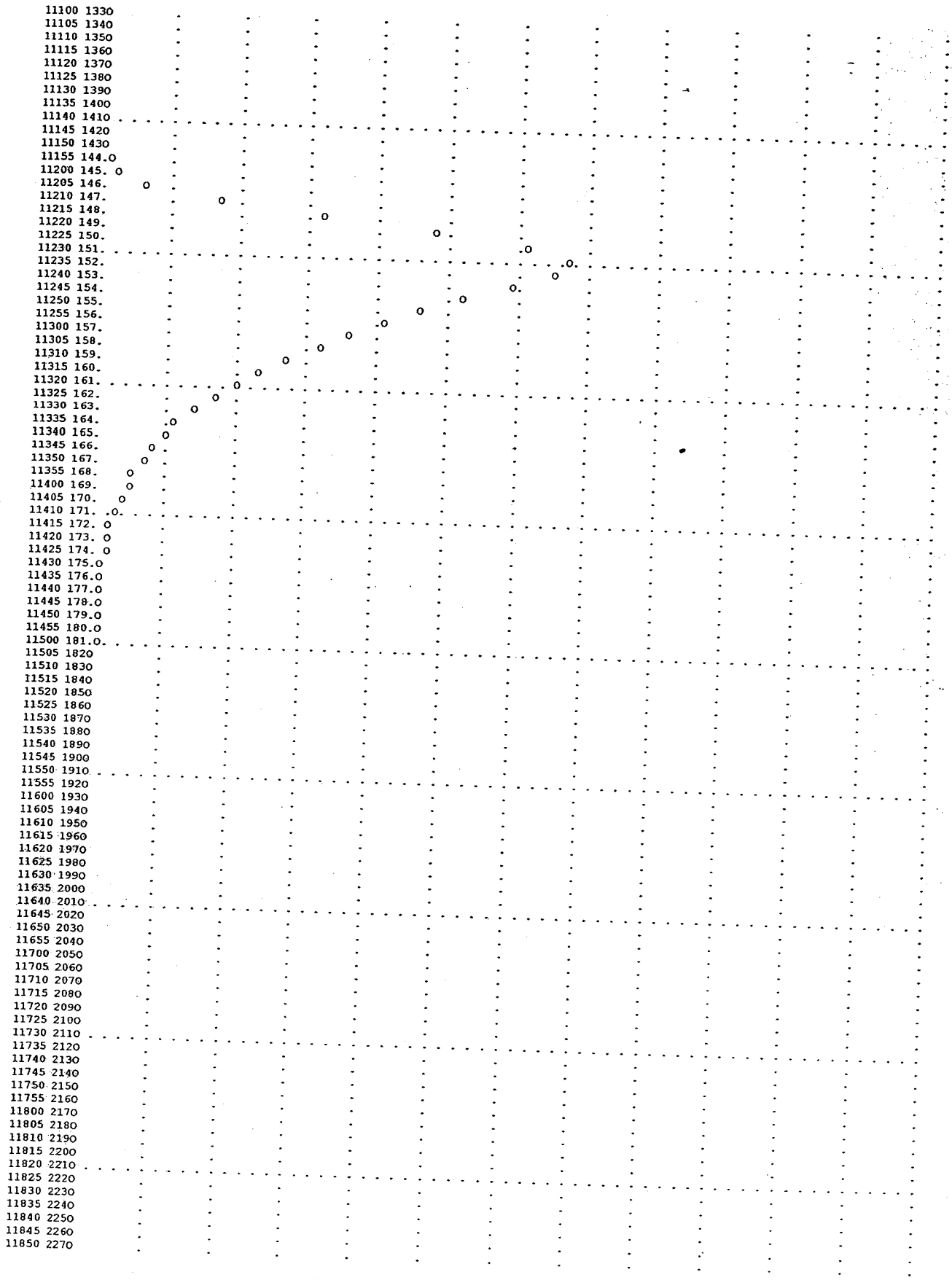
11030 1270
11035 1280
11040 1290
11045 1300
11050 1310
11055 1320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11105 1340
11110 1350
11115 1360
11120 1370
11125 1380
11130 1390
11135 1400
11140 1410
11145 1420
11150 1430
11155 144.0
11200 145.
11205 146.
11210 147.
11215 148.
11220 149.
11225 150.
11230 151.
11235 152.
11240 153.
11245 154.
11250 155.
11255 156.
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11315 160.
11320 161.
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11330 163.
11335 164.
11340 165.
11345 166.
11350 167.
11355 168.
11400 169.
11405 170.
11410 171.
11415 172.
11420 173.
11425 174.
11430 175.0
11435 176.0
11440 177.0
11445 178.0
11450 179.0
11455 180.0
11500 181.0
11505 1820
11510 1830
11515 1840
11520 1850
11525 1860
11530 1870
11535 1880
11540 1890
11545 1900
11550 1910
11555 1920
11600 1930
11605 1940
11610 1950
11615 1960
11620 1970
11625 1980
11630 1990
11635 2000
11640 2010
11645 2020
11650 2030
11655 2040
11700 2050
11705 2060
11710 2070
11715 2080
11720 2090
11725 2100
11730 2110
11735 2120
11740 2130
11745 2140
11750 2150
11755 2160
11800 2170
11805 2180
11810 2190
11815 2200
11820 2210
11825 2220
11830 2230
11835 2240
11840 2250
11845 2260
11850 2270

```
11855 2280
11900 2290
11905 2300
11910 2310
11915 2320
11920 2330
11925 2340
11930 2350
11935 2360
11940 2370
11945 2380
11950 2390
11955 2400
12000 2410
12005 2420
12010 2430
12015 2440
12020 2450
12025 2460
12030 2470
12035 2480
12040 2490
12045 2500
12050 2510
12055 2520
12100 2530
12105 2540
12110 2550
12115 2560
12120 2570
12125 2580
12130 2590
12135 2600
12140 2610
12145 2620
12150 2630
12155 2640
12200 2650
12205 2660
12210 2670
12215 2680
12220 2690
12225 2700
12230 2710
12235 2720
12240 2730
12245 2740
12250 2750
12255 2760
12300 2770
12305 2780
12310 2790
12315 2800
12320 2810
12325 2820
12330 2830
12335 2840
12340 2850
12345 2860
12350 2870
12355 2880
20000 2890
20005 2900
20010 2910
20015 2920
20020 2930
20025 2940
20030 2950
20035 2960
20040 2970
20045 2980
20050 2990
20055 3000
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1

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HYDROGRAPH AT STATION B1
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = 1.00

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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		0615	76	0.	*	1		1230	151	4989.	*	1		1845	226	1.
1		0005	2	0.	*	1		0620	77	0.	*	1		1235	152	4941.	*	1		1850	227	1.
1		0010	3	0.	*	1		0625	78	0.	*	1		1240	153	4614.	*	1		1855	228	1.
1		0015	4	0.	*	1		0630	79	1.	*	1		1245	154	3908.	*	1		1900	229	1.
1		0020	5	0.	*	1		0635	80	1.	*	1		1250	155	3102.	*	1		1905	230	1.
1		0025	6	0.	*	1		0640	81	1.	*	1		1255	156	2473.	*	1		1910	231	1.
1		0030	7	0.	*	1		0645	82	1.	*	1		1300	157	2013.	*	1		1915	232	1.
1		0035	8	0.	*	1		0650	83	1.	*	1		1305	158	1658.	*	1		1920	233	1.
1		0040	9	0.	*	1		0655	84	1.	*	1		1310	159	1360.	*	1		1925	234	1.
1		0045	10	0.	*	1		0700	85	1.	*	1		1315	160	1100.	*	1		1930	235	1.

1	0050	11	0.	*	1	0705	86	1.	*	1	1320	161	885.	*	1	1935	236	1.
1	0055	12	0.	*	1	0710	87	1.	*	1	1325	162	709.	*	1	1940	237	1.
1	0100	13	0.	*	1	0715	88	1.	*	1	1330	163	567.	*	1	1945	238	1.
1	0105	14	0.	*	1	0720	89	1.	*	1	1335	164	458.	*	1	1950	239	1.
1	0110	15	0.	*	1	0725	90	1.	*	1	1340	165	368.	*	1	1955	240	1.
1	0115	16	0.	*	1	0730	91	1.	*	1	1345	166	301.	*	1	2000	241	1.
1	0120	17	0.	*	1	0735	92	1.	*	1	1350	167	243.	*	1	2005	242	1.
1	0125	18	0.	*	1	0740	93	1.	*	1	1355	168	201.	*	1	2010	243	1.
1	0130	19	0.	*	1	0745	94	1.	*	1	1400	169	166.	*	1	2015	244	1.
1	0135	20	0.	*	1	0750	95	1.	*	1	1405	170	134.	*	1	2020	245	0.
1	0140	21	0.	*	1	0755	96	1.	*	1	1410	171	109.	*	1	2025	246	0.
1	0145	22	0.	*	1	0800	97	1.	*	1	1415	172	93.	*	1	2030	247	0.
1	0150	23	0.	*	1	0805	98	1.	*	1	1420	173	77.	*	1	2035	248	0.
1	0155	24	0.	*	1	0810	99	1.	*	1	1425	174	63.	*	1	2040	249	0.
1	0200	25	0.	*	1	0815	100	1.	*	1	1430	175	50.	*	1	2045	250	0.
1	0205	26	0.	*	1	0820	101	1.	*	1	1435	176	38.	*	1	2050	251	0.
1	0210	27	0.	*	1	0825	102	1.	*	1	1440	177	31.	*	1	2055	252	0.
1	0215	28	0.	*	1	0830	103	1.	*	1	1445	178	27.	*	1	2100	253	0.
1	0220	29	0.	*	1	0835	104	1.	*	1	1450	179	24.	*	1	2105	254	0.
1	0225	30	0.	*	1	0840	105	1.	*	1	1455	180	21.	*	1	2110	255	0.
1	0230	31	0.	*	1	0845	106	1.	*	1	1500	181	18.	*	1	2115	256	0.
1	0235	32	0.	*	1	0850	107	1.	*	1	1505	182	16.	*	1	2120	257	0.
1	0240	33	0.	*	1	0855	108	1.	*	1	1510	183	13.	*	1	2125	258	0.
1	0245	34	0.	*	1	0900	109	1.	*	1	1515	184	11.	*	1	2130	259	0.
1	0250	35	0.	*	1	0905	110	1.	*	1	1520	185	10.	*	1	2135	260	0.
1	0255	36	0.	*	1	0910	111	1.	*	1	1525	186	8.	*	1	2140	261	0.
1	0300	37	0.	*	1	0915	112	1.	*	1	1530	187	7.	*	1	2145	262	0.
1	0305	38	0.	*	1	0920	113	1.	*	1	1535	188	6.	*	1	2150	263	0.
1	0310	39	0.	*	1	0925	114	1.	*	1	1540	189	5.	*	1	2155	264	0.
1	0315	40	0.	*	1	0930	115	1.	*	1	1545	190	4.	*	1	2200	265	0.
1	0320	41	0.	*	1	0935	116	1.	*	1	1550	191	4.	*	1	2205	266	0.
1	0325	42	0.	*	1	0940	117	1.	*	1	1555	192	3.	*	1	2210	267	0.
1	0330	43	0.	*	1	0945	118	1.	*	1	1600	193	3.	*	1	2215	268	0.
1	0335	44	0.	*	1	0950	119	1.	*	1	1605	194	2.	*	1	2220	269	0.
1	0340	45	0.	*	1	0955	120	1.	*	1	1610	195	2.	*	1	2225	270	0.
1	0345	46	0.	*	1	1000	121	1.	*	1	1615	196	2.	*	1	2230	271	0.
1	0350	47	0.	*	1	1005	122	1.	*	1	1620	197	2.	*	1	2235	272	0.
1	0355	48	0.	*	1	1010	123	1.	*	1	1625	198	1.	*	1	2240	273	0.
1	0400	49	0.	*	1	1015	124	1.	*	1	1630	199	1.	*	1	2245	274	0.
1	0405	50	0.	*	1	1020	125	1.	*	1	1635	200	1.	*	1	2250	275	0.
1	0410	51	0.	*	1	1025	126	1.	*	1	1640	201	1.	*	1	2255	276	0.
1	0415	52	0.	*	1	1030	127	1.	*	1	1645	202	1.	*	1	2300	277	0.
1	0420	53	0.	*	1	1035	128	1.	*	1	1650	203	1.	*	1	2305	278	0.
1	0425	54	0.	*	1	1040	129	1.	*	1	1655	204	1.	*	1	2310	279	0.
1	0430	55	0.	*	1	1045	130	1.	*	1	1700	205	1.	*	1	2315	280	0.
1	0435	56	0.	*	1	1050	131	1.	*	1	1705	206	1.	*	1	2320	281	0.
1	0440	57	0.	*	1	1055	132	1.	*	1	1710	207	1.	*	1	2325	282	0.
1	0445	58	0.	*	1	1100	133	1.	*	1	1715	208	1.	*	1	2330	283	0.
1	0450	59	0.	*	1	1105	134	1.	*	1	1720	209	1.	*	1	2335	284	0.
1	0455	60	0.	*	1	1110	135	1.	*	1	1725	210	1.	*	1	2340	285	0.
1	0500	61	0.	*	1	1115	136	1.	*	1	1730	211	1.	*	1	2345	286	0.
1	0505	62	0.	*	1	1120	137	1.	*	1	1735	212	1.	*	1	2350	287	0.
1	0510	63	0.	*	1	1125	138	2.	*	1	1740	213	1.	*	1	2355	288	0.
1	0515	64	0.	*	1	1130	139	2.	*	1	1745	214	1.	*	2	0000	289	0.
1	0520	65	0.	*	1	1135	140	8.	*	1	1750	215	1.	*	2	0005	290	0.
1	0525	66	0.	*	1	1140	141	30.	*	1	1755	216	1.	*	2	0010	291	0.
1	0530	67	0.	*	1	1145	142	77.	*	1	1800	217	1.	*	2	0015	292	0.
1	0535	68	0.	*	1	1150	143	213.	*	1	1805	218	1.	*	2	0020	293	0.
1	0540	69	0.	*	1	1155	144	622.	*	1	1810	219	1.	*	2	0025	294	0.
1	0545	70	0.	*	1	1200	145	1371.	*	1	1815	220	1.	*	2	0030	295	0.
1	0550	71	0.	*	1	1205	146	2487.	*	1	1820	221	1.	*	2	0035	296	0.
1	0555	72	0.	*	1	1210	147	3674.	*	1	1825	222	1.	*	2	0040	297	0.
1	0600	73	0.	*	1	1215	148	4432.	*	1	1830	223	1.	*	2	0045	298	0.
1	0605	74	0.	*	1	1220	149	4790.	*	1	1835	224	1.	*	2	0050	299	0.
1	0610	75	0.	*	1	1225	150	4933.	*	1	1840	225	1.	*	2	0055	300	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 4989.	12.50		799.	200.	193.	193.
		(INCHES)	.699	.700	.700	.700
		(AC-FT)	396.	397.	397.	397.

CUMULATIVE AREA = 10.62 SQ MI

1 STATION B1

(O) OUTFLOW

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          0.      500.    1000.    1500.    2000.    2500.    3000.    3500.    4000.    4500.    5000.      0.       0.
DAHRMN PER
 10000   10---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005   20         .         .         .         .         .         .         .         .         .         .         .
 10010   30         .         .         .         .         .         .         .         .         .         .         .
 10015   40         .         .         .         .         .         .         .         .         .         .         .
 10020   50         .         .         .         .         .         .         .         .         .         .         .
 10025   60         .         .         .         .         .         .         .         .         .         .         .
 10030   70         .         .         .         .         .         .         .         .         .         .         .
 10035   80         .         .         .         .         .         .         .         .         .         .         .
 10040   90         .         .         .         .         .         .         .         .         .         .         .
 10045  100         .         .         .         .         .         .         .         .         .         .         .
 10050  110 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10055  120         .         .         .         .         .         .         .         .         .         .         .
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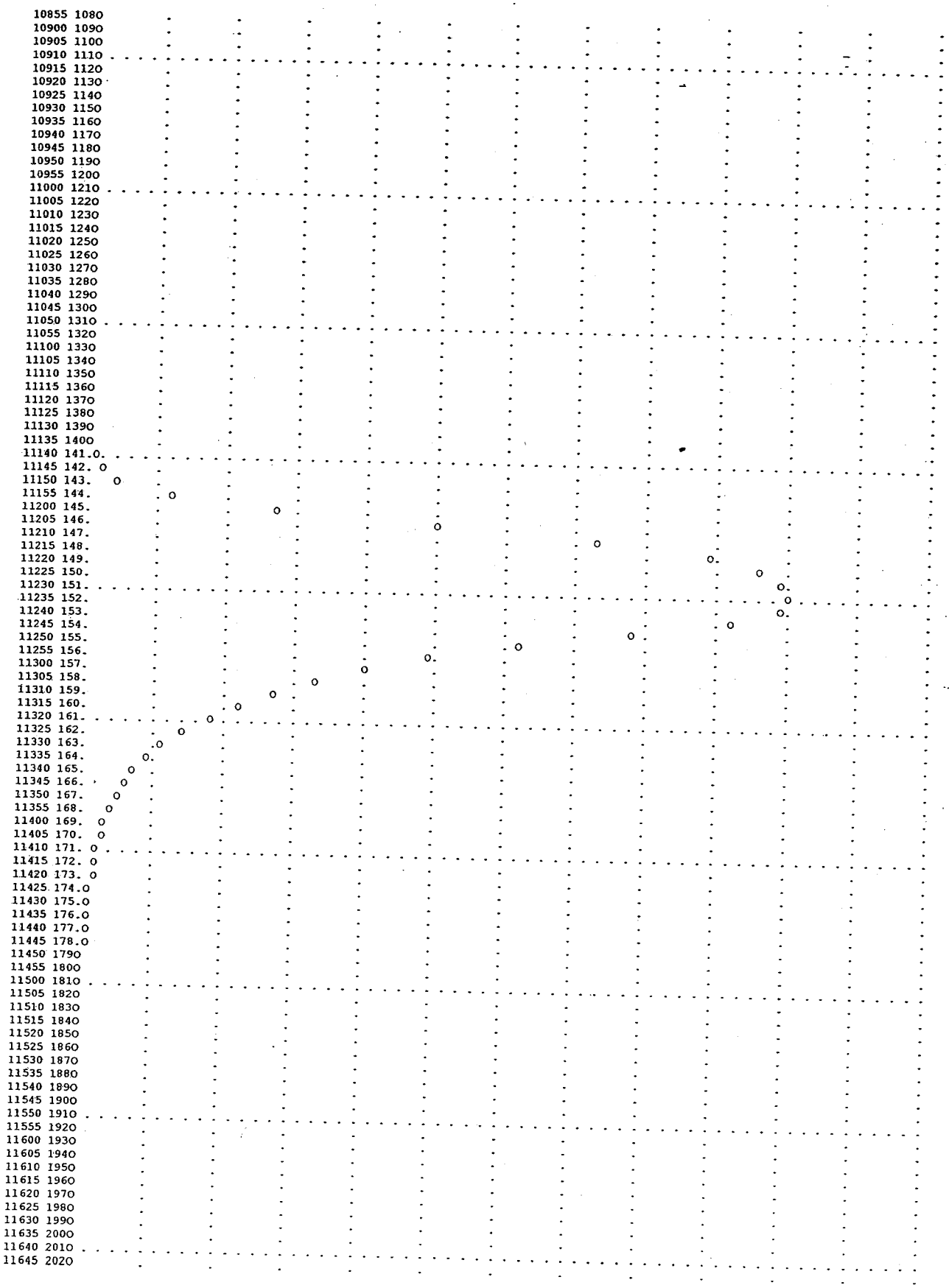
10100	130
10105	140
10110	150
10115	160
10120	170
10125	180
10130	190
10135	200
10140	210
10145	220
10150	230
10155	240
10200	250
10205	260
10210	270
10215	280
10220	290
10225	300
10230	310
10235	320
10240	330
10245	340
10250	350
10255	360
10300	370
10305	380
10310	390
10315	400
10320	410
10325	420
10330	430
10335	440
10340	450
10345	460
10350	470
10355	480
10400	490
10405	500
10410	510
10415	520
10420	530
10425	540
10430	550
10435	560
10440	570
10445	580
10450	590
10455	600
10500	610
10505	620
10510	630
10515	640
10520	650
10525	660
10530	670
10535	680
10540	690
10545	700
10550	710
10555	720
10600	730
10605	740
10610	750
10615	760
10620	770
10625	780
10630	790
10635	800
10640	810
10645	820
10650	830
10655	840
10700	850
10705	860
10710	870
10715	880
10720	890
10725	900
10730	910
10735	920
10740	930
10745	940
10750	950
10755	960
10800	970
10805	980
10810	990
10815	1000
10820	1010
10825	1020
10830	1030
10835	1040
10840	1050
10845	1060
10850	1070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10950 1190
10955 1200
11000 1210
11005 1220
11010 1230
11015 1240
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11030 1270
11035 1280
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11115 1360
11120 1370
11125 1380
11130 1390
11135 1400
11140 141.0
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11155 144.
11200 145.
11205 146.
11210 147.
11215 148.
11220 149.
11225 150.
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11235 152.
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11245 154.
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11635 2000
11640 2010
11645 2020

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12335 2840
12340 2850
12345 2860
12350 2870
12355 2880
20000 2890
20005 2900
20010 2910
20015 2920
20020 2930
20025 2940
20030 2950
20035 2960
20040 2970

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20045 2980        .         .         .         .         .         .         .         .         .         .         .         .
20050 2990        .         .         .         .         .         .         .         .         .         .         .         .
20055 3000---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
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                *            *
292 KK          *    RES1    *
                *            *
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293 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          1  PRINT CONTROL
                      IPLOT          2  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                          ROUTE FLOW TO OUTLET OF DETENSION BASIN

                HYDROGRAPH ROUTING DATA

274 RL          ROUTING LOSSES
                      QLOSS        .00  INITIAL LOSS
                      CLOSS        .00  ADDITIONAL FRACTION LOST

295 RS          STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC     789.00  INITIAL CONDITION
                          X        .00  WORKING R AND D COEFFICIENT

296 SV            STORAGE          .0      52.2     105.7     160.5     216.6     274.0     332.7     392.7     454.0

297 SE          ELEVATION     786.00    788.00    790.00    792.00    794.00    796.00    798.00    800.00    802.00

298 SQ          DISCHARGE         0.       55.       162.      311.      499.      727.      994.     1300.     2036.        0.
                               2467.     2941.     3459.

300 SE          ELEVATION     790.00    791.00    792.00    793.00    794.00    795.00    796.00    797.00    798.00    799.00
                              800.00    801.00    802.00
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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	52.20	105.70	133.10	160.50	188.55	216.60	245.30	274.00	303.35
OUTFLOW	.00	.00	.00	55.00	162.00	311.00	499.00	727.00	994.00	1300.00
ELEVATION	786.00	788.00	790.00	791.00	792.00	793.00	794.00	795.00	796.00	797.00
STORAGE	332.70	362.70	392.70	423.35	454.00					
OUTFLOW	2036.00	.00	2467.00	2941.00	3459.00					
ELEVATION	798.00	799.00	800.00	801.00	802.00					

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HYDROGRAPH AT STATION RES1
PLAN 1, RATIO = .34

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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.	78.9	789.0	1		0820	101	0.	79.0	789.0	1		1640	201	0.	79.7	789.0
1		0005	2	0.	78.9	789.0	1		0825	102	0.	79.0	789.0	1		1645	202	0.	79.7	789.0
1		0010	3	0.	78.9	789.0	1		0830	103	0.	79.0	789.0	1		1650	203	0.	79.7	789.0
1		0015	4	0.	78.9	789.0	1		0835	104	0.	79.0	789.0	1		1655	204	0.	79.7	789.0
1		0020	5	0.	78.9	789.0	1		0840	105	0.	79.0	789.0	1		1700	205	0.	79.7	789.0
1		0025	6	0.	79.0	789.0	1		0845	106	0.	79.0	789.0	1		1705	206	0.	79.8	789.0
1		0030	7	0.	79.0	789.0	1		0850	107	0.	79.0	789.0	1		1710	207	0.	79.8	789.0
1		0035	8	0.	79.0	789.0	1		0855	108	0.	79.0	789.0	1		1715	208	0.	79.8	789.0
1		0040	9	0.	79.0	789.0	1		0900	109	0.	79.0	789.0	1		1720	209	0.	79.8	789.0
1		0045	10	0.	79.0	789.0	1		0905	110	0.	79.1	789.0	1		1725	210	0.	79.8	789.0
1		0050	11	0.	79.0	789.0	1		0910	111	0.	79.1	789.0	1		1730	211	0.	79.8	789.0
1		0055	12	0.	79.0	789.0	1		0915	112	0.	79.1	789.0	1		1735	212	0.	79.8	789.0
1		0100	13	0.	79.0	789.0	1		0920	113	0.	79.1	789.0	1		1740	213	0.	79.8	789.0
1		0105	14	0.	79.0	789.0	1		0925	114	0.	79.1	789.0	1		1745	214	0.	79.8	789.0
1		0110	15	0.	79.0	789.0	1		0930	115	0.	79.1	789.0	1		1750	215	0.	79.8	789.0
1		0115	16	0.	79.0	789.0	1		0935	116	0.	79.1	789.0	1		1755	216	0.	79.8	789.0
1		0120	17	0.	79.0	789.0	1		0940	117	0.	79.1	789.0	1		1800	217	0.	79.8	789.0
1		0125	18	0.	79.0	789.0	1		0945	118	0.	79.1	789.0	1		1805	218	0.	79.8	789.0
1		0130	19	0.	79.0	789.0	1		0950	119	0.	79.1	789.0	1		1810	219	0.	79.8	789.0
1		0135	20	0.	79.0	789.0	1		0955	120	0.	79.1	789.0	1		1815	220	0.	79.8	789.0
1		0140	21	0.	79.0	789.0	1		1000	121	0.	79.1	789.0	1		1820	221	0.	79.8	789.0
1		0145	22	0.	79.0	789.0	1		1005	122	0.	79.1	789.0	1		1825	222	0.	79.8	789.0
1		0150	23	0.	79.0	789.0	1		1010	123	0.	79.1	789.0	1		1830	223	0.	79.8	789.0
1		0155	24	0.	79.0	789.0	1		1015	124	0.	79.1	789.0	1		1835	224	0.	79.8	789.0
1		0200	25	0.	79.0	789.0	1		1020	125	0.	79.1	789.0	1		1840	225	0.	79.8	789.0
1		0205	26	0.	79.0	789.0	1		1025	126	0.	79.1	789.0	1		1845	226	0.	79.8	789.0
1		0210	27	0.	79.0	789.0	1		1030	127	0.	79.1	789.0	1		1850	227	0.	79.8	789.0
1		0215	28	0.	79.0	789.0	1		1035	128	0.	79.1	789.0	1		1855	228	0.	79.8	789.0
1		0220	29	0.	79.0	789.0	1		1040	129	0.	79.1	789.0	1		1900	229	0.	79.8	789.0
1		0225	30	0.	79.0	789.0	1		1045	130	0.	79.1	789.0	1		1905	230	0.	79.8	789.0

1	0230	31	0.	79.0	789.0	*	1	1050	131	0.	79.1	789.0	*	1	1910	231	0.	79.8	789.0
1	0235	32	0.	79.0	789.0	*	1	1055	132	0.	79.1	789.0	*	1	1915	232	0.	79.8	789.0
1	0240	33	0.	79.0	789.0	*	1	1100	133	0.	79.1	789.0	*	1	1920	233	0.	79.8	789.0
1	0245	34	0.	79.0	789.0	*	1	1105	134	0.	79.1	789.0	*	1	1925	234	0.	79.8	789.0
1	0250	35	0.	79.0	789.0	*	1	1110	135	0.	79.1	789.0	*	1	1930	235	0.	79.8	789.0
1	0255	36	0.	79.0	789.0	*	1	1115	136	0.	79.1	789.0	*	1	1935	236	0.	79.8	789.0
1	0300	37	0.	79.0	789.0	*	1	1120	137	0.	79.1	789.0	*	1	1940	237	0.	79.8	789.0
1	0305	38	0.	79.0	789.0	*	1	1125	138	0.	79.1	789.0	*	1	1945	238	0.	79.8	789.0
1	0310	39	0.	79.0	789.0	*	1	1130	139	0.	79.1	789.0	*	1	1950	239	0.	79.8	789.0
1	0315	40	0.	79.0	789.0	*	1	1135	140	0.	79.1	789.0	*	1	1955	240	0.	79.8	789.0
1	0320	41	0.	79.0	789.0	*	1	1140	141	0.	79.1	789.0	*	1	2000	241	0.	79.8	789.0
1	0325	42	0.	79.0	789.0	*	1	1145	142	0.	79.1	789.0	*	1	2005	242	0.	79.8	789.0
1	0330	43	0.	79.0	789.0	*	1	1150	143	0.	79.1	789.0	*	1	2010	243	0.	79.8	789.0
1	0335	44	0.	79.0	789.0	*	1	1155	144	0.	79.1	789.0	*	1	2015	244	0.	79.8	789.0
1	0340	45	0.	79.0	789.0	*	1	1200	145	0.	79.2	789.0	*	1	2020	245	0.	79.8	789.0
1	0345	46	0.	79.0	789.0	*	1	1205	146	0.	79.2	789.0	*	1	2025	246	0.	79.8	789.0
1	0350	47	0.	79.0	789.0	*	1	1210	147	0.	79.2	789.0	*	1	2030	247	0.	79.8	789.0
1	0355	48	0.	79.0	789.0	*	1	1215	148	0.	79.2	789.0	*	1	2035	248	0.	79.8	789.0
1	0400	49	0.	79.0	789.0	*	1	1220	149	0.	79.2	789.0	*	1	2040	249	0.	79.8	789.0
1	0405	50	0.	79.0	789.0	*	1	1225	150	0.	79.2	789.0	*	1	2045	250	0.	79.8	789.0
1	0410	51	0.	79.0	789.0	*	1	1230	151	0.	79.2	789.0	*	1	2050	251	0.	79.8	789.0
1	0415	52	0.	79.0	789.0	*	1	1235	152	0.	79.3	789.0	*	1	2055	252	0.	79.8	789.0
1	0420	53	0.	79.0	789.0	*	1	1240	153	0.	79.3	789.0	*	1	2100	253	0.	79.8	789.0
1	0425	54	0.	79.0	789.0	*	1	1245	154	0.	79.3	789.0	*	1	2105	254	0.	79.8	789.0
1	0430	55	0.	79.0	789.0	*	1	1250	155	0.	79.3	789.0	*	1	2110	255	0.	79.8	789.0
1	0435	56	0.	79.0	789.0	*	1	1255	156	0.	79.4	789.0	*	1	2115	256	0.	79.8	789.0
1	0440	57	0.	79.0	789.0	*	1	1300	157	0.	79.4	789.0	*	1	2120	257	0.	79.8	789.0
1	0445	58	0.	79.0	789.0	*	1	1305	158	0.	79.4	789.0	*	1	2125	258	0.	79.8	789.0
1	0450	59	0.	79.0	789.0	*	1	1310	159	0.	79.4	789.0	*	1	2130	259	0.	79.8	789.0
1	0455	60	0.	79.0	789.0	*	1	1315	160	0.	79.5	789.0	*	1	2135	260	0.	79.8	789.0
1	0500	61	0.	79.0	789.0	*	1	1320	161	0.	79.5	789.0	*	1	2140	261	0.	79.8	789.0
1	0505	62	0.	79.0	789.0	*	1	1325	162	0.	79.5	789.0	*	1	2145	262	0.	79.8	789.0
1	0510	63	0.	79.0	789.0	*	1	1330	163	0.	79.5	789.0	*	1	2150	263	0.	79.8	789.0
1	0515	64	0.	79.0	789.0	*	1	1335	164	0.	79.5	789.0	*	1	2155	264	0.	79.8	789.0
1	0520	65	0.	79.0	789.0	*	1	1340	165	0.	79.6	789.0	*	1	2200	265	0.	79.8	789.0
1	0525	66	0.	79.0	789.0	*	1	1345	166	0.	79.6	789.0	*	1	2205	266	0.	79.8	789.0
1	0530	67	0.	79.0	789.0	*	1	1350	167	0.	79.6	789.0	*	1	2210	267	0.	79.8	789.0
1	0535	68	0.	79.0	789.0	*	1	1355	168	0.	79.6	789.0	*	1	2215	268	0.	79.8	789.0
1	0540	69	0.	79.0	789.0	*	1	1400	169	0.	79.6	789.0	*	1	2220	269	0.	79.8	789.0
1	0545	70	0.	79.0	789.0	*	1	1405	170	0.	79.6	789.0	*	1	2225	270	0.	79.8	789.0
1	0550	71	0.	79.0	789.0	*	1	1410	171	0.	79.6	789.0	*	1	2230	271	0.	79.8	789.0
1	0555	72	0.	79.0	789.0	*	1	1415	172	0.	79.6	789.0	*	1	2235	272	0.	79.8	789.0
1	0600	73	0.	79.0	789.0	*	1	1420	173	0.	79.6	789.0	*	1	2240	273	0.	79.8	789.0
1	0605	74	0.	79.0	789.0	*	1	1425	174	0.	79.7	789.0	*	1	2245	274	0.	79.8	789.0
1	0610	75	0.	79.0	789.0	*	1	1430	175	0.	79.7	789.0	*	1	2250	275	0.	79.8	789.0
1	0615	76	0.	79.0	789.0	*	1	1435	176	0.	79.7	789.0	*	1	2255	276	0.	79.8	789.0
1	0620	77	0.	79.0	789.0	*	1	1440	177	0.	79.7	789.0	*	1	2300	277	0.	79.8	789.0
1	0625	78	0.	79.0	789.0	*	1	1445	178	0.	79.7	789.0	*	1	2305	278	0.	79.8	789.0
1	0630	79	0.	79.0	789.0	*	1	1450	179	0.	79.7	789.0	*	1	2310	279	0.	79.8	789.0
1	0635	80	0.	79.0	789.0	*	1	1455	180	0.	79.7	789.0	*	1	2315	280	0.	79.8	789.0
1	0640	81	0.	79.0	789.0	*	1	1500	181	0.	79.7	789.0	*	1	2320	281	0.	79.8	789.0
1	0645	82	0.	79.0	789.0	*	1	1505	182	0.	79.7	789.0	*	1	2325	282	0.	79.8	789.0
1	0650	83	0.	79.0	789.0	*	1	1510	183	0.	79.7	789.0	*	1	2330	283	0.	79.8	789.0
1	0655	84	0.	79.0	789.0	*	1	1515	184	0.	79.7	789.0	*	1	2335	284	0.	79.8	789.0
1	0700	85	0.	79.0	789.0	*	1	1520	185	0.	79.7	789.0	*	1	2340	285	0.	79.8	789.0
1	0705	86	0.	79.0	789.0	*	1	1525	186	0.	79.7	789.0	*	1	2345	286	0.	79.8	789.0
1	0710	87	0.	79.0	789.0	*	1	1530	187	0.	79.7	789.0	*	1	2350	287	0.	79.8	789.0
1	0715	88	0.	79.0	789.0	*	1	1535	188	0.	79.7	789.0	*	1	2355	288	0.	79.8	789.0
1	0720	89	0.	79.0	789.0	*	1	1540	189	0.	79.7	789.0	*	2	0000	289	0.	79.8	789.0
1	0725	90	0.	79.0	789.0	*	1	1545	190	0.	79.7	789.0	*	2	0005	290	0.	79.8	789.0
1	0730	91	0.	79.0	789.0	*	1	1550	191	0.	79.7	789.0	*	2	0010	291	0.	79.8	789.0
1	0735	92	0.	79.0	789.0	*	1	1555	192	0.	79.7	789.0	*	2	0015	292	0.	79.8	789.0
1	0740	93	0.	79.0	789.0	*	1	1600	193	0.	79.7	789.0	*	2	0020	293	0.	79.8	789.0
1	0745	94	0.	79.0	789.0	*	1	1605	194	0.	79.7	789.0	*	2	0025	294	0.	79.9	789.0
1	0750	95	0.	79.0	789.0	*	1	1610	195	0.	79.7	789.0	*	2	0030	295	0.	79.9	789.0
1	0755	96	0.	79.0	789.0	*	1	1615	196	0.	79.7	789.0	*	2	0035	296	0.	79.9	789.0
1	0800	97	0.	79.0	789.0	*	1	1620	197	0.	79.7	789.0	*	2	0040	297	0.	79.9	789.0
1	0805	98	0.	79.0	789.0	*	1	1625	198	0.	79.7	789.0	*	2	0045	298	0.	79.9	789.0
1	0810	99	0.	79.0	789.0	*	1	1630	199	0.	79.7	789.0	*	2	0050	299	0.	79.9	789.0
1	0815	100	0.	79.0	789.0	*	1	1635	200	0.	79.7	789.0	*	2	0055	300	0.	79.9	789.0
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 0.	.00		0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
80.	24.92	80.	79.	79.	79.

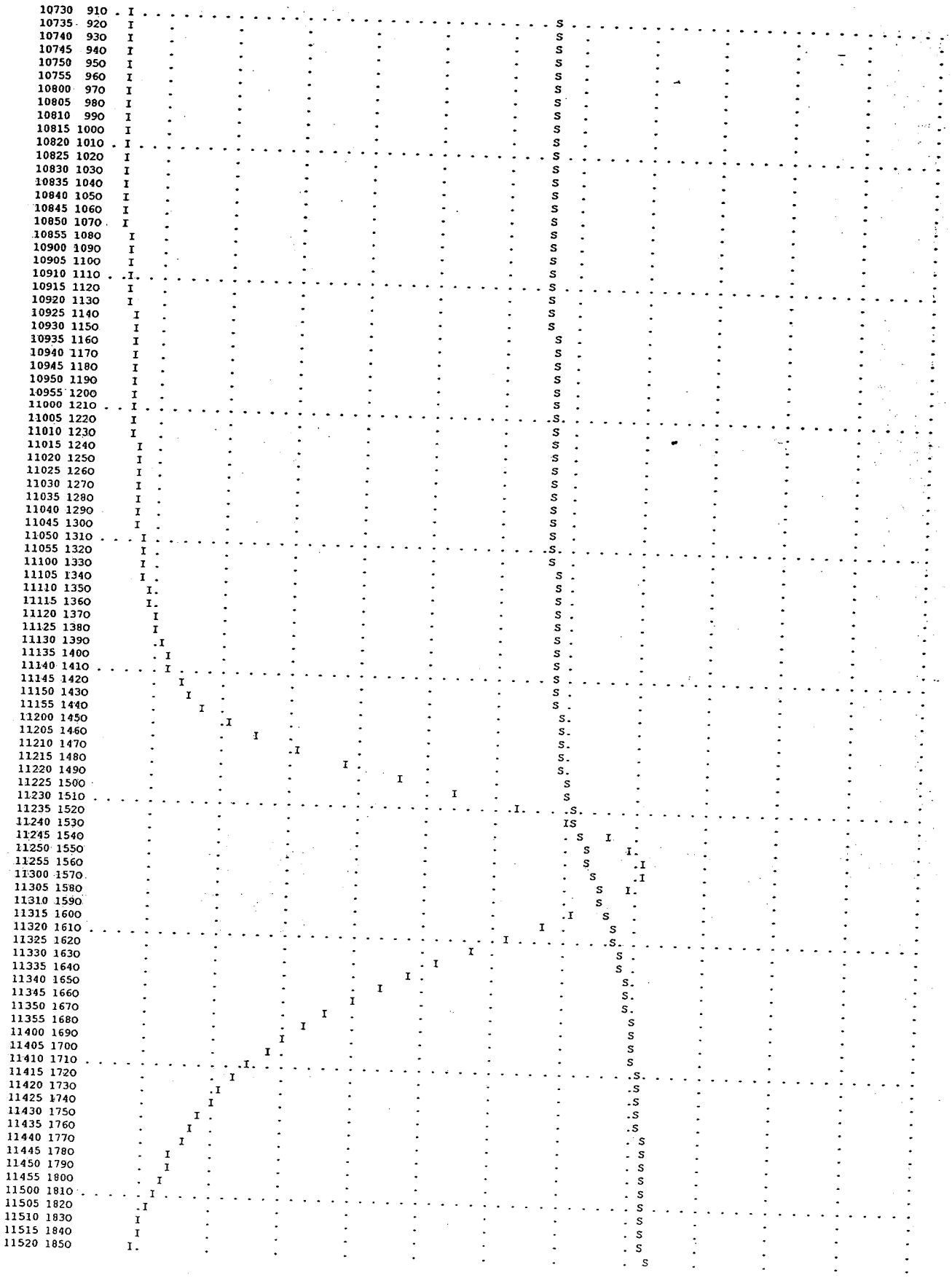
PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
789.03	24.75	789.03	789.02	789.02	789.02

CUMULATIVE AREA = 10.62 SQ MI

1 STATION RES1

(I) INFLOW, (O) OUTFLOW

		.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	.0	.0	.0
									(S) STORAGE					
		.0	.0	.0	.0	.0	.0	78.8	79.2	79.6	80.0	.0	.0	.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	130I								S					
10105	140I								S					
10110	150I								S					
10115	160I								S					
10120	170I								S					
10125	180I								S					
10130	190 I								S					
10135	200 I								S					
10140	210 I								S					
10145	220 I								S					
10150	230 I								S					
10155	240 I								S					
10200	250 I								S					
10205	260 I								S					
10210	270 I								S					
10215	280 I								S					
10220	290 I								S					
10225	300 I								S					
10230	310 I								S					
10235	320 I								S					
10240	330 I								S					
10245	340 I								S					
10250	350 I								S					
10255	360 I								S					
10300	370 I								S					
10305	380 I								S					
10310	390 I								S					
10315	400 I								S					
10320	410 I								S					
10325	420 I								S					
10330	430 I								S					
10335	440 I								S					
10340	450 I								S					
10345	460 I								S					
10350	470 I								S					
10355	480 I								S					
10400	490 I								S					
10405	500 I								S					
10410	510 I								S					
10415	520 I								S					
10420	530 I								S					
10425	540 I								S					
10430	550 I								S					
10435	560 I								S					
10440	570 I								S					
10445	580 I								S					
10450	590 I								S					
10455	600 I								S					
10500	610 I								S					
10505	620 I								S					
10510	630 I								S					
10515	640 I								S					
10520	650 I								S					
10525	660 I								S					
10530	670 I								S					
10535	680 I								S					
10540	690 I								S					
10545	700 I								S					
10550	710 I								S					
10555	720 I								S					
10600	730 I								S					
10605	740 I								S					
10610	750 I								S					
10615	760 I								S					
10620	770 I								S					
10625	780 I								S					
10630	790 I								S					
10635	800 I								S					
10640	810 I								S					
10645	820 I								S					
10650	830 I								S					
10655	840 I								S					
10700	850 I								S					
10705	860 I								S					
10710	870 I								S					
10715	880 I								S					
10720	890 I								S					
10725	900 I								S					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11245 1540
11250 1550
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11425 1740
11430 1750
11435 1760
11440 1770
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11450 1790
11455 1800
11500 1810
11505 1820
11510 1830
11515 1840
11520 1850

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11525 1860        I.         .         .         .         .         .         .         .  S      .         .         .         .
11530 1870       I .         .         .         .         .         .         .         .  S      .         .         .         .
11535 1880       I .         .         .         .         .         .         .         .  S      .         .         .         .
11540 1890       I .         .         .         .         .         .         .         .  S      .         .         .         .
11545 1900       I .         .         .         .         .         .         .         .  S      .         .         .         .
11550 1910 . . .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . .
11555 1920      I  .         .         .         .         .         .         .         .  S      .         .         .         .
11600 1930      I  .         .         .         .         .         .         .         .  S      .         .         .         .
11605 1940      I  .         .         .         .         .         .         .         .  S      .         .         .         .
11610 1950     I   .         .         .         .         .         .         .         .  S      .         .         .         .
11615 1960     I   .         .         .         .         .         .         .         .  S      .         .         .         .
11620 1970     I   .         .         .         .         .         .         .         .  S      .         .         .         .
11625 1980     I   .         .         .         .         .         .         .         .  S      .         .         .         .
11630 1990     I   .         .         .         .         .         .         .         .  S      .         .         .         .
11635 2000     I   .         .         .         .         .         .         .         .  S      .         .         .         .
11640 2010 . . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
11645 2020     I   .         .         .         .         .         .         .         .   S     .         .         .         .
11650 2030     I   .         .         .         .         .         .         .         .   S     .         .         .         .
11655 2040    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11700 2050    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11705 2060    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11710 2070    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11715 2080    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11720 2090    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11725 2100    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11730 2110 . .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
11735 2120    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11740 2130    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11745 2140    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11750 2150    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11755 2160    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11800 2170    I    .         .         .         .         .         .         .         .   S     .         .         .         .
11805 2180   I     .         .         .         .         .         .         .         .   S     .         .         .         .
11810 2190   I     .         .         .         .         .         .         .         .   S     .         .         .         .
11815 2200   I     .         .         .         .         .         .         .         .   S     .         .         .         .
11820 2210 . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
11825 2220   I     .         .         .         .         .         .         .         .   S     .         .         .         .
11830 2230   I     .         .         .         .         .         .         .         .   S     .         .         .         .
11835 2240   I     .         .         .         .         .         .         .         .   S     .         .         .         .
11840 2250   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11845 2260   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11850 2270   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11855 2280   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11900 2290   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11905 2300   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11910 2310 . I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . .
11915 2320   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11920 2330   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11925 2340   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11930 2350   I     .         .         .         .         .         .         .         .    S    .         .         .         .
11935 2360  I      .         .         .         .         .         .         .         .    S    .         .         .         .
11940 2370  I      .         .         .         .         .         .         .         .    S    .         .         .         .
11945 2380  I      .         .         .         .         .         .         .         .    S    .         .         .         .
11950 2390  I      .         .         .         .         .         .         .         .    S    .         .         .         .
11955 2400  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12000 2410 .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . .
12005 2420  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12010 2430  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12015 2440  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12020 2450  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12025 2460  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12030 2470  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12035 2480  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12040 2490  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12045 2500  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12050 2510 .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . .
12055 2520  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12100 2530  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12105 2540  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12110 2550  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12115 2560  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12120 2570  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12125 2580  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12130 2590  I      .         .         .         .         .         .         .         .    S    .         .         .         .
12135 2600  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12140 2610 .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S . . . . . . . . . . . . . . . . .
12145 2620  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12150 2630  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12155 2640  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12200 2650  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12205 2660  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12210 2670  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12215 2680  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12220 2690  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12225 2700  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12230 2710 .I. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S . . . . . . . . . . . . . . . . .
12235 2720  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12240 2730  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12245 2740  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12250 2750  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12255 2760  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12300 2770  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12305 2780  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12310 2790  I      .         .         .         .         .         .         .         .     S   .         .         .         .
12315 2800  I      .         .         .         .         .         .         .         .     S   .         .         .         .
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12320 2810 .I. . . . . S . . . . . .
12325 2820  I  .  .  .  .  .  .  .  .  S  .  .  .  .
12330 2830  I  .  .  .  .  .  .  .  .  S  .  .  .  .
12335 2840  I  .  .  .  .  .  .  .  .  S  .  .  .  .
12340 2850  I  .  .  .  .  .  .  .  .  S  .  .  .  .
12345 2860  I  .  .  .  .  .  .  .  .  S  .  .  .  .
12350 2870  I  .  .  .  .  .  .  .  .  S  .  .  .  .
12355 2880  I  .  .  .  .  .  .  .  .  S  .  .  .  .
20000 2890  I  .  .  .  .  .  .  .  .  S  .  .  .  .
20005 2900  I  .  .  .  .  .  .  .  .  S  .  .  .  .
20010 2910 .I. . . . . S . . . . . .
20015 2920 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20020 2930 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20025 2940 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20030 2950 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20035 2960 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20040 2970 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20045 2980 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20050 2990 I  .  .  .  .  .  .  .  .  S  .  .  .  .
20055 3000-I--------.---------.---------.---------.---------.---------.---------.---------.---------S---------.---------.---------.---------.
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HYDROGRAPH AT STATION RES1
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.	78.9	789.0	*	1		0820	101	0.	79.1	789.0	*	1		1640	201	7.	109.2	790.1
1		0005	2	0.	78.9	789.0	*	1		0825	102	0.	79.1	789.0	*	1		1645	202	7.	109.1	790.1
1		0010	3	0.	78.9	789.0	*	1		0830	103	0.	79.1	789.0	*	1		1650	203	7.	109.1	790.1
1		0015	4	0.	78.9	789.0	*	1		0835	104	0.	79.1	789.0	*	1		1655	204	7.	109.0	790.1
1		0020	5	0.	78.9	789.0	*	1		0840	105	0.	79.1	789.0	*	1		1700	205	7.	109.0	790.1
1		0025	6	0.	79.0	789.0	*	1		0845	106	0.	79.1	789.0	*	1		1705	206	7.	109.0	790.1
1		0030	7	0.	79.0	789.0	*	1		0850	107	0.	79.1	789.0	*	1		1710	207	6.	108.9	790.1
1		0035	8	0.	79.0	789.0	*	1		0855	108	0.	79.1	789.0	*	1		1715	208	6.	108.9	790.1
1		0040	9	0.	79.0	789.0	*	1		0900	109	0.	79.1	789.0	*	1		1720	209	6.	108.8	790.1
1		0045	10	0.	79.0	789.0	*	1		0905	110	0.	79.1	789.0	*	1		1725	210	6.	108.8	790.1
1		0050	11	0.	79.0	789.0	*	1		0910	111	0.	79.1	789.0	*	1		1730	211	6.	108.8	790.1
1		0055	12	0.	79.0	789.0	*	1		0915	112	0.	79.1	789.0	*	1		1735	212	6.	108.7	790.1
1		0100	13	0.	79.0	789.0	*	1		0920	113	0.	79.1	789.0	*	1		1740	213	6.	108.7	790.1
1		0105	14	0.	79.0	789.0	*	1		0925	114	0.	79.1	789.0	*	1		1745	214	6.	108.6	790.1
1		0110	15	0.	79.0	789.0	*	1		0930	115	0.	79.1	789.0	*	1		1750	215	6.	108.6	790.1
1		0115	16	0.	79.0	789.0	*	1		0935	116	0.	79.1	789.0	*	1		1755	216	6.	108.6	790.1
1		0120	17	0.	79.0	789.0	*	1		0940	117	0.	79.1	789.0	*	1		1800	217	6.	108.5	790.1
1		0125	18	0.	79.0	789.0	*	1		0945	118	0.	79.1	789.0	*	1		1805	218	6.	108.5	790.1
1		0130	19	0.	79.0	789.0	*	1		0950	119	0.	79.1	789.0	*	1		1810	219	6.	108.5	790.1
1		0135	20	0.	79.0	789.0	*	1		0955	120	0.	79.1	789.0	*	1		1815	220	5.	108.4	790.1
1		0140	21	0.	79.0	789.0	*	1		1000	121	0.	79.1	789.0	*	1		1820	221	5.	108.4	790.1
1		0145	22	0.	79.0	789.0	*	1		1005	122	0.	79.1	789.0	*	1		1825	222	5.	108.3	790.1
1		0150	23	0.	79.0	789.0	*	1		1010	123	0.	79.1	789.0	*	1		1830	223	5.	108.3	790.1
1		0155	24	0.	79.0	789.0	*	1		1015	124	0.	79.1	789.0	*	1		1835	224	5.	108.3	790.1
1		0200	25	0.	79.0	789.0	*	1		1020	125	0.	79.1	789.0	*	1		1840	225	5.	108.2	790.1
1		0205	26	0.	79.0	789.0	*	1		1025	126	0.	79.1	789.0	*	1		1845	226	5.	108.2	790.1
1		0210	27	0.	79.0	789.0	*	1		1030	127	0.	79.2	789.0	*	1		1850	227	5.	108.2	790.1
1		0215	28	0.	79.0	789.0	*	1		1035	128	0.	79.2	789.0	*	1		1855	228	5.	108.1	790.1
1		0220	29	0.	79.0	789.0	*	1		1040	129	0.	79.2	789.0	*	1		1900	229	5.	108.1	790.1
1		0225	30	0.	79.0	789.0	*	1		1045	130	0.	79.2	789.0	*	1		1905	230	5.	108.1	790.1
1		0230	31	0.	79.0	789.0	*	1		1050	131	0.	79.2	789.0	*	1		1910	231	5.	108.1	790.1
1		0235	32	0.	79.0	789.0	*	1		1055	132	0.	79.2	789.0	*	1		1915	232	5.	108.0	790.1
1		0240	33	0.	79.0	789.0	*	1		1100	133	0.	79.2	789.0	*	1		1920	233	5.	108.0	790.1
1		0245	34	0.	79.0	789.0	*	1		1105	134	0.	79.2	789.0	*	1		1925	234	5.	108.0	790.1
1		0250	35	0.	79.0	789.0	*	1		1110	135	0.	79.2	789.0	*	1		1930	235	4.	107.9	790.1
1		0255	36	0.	79.0	789.0	*	1		1115	136	0.	79.2	789.0	*	1		1935	236	4.	107.9	790.1
1		0300	37	0.	79.0	789.0	*	1		1120	137	0.	79.2	789.0	*	1		1940	237	4.	107.9	790.1
1		0305	38	0.	79.0	789.0	*	1		1125	138	0.	79.2	789.0	*	1		1945	238	4.	107.8	790.1
1		0310	39	0.	79.0	789.0	*	1		1130	139	0.	79.2	789.0	*	1		1950	239	4.	107.8	790.1
1		0315	40	0.	79.0	789.0	*	1		1135	140	0.	79.2	789.0	*	1		1955	240	4.	107.8	790.1
1		0320	41	0.	79.0	789.0	*	1		1140	141	0.	79.2	789.0	*	1		2000	241	4.	107.8	790.1
1		0325	42	0.	79.0	789.0	*	1		1145	142	0.	79.2	789.0	*	1		2005	242	4.	107.7	790.1
1		0330	43	0.	79.0	789.0	*	1		1150	143	0.	79.2	789.0	*	1		2010	243	4.	107.7	790.1
1		0335	44	0.	79.0	789.0	*	1		1155	144	0.	79.2	789.0	*	1		2015	244	4.	107.7	790.1
1		0340	45	0.	79.0	789.0	*	1		1200	145	0.	79.2	789.0	*	1		2020	245	4.	107.7	790.1
1		0345	46	0.	79.0	789.0	*	1		1205	146	0.	79.3	789.0	*	1		2025	246	4.	107.6	790.1
1		0350	47	0.	79.0	789.0	*	1		1210	147	0.	79.3	789.0	*	1		2030	247	4.	107.6	790.1
1		0355	48	0.	79.0	789.0	*	1		1215	148	0.	79.6	789.0	*	1		2035	248	4.	107.6	790.1
1		0400	49	0.	79.0	789.0	*	1		1220	149	0.	80.2	789.0	*	1		2040	249	4.	107.6	790.1
1		0405	50	0.	79.0	789.0	*	1		1225	150	0.	81.5	789.1	*	1		2045	250	4.	107.5	790.1
1		0410	51	0.	79.0	789.0	*	1		1230	151	0.	83.5	789.2	*	1		2050	251	4.	107.5	790.1
1		0415	52	0.	79.0	789.0	*	1		1235	152	0.	85.9	789.3	*	1		2055	252	4.	107.5	790.1
1		0420	53	0.	79.0	789.0	*	1		1240	153	0.	88.6	789.4	*	1		2100	253	4.	107.5	790.1
1		0425	54	0.	79.0	789.0	*	1		1245	154	0.	91.2	789.5	*	1		2105	254	4.	107.4	790.1
1		0430	55	0.	79.0	789.0	*	1		1250	155	0.	93.6	789.5	*	1		2110	255	3.	107.4	790.1
1		0435	56	0.	79.0	789.0	*	1		1255	156	0.	95.6	789.6	*	1		2115	256	3.	107.4	790.1
1		0440	57	0.	79.0	789.0	*	1		1300	157	0.	97.3	789.7	*	1		2120	257	3.	107.4	790.1
1		0445	58	0.	79.0	789.0	*	1		1305	158	0.	98.9	789.7	*	1		2125	258	3.	107.4	790.1
1		0450	59	0.	79.0	789.0	*	1		1310	159	0.	100.3	789.8	*	1		2130	259	3.	107.3	790.1
1		0455	60	0.	79.0	789.0	*	1		1315	160	0.	101.6	789.8	*	1		2135	260	3.	107.3	790.1
1		0500	61	0.	79.0	789.0	*	1		1320	161	0.	102.8	789.9	*	1		2140	261	3.	107.3	790.1
1		0505	62	0.	79.0	789.0	*	1		1325	162	0.	104.0	789.9	*	1		2145	262	3.	107.3	790.1
1		0510	63	0.	79.0	789.0	*	1		1330	163	0.	105.0	790.0	*	1		2150	263	3.	107.3	790.1
1		0515	64	0.	79.0	789.0	*	1		1335	164	0.	105.9	790.0	*	1		2155	264	3.	107.2	790.1

1	0520	65	0.	79.0	789.0	*	1	1340	165	2.	106.6	790.0	*	1	2200	265	3.	107.2	790.1
1	0525	66	0.	79.0	789.0	*	1	1345	166	3.	107.3	790.1	*	1	2205	266	3.	107.2	790.1
1	0530	67	0.	79.0	789.0	*	1	1350	167	4.	107.8	790.1	*	1	2210	267	3.	107.2	790.1
1	0535	68	0.	79.0	789.0	*	1	1355	168	5.	108.3	790.1	*	1	2215	268	3.	107.2	790.1
1	0540	69	0.	79.0	789.0	*	1	1400	169	6.	108.7	790.1	*	1	2220	269	3.	107.1	790.1
1	0545	70	0.	79.0	789.0	*	1	1405	170	7.	109.0	790.1	*	1	2225	270	3.	107.1	790.1
1	0550	71	0.	79.0	789.0	*	1	1410	171	7.	109.2	790.1	*	1	2230	271	3.	107.1	790.1
1	0555	72	0.	79.0	789.0	*	1	1415	172	7.	109.4	790.1	*	1	2235	272	3.	107.1	790.1
1	0600	73	0.	79.0	789.0	*	1	1420	173	8.	109.5	790.1	*	1	2240	273	3.	107.1	790.0
1	0605	74	0.	79.0	789.0	*	1	1425	174	8.	109.6	790.1	*	1	2245	274	3.	107.0	790.0
1	0610	75	0.	79.0	789.0	*	1	1430	175	8.	109.7	790.1	*	1	2250	275	3.	107.0	790.0
1	0615	76	0.	79.0	789.0	*	1	1435	176	8.	109.8	790.1	*	1	2255	276	3.	107.0	790.0
1	0620	77	0.	79.0	789.0	*	1	1440	177	8.	109.9	790.2	*	1	2300	277	3.	107.0	790.0
1	0625	78	0.	79.0	789.0	*	1	1445	178	8.	109.9	790.2	*	1	2305	278	3.	107.0	790.0
1	0630	79	0.	79.0	789.0	*	1	1450	179	8.	109.9	790.2	*	1	2310	279	3.	107.0	790.0
1	0635	80	0.	79.0	789.0	*	1	1455	180	9.	109.9	790.2	*	1	2315	280	3.	106.9	790.0
1	0640	81	0.	79.0	789.0	*	1	1500	181	9.	109.9	790.2	*	1	2320	281	2.	106.9	790.0
1	0645	82	0.	79.0	789.0	*	1	1505	182	8.	109.9	790.2	*	1	2325	282	2.	106.9	790.0
1	0650	83	0.	79.0	789.0	*	1	1510	183	8.	109.9	790.2	*	1	2330	283	2.	106.9	790.0
1	0655	84	0.	79.0	789.0	*	1	1515	184	8.	109.9	790.2	*	1	2335	284	2.	106.9	790.0
1	0700	85	0.	79.0	789.0	*	1	1520	185	8.	109.9	790.2	*	1	2340	285	2.	106.9	790.0
1	0705	86	0.	79.0	789.0	*	1	1525	186	8.	109.8	790.2	*	1	2345	286	2.	106.9	790.0
1	0710	87	0.	79.0	789.0	*	1	1530	187	8.	109.8	790.1	*	1	2350	287	2.	106.8	790.0
1	0715	88	0.	79.1	789.0	*	1	1535	188	8.	109.8	790.1	*	1	2355	288	2.	106.8	790.0
1	0720	89	0.	79.1	789.0	*	1	1540	189	8.	109.7	790.1	*	2	0000	289	2.	106.8	790.0
1	0725	90	0.	79.1	789.0	*	1	1545	190	8.	109.7	790.1	*	2	0005	290	2.	106.8	790.0
1	0730	91	0.	79.1	789.0	*	1	1550	191	8.	109.6	790.1	*	2	0010	291	2.	106.8	790.0
1	0735	92	0.	79.1	789.0	*	1	1555	192	8.	109.6	790.1	*	2	0015	292	2.	106.8	790.0
1	0740	93	0.	79.1	789.0	*	1	1600	193	8.	109.5	790.1	*	2	0020	293	2.	106.8	790.0
1	0745	94	0.	79.1	789.0	*	1	1605	194	8.	109.5	790.1	*	2	0025	294	2.	106.7	790.0
1	0750	95	0.	79.1	789.0	*	1	1610	195	8.	109.4	790.1	*	2	0030	295	2.	106.7	790.0
1	0755	96	0.	79.1	789.0	*	1	1615	196	7.	109.4	790.1	*	2	0035	296	2.	106.7	790.0
1	0800	97	0.	79.1	789.0	*	1	1620	197	7.	109.4	790.1	*	2	0040	297	2.	106.7	790.0
1	0805	98	0.	79.1	789.0	*	1	1625	198	7.	109.3	790.1	*	2	0045	298	2.	106.7	790.0
1	0810	99	0.	79.1	789.0	*	1	1630	199	7.	109.3	790.1	*	2	0050	299	2.	106.7	790.0
1	0815	100	0.	79.1	789.0	*	1	1635	200	7.	109.2	790.1	*	2	0055	300	2.	106.7	790.0

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  PEAK FLOW     TIME                                 MAXIMUM AVERAGE FLOW
                                          6-HR          24-HR         72-HR        24.92-HR
+   (CFS)       (HR)
                               (CFS)
+      9.       15.00                       7.             2.            2.             2.
                             (INCHES)     .006           .008          .008           .008
                              (AC-FT)       3.             5.            5.             5.

  PEAK STORAGE  TIME                                MAXIMUM AVERAGE STORAGE
                                          6-HR          24-HR         72-HR        24.92-HR
+   (AC-FT)     (HR)
      110.      14.92                     109.            94.           93.            93.

  PEAK STAGE    TIME                                 MAXIMUM AVERAGE STAGE
                                          6-HR          24-HR         72-HR        24.92-HR
+   (FEET)      (HR)
    790.15      15.00                   790.12         789.55        789.53         789.53

                         CUMULATIVE AREA =    10.62 SQ MI

1                                                        STATION      RES1

                             (I) INFLOW,  (O) OUTFLOW
            0.         50.       100.       150.       200.       250.       300.       350.       400.        0.         0.         0.         0.
                                                                                         (S) STORAGE
            0.          0.         0.         0.         0.         0.        70.        80.        90.      100.       110.         0.         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.         .         .         .         .         .
 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  27I         .         .         .         .         .         .         S.         .         .         .         .         .
 10215  28I         .         .         .         .         .         .         S.         .         .         .         .         .
 10220  29I         .         .         .         .         .         .         S.         .         .         .         .         .
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10225  30I
10230  31I                                                                  S.
10235  32I                                                                  S.
10240  33I                                                                  S.
10245  34I                                                                  S.
10250  35I                                                                  S.
10255  36I                                                                  S.
10300  37I                                                                  S.
10305  38I                                                                  S.
10310  39I                                                                  S.
10315  40I                                                                  S.
10320  41I                                                                  S.
10325  42I                                                                  S.
10330  43I                                                                  S.
10335  44I                                                                  S.
10340  45I                                                                  S.
10345  46I                                                                  S.
10350  47I                                                                  S.
10355  48I                                                                  S.
10400  49I                                                                  S.
10405  50I                                                                  S.
10410  51I                                                                  S.
10415  52I                                                                  S.
10420  53I                                                                  S.
10425  54I                                                                  S.
10430  55I                                                                  S.
10435  56I                                                                  S.
10440  57I                                                                  S.
10445  58I                                                                  S.
10450  59I                                                                  S.
10455  60I                                                                  S.
10500  61I                                                                  S.
10505  62I                                                                  S.
10510  63I                                                                  S.
10515  64I                                                                  S.
10520  65I                                                                  S.
10525  66I                                                                  S.
10530  67I                                                                  S.
10535  68I                                                                  S.
10540  69I                                                                  S.
10545  70I                                                                  S.
10550  71I                                                                  S.
10555  72I                                                                  S.
10600  73I                                                                  S.
10605  74I                                                                  S.
10610  75I                                                                  S.
10615  76I                                                                  S.
10620  77I                                                                  S.
10625  78I                                                                  S.
10630  79I                                                                  S.
10635  80I                                                                  S.
10640  81I                                                                  S.
10645  82I                                                                  S.
10650  83I                                                                  S.
10655  84I                                                                  S.
10700  85I                                                                  S.
10705  86I                                                                  S.
10710  87I                                                                  S.
10715  88I                                                                  S.
10720  89I                                                                  S.
10725  90I                                                                  S.
10730  91I                                                                  S.
10735  92I                                                                  S.
10740  93I                                                                  S.
10745  94I                                                                  S.
10750  95I                                                                  S.
10755  96I                                                                  S.
10800  97I                                                                  S.
10805  98I                                                                  S.
10810  99I                                                                  S.
10815 100I                                                                  S.
10820 101I                                                                  S.
10825 102I                                                                  S.
10830 103I                                                                  S.
10835 104I                                                                  S.
10840 105I                                                                  S.
10845 106I                                                                  S.
10850 107I                                                                  S.
10855 108I                                                                  S.
10900 109I                                                                  S.
10905 110I                                                                  S.
10910 111I                                                                  S.
10915 112I                                                                  S.
10920 113I                                                                  S.
10925 114I                                                                  S.
10930 115I                                                                  S.
10935 116I                                                                  S.
10940 117I                                                                  S.
10945 118I                                                                  S.
10950 119I                                                                  S.
10955 120I                                                                  S.
11000 121I                                                                  S.
11005 122I                                                                  S.
11010 123I                                                                  S.
11015 124I                                                                  S.
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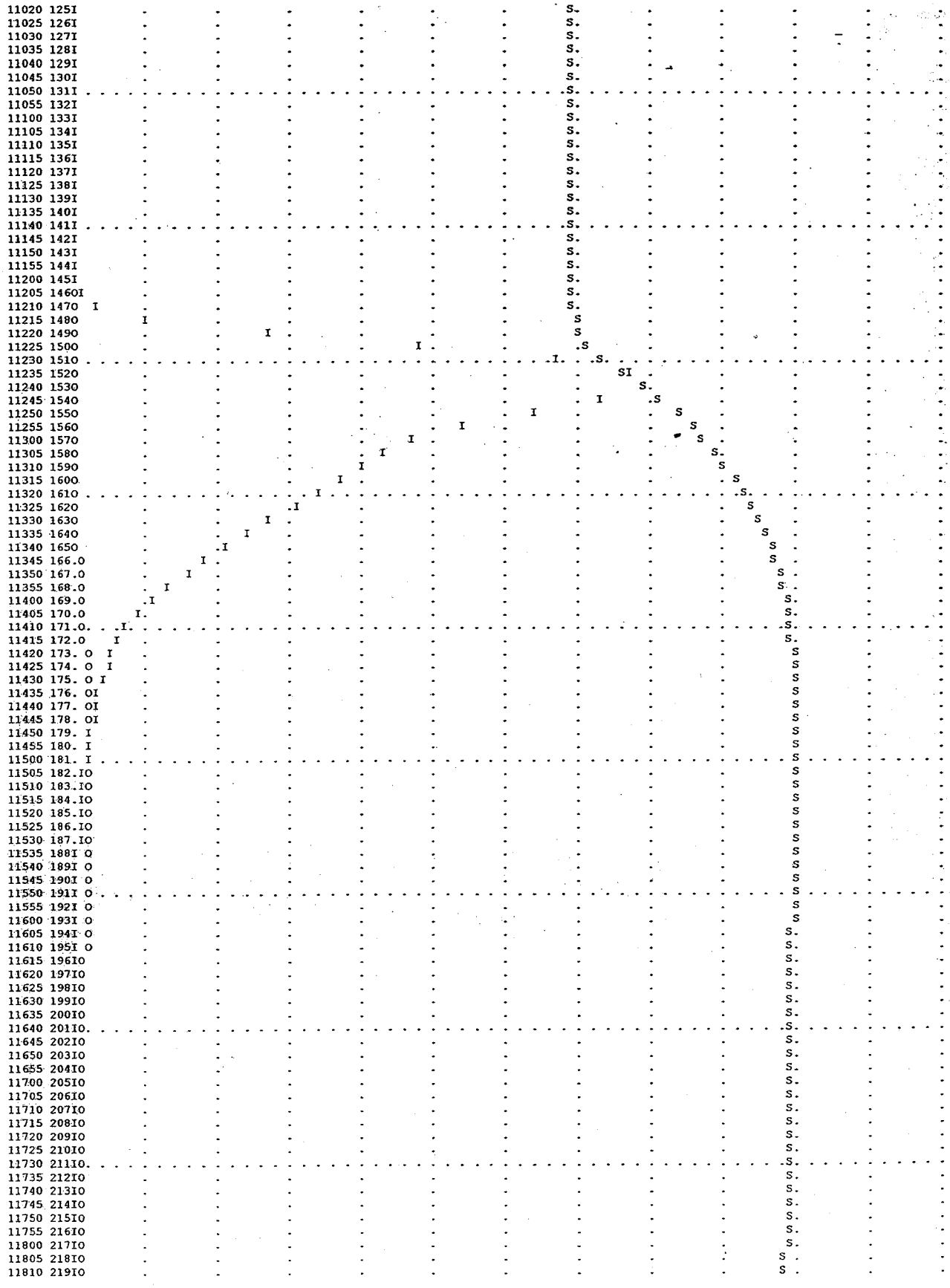

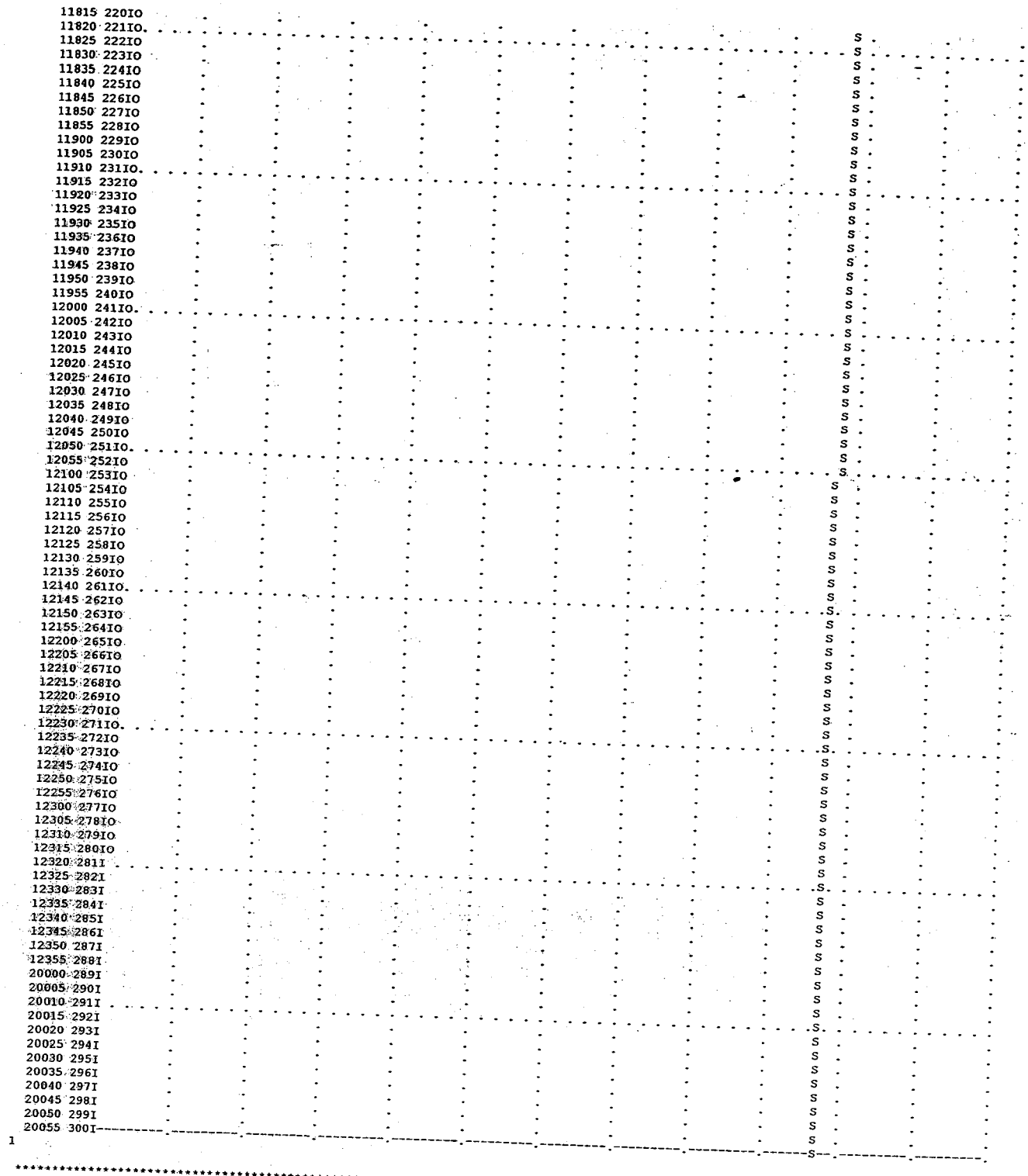

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HYDROGRAPH AT STATION RES1
PLAN 1, RATIO = .61

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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.	78.9	789.0	*	1		0820	101	0.	79.1	789.0	*	1		1640	201	77.	138.7	791.2
1		0005	2	0.	78.9	789.0	*	1		0825	102	0.	79.1	789.0	*	1		1645	202	75.	138.1	791.2
1		0010	3	0.	78.9	789.0	*	1		0830	103	0.	79.1	789.0	*	1		1650	203	73.	137.6	791.2

1	0015	4	0.	78.9	789.0	*	1	0835	104	0.	79.1	789.0	*	1	1655	204	71.	137.1	791.1
1	0020	5	0.	79.0	789.0	*	1	0840	105	0.	79.1	789.0	*	1	1700	205	69.	136.7	791.1
1	0025	6	0.	79.0	789.0	*	1	0845	106	0.	79.1	789.0	*	1	1705	206	67.	136.2	791.1
1	0030	7	0.	79.0	789.0	*	1	0850	107	0.	79.1	789.0	*	1	1710	207	65.	135.8	791.1
1	0035	8	0.	79.0	789.0	*	1	0855	108	0.	79.1	789.0	*	1	1715	208	64.	135.3	791.1
1	0040	9	0.	79.0	789.0	*	1	0900	109	0.	79.1	789.0	*	1	1720	209	62.	134.9	791.1
1	0045	10	0.	79.0	789.0	*	1	0905	110	0.	79.1	789.0	*	1	1725	210	60.	134.5	791.0
1	0050	11	0.	79.0	789.0	*	1	0910	111	0.	79.1	789.0	*	1	1730	211	59.	134.1	791.0
1	0055	12	0.	79.0	789.0	*	1	0915	112	0.	79.1	789.0	*	1	1735	212	57.	133.7	791.0
1	0100	13	0.	79.0	789.0	*	1	0920	113	0.	79.1	789.0	*	1	1740	213	56.	133.3	791.0
1	0105	14	0.	79.0	789.0	*	1	0925	114	0.	79.1	789.0	*	1	1745	214	55.	132.9	791.0
1	0110	15	0.	79.0	789.0	*	1	0930	115	0.	79.1	789.0	*	1	1750	215	54.	132.5	791.0
1	0115	16	0.	79.0	789.0	*	1	0935	116	0.	79.2	789.0	*	1	1755	216	53.	132.2	791.0
1	0120	17	0.	79.0	789.0	*	1	0940	117	0.	79.2	789.0	*	1	1800	217	52.	131.8	791.0
1	0125	18	0.	79.0	789.0	*	1	0945	118	0.	79.2	789.0	*	1	1805	218	52.	131.4	790.9
1	0130	19	0.	79.0	789.0	*	1	0950	119	0.	79.2	789.0	*	1	1810	219	51.	131.1	790.9
1	0135	20	0.	79.0	789.0	*	1	0955	120	0.	79.2	789.0	*	1	1815	220	50.	130.8	790.9
1	0140	21	0.	79.0	789.0	*	1	1000	121	0.	79.2	789.0	*	1	1820	221	50.	130.4	790.9
1	0145	22	0.	79.0	789.0	*	1	1005	122	0.	79.2	789.0	*	1	1825	222	49.	130.1	790.9
1	0150	23	0.	79.0	789.0	*	1	1010	123	0.	79.2	789.0	*	1	1830	223	48.	129.7	790.9
1	0155	24	0.	79.0	789.0	*	1	1015	124	0.	79.2	789.0	*	1	1835	224	48.	129.4	790.9
1	0200	25	0.	79.0	789.0	*	1	1020	125	0.	79.2	789.0	*	1	1840	225	47.	129.1	790.9
1	0205	26	0.	79.0	789.0	*	1	1025	126	0.	79.2	789.0	*	1	1845	226	46.	128.8	790.8
1	0210	27	0.	79.0	789.0	*	1	1030	127	0.	79.2	789.0	*	1	1850	227	46.	128.5	790.8
1	0215	28	0.	79.0	789.0	*	1	1035	128	0.	79.2	789.0	*	1	1855	228	45.	128.1	790.8
1	0220	29	0.	79.0	789.0	*	1	1040	129	0.	79.2	789.0	*	1	1900	229	44.	127.8	790.8
1	0225	30	0.	79.0	789.0	*	1	1045	130	0.	79.2	789.0	*	1	1905	230	44.	127.5	790.8
1	0230	31	0.	79.0	789.0	*	1	1050	131	0.	79.2	789.0	*	1	1910	231	43.	127.2	790.8
1	0235	32	0.	79.0	789.0	*	1	1055	132	0.	79.2	789.0	*	1	1915	232	43.	126.9	790.8
1	0240	33	0.	79.0	789.0	*	1	1100	133	0.	79.2	789.0	*	1	1920	233	42.	126.7	790.8
1	0245	34	0.	79.0	789.0	*	1	1105	134	0.	79.2	789.0	*	1	1925	234	41.	126.4	790.8
1	0250	35	0.	79.0	789.0	*	1	1110	135	0.	79.2	789.0	*	1	1930	235	41.	126.1	790.7
1	0255	36	0.	79.0	789.0	*	1	1115	136	0.	79.2	789.0	*	1	1935	236	40.	125.8	790.7
1	0300	37	0.	79.0	789.0	*	1	1120	137	0.	79.2	789.0	*	1	1940	237	40.	125.5	790.7
1	0305	38	0.	79.0	789.0	*	1	1125	138	0.	79.3	789.0	*	1	1945	238	39.	125.3	790.7
1	0310	39	0.	79.0	789.0	*	1	1130	139	0.	79.3	789.0	*	1	1950	239	39.	125.0	790.7
1	0315	40	0.	79.0	789.0	*	1	1135	140	0.	79.3	789.0	*	1	1955	240	38.	124.7	790.7
1	0320	41	0.	79.0	789.0	*	1	1140	141	0.	79.3	789.0	*	1	2000	241	38.	124.5	790.7
1	0325	42	0.	79.0	789.0	*	1	1145	142	0.	79.3	789.0	*	1	2005	242	37.	124.2	790.7
1	0330	43	0.	79.0	789.0	*	1	1150	143	0.	79.3	789.0	*	1	2010	243	37.	124.0	790.7
1	0335	44	0.	79.0	789.0	*	1	1155	144	0.	79.4	789.0	*	1	2015	244	36.	123.7	790.7
1	0340	45	0.	79.0	789.0	*	1	1200	145	0.	79.5	789.0	*	1	2020	245	36.	123.5	790.6
1	0345	46	0.	79.0	789.0	*	1	1205	146	0.	80.1	789.0	*	1	2025	246	35.	123.2	790.6
1	0350	47	0.	79.0	789.0	*	1	1210	147	0.	81.7	789.1	*	1	2030	247	35.	123.0	790.6
1	0355	48	0.	79.0	789.0	*	1	1215	148	0.	85.1	789.2	*	1	2035	248	34.	122.8	790.6
1	0400	49	0.	79.0	789.0	*	1	1220	149	0.	90.6	789.4	*	1	2040	249	34.	122.5	790.6
1	0405	50	0.	79.0	789.0	*	1	1225	150	0.	98.1	789.7	*	1	2045	250	33.	122.3	790.6
1	0410	51	0.	79.0	789.0	*	1	1230	151	2.	106.9	790.0	*	1	2050	251	33.	122.1	790.6
1	0415	52	0.	79.0	789.0	*	1	1235	152	20.	115.9	790.4	*	1	2055	252	32.	121.9	790.6
1	0420	53	0.	79.0	789.0	*	1	1240	153	37.	124.2	790.7	*	1	2100	253	32.	121.6	790.6
1	0425	54	0.	79.0	789.0	*	1	1245	154	52.	131.5	790.9	*	1	2105	254	32.	121.4	790.6
1	0430	55	0.	79.0	789.0	*	1	1250	155	74.	137.9	791.2	*	1	2110	255	31.	121.2	790.6
1	0435	56	0.	79.0	789.0	*	1	1255	156	95.	143.3	791.4	*	1	2115	256	31.	121.0	790.6
1	0440	57	0.	79.0	789.0	*	1	1300	157	113.	147.8	791.5	*	1	2120	257	30.	120.8	790.6
1	0445	58	0.	79.0	789.0	*	1	1305	158	127.	151.6	791.7	*	1	2125	258	30.	120.6	790.5
1	0450	59	0.	79.0	789.0	*	1	1310	159	140.	154.8	791.8	*	1	2130	259	29.	120.4	790.5
1	0455	60	0.	79.0	789.0	*	1	1315	160	149.	157.3	791.9	*	1	2135	260	29.	120.2	790.5
1	0500	61	0.	79.0	789.0	*	1	1320	161	157.	159.2	792.0	*	1	2140	261	29.	120.0	790.5
1	0505	62	0.	79.0	789.0	*	1	1325	162	163.	160.6	792.0	*	1	2145	262	28.	119.8	790.5
1	0510	63	0.	79.0	789.0	*	1	1330	163	168.	161.6	792.0	*	1	2150	263	28.	119.6	790.5
1	0515	64	0.	79.0	789.0	*	1	1335	164	171.	162.2	792.1	*	1	2155	264	28.	119.4	790.5
1	0520	65	0.	79.0	789.0	*	1	1340	165	172.	162.4	792.1	*	1	2200	265	27.	119.2	790.5
1	0525	66	0.	79.0	789.0	*	1	1345	166	172.	162.5	792.1	*	1	2205	266	27.	119.0	790.5
1	0530	67	0.	79.0	789.0	*	1	1350	167	171.	162.3	792.1	*	1	2210	267	26.	118.9	790.5
1	0535	68	0.	79.0	789.0	*	1	1355	168	170.	161.9	792.1	*	1	2215	268	26.	118.7	790.5
1	0540	69	0.	79.0	789.0	*	1	1400	169	167.	161.5	792.0	*	1	2220	269	26.	118.5	790.5
1	0545	70	0.	79.0	789.0	*	1	1405	170	164.	160.9	792.0	*	1	2225	270	25.	118.3	790.5
1	0550	71	0.	79.0	789.0	*	1	1410	171	161.	160.3	792.0	*	1	2230	271	25.	118.1	790.5
1	0555	72	0.	79.0	789.0	*	1	1415	172	158.	159.5	792.0	*	1	2235	272	25.	118.0	790.4
1	0600	73	0.	79.0	789.0	*	1	1420	173	155.	158.8	791.9	*	1	2240	273	24.	117.8	790.4
1	0605	74	0.	79.0	789.0	*	1	1425	174	152.	157.9	791.9	*	1	2245	274	24.	117.6	790.4
1	0610	75	0.	79.0	789.0	*	1	1430	175	149.	157.1	791.9	*	1	2250	275	24.	117.5	790.4
1	0615	76	0.	79.0	789.0	*	1	1435	176	145.	156.3	791.8	*	1	2255	276	23.	117.3	790.4
1	0620	77	0.	79.1	789.0	*	1	1440	177	142.	155.4	791.8	*	1	2300	277	23.	117.2	790.4
1	0625	78	0.	79.1	789.0	*	1	1445	178	139.	154.6	791.8	*	1	2305	278	23.	117.0	790.4
1	0630	79	0.	79.1	789.0	*	1	1450	179	136.	153.8	791.8	*	1	2310	279	22.	116.9	790.4
1	0635	80	0.	79.1	789.0	*	1	1455	180	132.	152.9	791.7	*	1	2315	280	22.	116.7	790.4
1	0640	81	0.	79.1	789.0	*	1	1500	181	129.	152.1	791.7	*	1	2320	281	22.	116.6	790.4
1	0645	82	0.	79.1	789.0	*	1	1505	182	126.	151.3	791.7	*	1	2325	282	21.	116.4	790.4
1	0650	83	0.	79.1	789.0	*	1	1510	183	123.	150.5	791.6	*	1	2330	283	21.	116.3	790.4
1	0655	84	0.	79.1	789.0	*	1	1515	184	120.	149.7	791.6	*	1	2335	284	21.	116.1	790.4
1	0700	85	0.	79.1	789.0	*	1	1520	185	117.	149.0	791.6	*	1	2340	285	21.	116.0	790.4
1	0705	86	0.	79.1	789.0	*	1	1525	186	114.	148.2	791.6	*	1	2345	286	20.	115.8	790.4
1	0710	87	0.	79.1	789.0	*	1	1530	187	111.	147.5	791.5	*	1	2350	287	20.	115.7	790.4
1	0715	88	0.	79.1	789.0	*	1	1535	188	108.	146.7	791.5	*	1	2355	288	20.	115.6	790.4
1	0720	89	0.	79.1	789.0	*	1	1540	189	105.	146.0	791.5	*	2	0000	289	20.	115.4	790.4
1	0725	90	0.	79.1	789.0	*	1	1545	190	103.	145.3	791.4	*	2	0005	290	19.	115.3	790.4
1	0730	91	0.	79.1	789.0	*	1	1550	191	100.	144.6	791.4	*	2	0010	291	19.	115.2	790.3
1	0735	92	0.	79.1	789.0	*	1	1555	192	97.	144.0	791.4	*	2	0015	292	19.	115.0	790.3
1	0740	93	0.	79.1	789.0	*	1	1600	193	95.	143.3	791.4	*	2	0020	293	18.	114.9	790.3
1	0745	94	0.	79.1	789.0	*	1	1605	194	92.	142.7	791.3	*	2	0025	294	18.	114.8	790.3
1	0750	95	0.	79.1	789.0	*	1	1610	195	90.	142.1	791.3	*	2	0030	295	18.	114.7	790.3
1	0755	96	0.	79.1	789.0	*	1	1615	196	88.	141.5	791.3	*	2	0035	296	18.	114.5	790.3
1	0800	97	0.	79.1	789.0	*	1	1620	197	85.	140.9	791.3	*	2	0040	297	18.	114.4	790.3
1	0805	98	0.	79.1	789.0	*	1	1625	198	83.	140.3	791.3	*	2	0045	298	17.	114.3	790.3

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1     0810  99      0.     79.1   789.0 *  1     1630 199     81.    139.7   791.2 *  2     0050 299     17.    114.2   790.3
1     0815 100      0.     79.1   789.0 *  1     1635 200     79.    139.2   791.2 *  2     0055 300     17.    114.1   790.3
                                          *                                                 *
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 172.	13.75	(CFS)	103.	33.	32.	32.
		(INCHES)	.090	.117	.117	.117
		(AC-FT)	51.	66.	66.	66.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 162.	13.75	145.	107.	106.	106.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ 792.07	13.75	791.44	790.03	789.99	789.99

CUMULATIVE AREA = 10.62 SQ MI

1

STATION RES1

```
                    (I) INFLOW,  (O) OUTFLOW
          0.     200.    400.    600.    800.   1000.   1200.   1400.      0.      0.      0.      0.      0.
                                                                    (S) STORAGE
          0.      0.      0.      0.      0.      0.     40.     80.    120.    160.    200.      0.      0.
DAHRMN PER
 10000   1I-------.-------.-------.-------.-------.-------.-------S-------.-------.-------.-------.-------
 10005   2I       .       .       .       .       .       .       S       .       .       .       .       .
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11205 146O     I
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11215 148O                I
11220 149O                        I
11225 150O                                I
11230 151O                                        I
11235 152.O                                           I
11240 153. O                                      I
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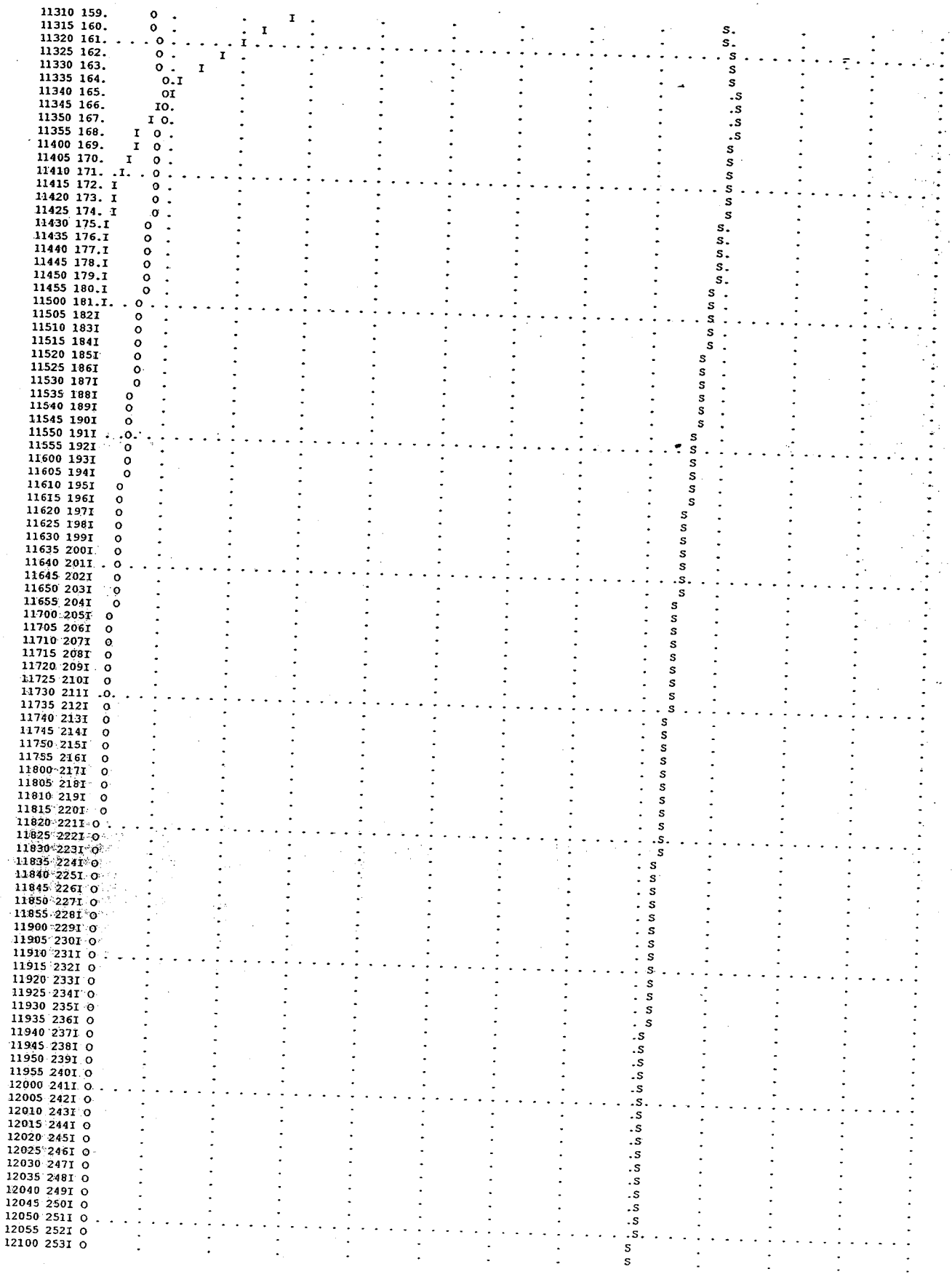
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20055 300IO-------.---------.---------.---------.---------.---------.---------.---------S.--------.---------.---------.---------.
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HYDROGRAPH AT STATION RES1
PLAN 1, RATIO = 1.00

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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.	78.9	789.0	1		0820	101	0.	79.2	789.0	1		1640	201	228.	172.9	792.4
1		0005	2	0.	78.9	789.0	1		0825	102	0.	79.2	789.0	1		1645	202	220.	171.4	792.4
1		0010	3	0.	78.9	789.0	1		0830	103	0.	79.2	789.0	1		1650	203	212.	169.9	792.3
1		0015	4	0.	78.9	789.0	1		0835	104	0.	79.2	789.0	1		1655	204	204.	168.5	792.3
1		0020	5	0.	79.0	789.0	1		0840	105	0.	79.2	789.0	1		1700	205	197.	167.1	792.2
1		0025	6	0.	79.0	789.0	1		0845	106	0.	79.2	789.0	1		1705	206	190.	165.8	792.2
1		0030	7	0.	79.0	789.0	1		0850	107	0.	79.2	789.0	1		1710	207	183.	164.5	792.1
1		0035	8	0.	79.0	789.0	1		0855	108	0.	79.2	789.0	1		1715	208	177.	163.3	792.1
1		0040	9	0.	79.0	789.0	1		0900	109	0.	79.2	789.0	1		1720	209	170.	162.1	792.1
1		0045	10	0.	79.0	789.0	1		0905	110	0.	79.2	789.0	1		1725	210	164.	160.9	792.0
1		0050	11	0.	79.0	789.0	1		0910	111	0.	79.3	789.0	1		1730	211	159.	159.8	792.0
1		0055	12	0.	79.0	789.0	1		0915	112	0.	79.3	789.0	1		1735	212	155.	158.7	791.9
1		0100	13	0.	79.0	789.0	1		0920	113	0.	79.3	789.0	1		1740	213	151.	157.7	791.9
1		0105	14	0.	79.0	789.0	1		0925	114	0.	79.3	789.0	1		1745	214	147.	156.7	791.9
1		0110	15	0.	79.0	789.0	1		0930	115	0.	79.3	789.0	1		1750	215	143.	155.7	791.8
1		0115	16	0.	79.0	789.0	1		0935	116	0.	79.3	789.0	1		1755	216	139.	154.7	791.8
1		0120	17	0.	79.0	789.0	1		0940	117	0.	79.3	789.0	1		1800	217	136.	153.8	791.8
1		0125	18	0.	79.0	789.0	1		0945	118	0.	79.3	789.0	1		1805	218	132.	152.8	791.7
1		0130	19	0.	79.0	789.0	1		0950	119	0.	79.3	789.0	1		1810	219	129.	152.0	791.7
1		0135	20	0.	79.0	789.0	1		0955	120	0.	79.3	789.0	1		1815	220	125.	151.1	791.7
1		0140	21	0.	79.0	789.0	1		1000	121	0.	79.3	789.0	1		1820	221	122.	150.2	791.6
1		0145	22	0.	79.0	789.0	1		1005	122	0.	79.3	789.0	1		1825	222	119.	149.4	791.6
1		0150	23	0.	79.0	789.0	1		1010	123	0.	79.3	789.0	1		1830	223	116.	148.6	791.6
1		0155	24	0.	79.0	789.0	1		1015	124	0.	79.3	789.0	1		1835	224	113.	147.8	791.5
1		0200	25	0.	79.0	789.0	1		1020	125	0.	79.3	789.0	1		1840	225	110.	147.1	791.5
1		0205	26	0.	79.0	789.0	1		1025	126	0.	79.3	789.0	1		1845	226	107.	146.3	791.5
1		0210	27	0.	79.0	789.0	1		1030	127	0.	79.4	789.0	1		1850	227	104.	145.6	791.5
1		0215	28	0.	79.0	789.0	1		1035	128	0.	79.4	789.0	1		1855	228	101.	144.9	791.4
1		0220	29	0.	79.0	789.0	1		1040	129	0.	79.4	789.0	1		1900	229	98.	144.2	791.4
1		0225	30	0.	79.0	789.0	1		1045	130	0.	79.4	789.0	1		1905	230	96.	143.6	791.4
1		0230	31	0.	79.0	789.0	1		1050	131	0.	79.4	789.0	1		1910	231	93.	142.9	791.4
1		0235	32	0.	79.0	789.0	1		1055	132	0.	79.4	789.0	1		1915	232	91.	142.3	791.3
1		0240	33	0.	79.0	789.0	1		1100	133	0.	79.4	789.0	1		1920	233	88.	141.7	791.3
1		0245	34	0.	79.0	789.0	1		1105	134	0.	79.4	789.0	1		1925	234	86.	141.1	791.3
1		0250	35	0.	79.0	789.0	1		1110	135	0.	79.4	789.0	1		1930	235	84.	140.5	791.3
1		0255	36	0.	79.0	789.0	1		1115	136	0.	79.4	789.0	1		1935	236	82.	139.9	791.2
1		0300	37	0.	79.0	789.0	1		1120	137	0.	79.4	789.0	1		1940	237	79.	139.4	791.2

1	0305	38	0.	79.0	789.0	*	1	1125	138	0.	79.4	789.0	*	1	1945	238	77.	138.8	791.2
1	0310	39	0.	79.0	789.0	*	1	1130	139	0.	79.5	789.0	*	1	1950	239	75.	138.3	791.2
1	0315	40	0.	79.0	789.0	*	1	1135	140	0.	79.5	789.0	*	1	1955	240	73.	137.8	791.2
1	0320	41	0.	79.0	789.0	*	1	1140	141	0.	79.6	789.0	*	1	2000	241	71.	137.3	791.2
1	0325	42	0.	79.0	789.0	*	1	1145	142	0.	80.0	789.0	*	1	2005	242	70.	136.8	791.1
1	0330	43	0.	79.0	789.0	*	1	1150	143	0.	81.0	789.1	*	1	2010	243	68.	136.4	791.1
1	0335	44	0.	79.0	789.0	*	1	1155	144	0.	83.9	789.2	*	1	2015	244	66.	135.9	791.1
1	0340	45	0.	79.0	789.0	*	1	1200	145	0.	90.7	789.4	*	1	2020	245	64.	135.5	791.1
1	0345	46	0.	79.0	789.0	*	1	1205	146	0.	104.0	789.9	*	1	2025	246	62.	135.0	791.1
1	0350	47	0.	79.0	789.0	*	1	1210	147	39.	125.1	790.7	*	1	2030	247	61.	134.6	791.1
1	0355	48	0.	79.0	789.0	*	1	1215	148	130.	152.4	791.7	*	1	2035	248	59.	134.2	791.0
1	0400	49	0.	79.0	789.0	*	1	1220	149	280.	182.8	792.8	*	1	2040	249	58.	133.8	791.0
1	0405	50	0.	79.0	789.0	*	1	1225	150	479.	213.6	793.9	*	1	2045	250	56.	133.4	791.0
1	0410	51	0.	79.0	789.0	*	1	1230	151	714.	243.7	794.9	*	1	2050	251	55.	133.0	791.0
1	0415	52	0.	79.0	789.0	*	1	1235	152	976.	272.1	795.9	*	1	2055	252	54.	132.6	791.0
1	0420	53	0.	79.0	789.0	*	1	1240	153	1237.	297.3	796.8	*	1	2100	253	53.	132.3	791.0
1	0425	54	0.	79.0	789.0	*	1	1245	154	1637.	316.8	797.5	*	1	2105	254	53.	131.9	791.0
1	0430	55	0.	79.0	789.0	*	1	1250	155	1934.	328.6	797.9	*	1	2110	255	52.	131.6	790.9
1	0435	56	0.	79.0	789.0	*	1	1255	156	1907.	334.6	798.1	*	1	2115	256	51.	131.2	790.9
1	0440	57	0.	79.1	789.0	*	1	1300	157	1702.	337.6	798.2	*	1	2120	257	51.	130.9	790.9
1	0445	58	0.	79.1	789.0	*	1	1305	158	1620.	338.8	798.2	*	1	2125	258	50.	130.5	790.9
1	0450	59	0.	79.1	789.0	*	1	1310	159	1688.	337.8	798.2	*	1	2130	259	49.	130.2	790.9
1	0455	60	0.	79.1	789.0	*	1	1315	160	1968.	333.7	798.0	*	1	2135	260	48.	129.8	790.9
1	0500	61	0.	79.1	789.0	*	1	1320	161	1899.	327.2	797.8	*	1	2140	261	48.	129.5	790.9
1	0505	62	0.	79.1	789.0	*	1	1325	162	1724.	320.2	797.6	*	1	2145	262	47.	129.2	790.9
1	0510	63	0.	79.1	789.0	*	1	1330	163	1551.	313.4	797.3	*	1	2150	263	47.	128.9	790.8
1	0515	64	0.	79.1	789.0	*	1	1335	164	1386.	306.8	797.1	*	1	2155	264	46.	128.6	790.8
1	0520	65	0.	79.1	789.0	*	1	1340	165	1270.	300.5	796.9	*	1	2200	265	45.	128.2	790.8
1	0525	66	0.	79.1	789.0	*	1	1345	166	1205.	294.3	796.7	*	1	2205	266	45.	127.9	790.8
1	0530	67	0.	79.1	789.0	*	1	1350	167	1140.	288.0	796.5	*	1	2210	267	44.	127.6	790.8
1	0535	68	0.	79.1	789.0	*	1	1355	168	1077.	281.9	796.3	*	1	2215	268	43.	127.3	790.8
1	0540	69	0.	79.1	789.0	*	1	1400	169	1015.	276.0	796.1	*	1	2220	269	43.	127.0	790.8
1	0545	70	0.	79.1	789.0	*	1	1405	170	959.	270.2	795.9	*	1	2225	270	42.	126.8	790.8
1	0550	71	0.	79.1	789.0	*	1	1410	171	907.	264.6	795.7	*	1	2230	271	42.	126.5	790.8
1	0555	72	0.	79.1	789.0	*	1	1415	172	857.	259.3	795.5	*	1	2235	272	41.	126.2	790.7
1	0600	73	0.	79.1	789.0	*	1	1420	173	809.	254.1	795.3	*	1	2240	273	41.	125.9	790.7
1	0605	74	0.	79.1	789.0	*	1	1425	174	763.	249.2	795.1	*	1	2245	274	40.	125.6	790.7
1	0610	75	0.	79.1	789.0	*	1	1430	175	720.	244.5	795.0	*	1	2250	275	39.	125.4	790.7
1	0615	76	0.	79.1	789.0	*	1	1435	176	684.	239.9	794.8	*	1	2255	276	39.	125.1	790.7
1	0620	77	0.	79.1	789.0	*	1	1440	177	650.	235.6	794.7	*	1	2300	277	38.	124.8	790.7
1	0625	78	0.	79.1	789.0	*	1	1445	178	617.	231.4	794.5	*	1	2305	278	38.	124.6	790.7
1	0630	79	0.	79.1	789.0	*	1	1450	179	585.	227.4	794.4	*	1	2310	279	37.	124.3	790.7
1	0635	80	0.	79.1	789.0	*	1	1455	180	555.	223.7	794.2	*	1	2315	280	37.	124.1	790.7
1	0640	81	0.	79.1	789.0	*	1	1500	181	527.	220.1	794.1	*	1	2320	281	36.	123.8	790.7
1	0645	82	0.	79.1	789.0	*	1	1505	182	499.	216.7	794.0	*	1	2325	282	36.	123.6	790.7
1	0650	83	0.	79.1	789.0	*	1	1510	183	478.	213.4	793.9	*	1	2330	283	35.	123.3	790.6
1	0655	84	0.	79.1	789.0	*	1	1515	184	457.	210.3	793.8	*	1	2335	284	35.	123.1	790.6
1	0700	85	0.	79.1	789.0	*	1	1520	185	436.	207.3	793.7	*	1	2340	285	34.	122.8	790.6
1	0705	86	0.	79.1	789.0	*	1	1525	186	417.	204.4	793.6	*	1	2345	286	34.	122.6	790.6
1	0710	87	0.	79.2	789.0	*	1	1530	187	399.	201.6	793.5	*	1	2350	287	33.	122.4	790.6
1	0715	88	0.	79.2	789.0	*	1	1535	188	381.	199.0	793.4	*	1	2355	288	33.	122.2	790.6
1	0720	89	0.	79.2	789.0	*	1	1540	189	364.	196.5	793.3	*	2	0000	289	33.	121.9	790.6
1	0725	90	0.	79.2	789.0	*	1	1545	190	348.	194.0	793.2	*	2	0005	290	32.	121.7	790.6
1	0730	91	0.	79.2	789.0	*	1	1550	191	332.	191.7	793.1	*	2	0010	291	32.	121.5	790.6
1	0735	92	0.	79.2	789.0	*	1	1555	192	317.	189.5	793.0	*	2	0015	292	31.	121.3	790.6
1	0740	93	0.	79.2	789.0	*	1	1600	193	305.	187.4	793.0	*	2	0020	293	31.	121.1	790.6
1	0745	94	0.	79.2	789.0	*	1	1605	194	294.	185.4	792.9	*	2	0025	294	30.	120.9	790.6
1	0750	95	0.	79.2	789.0	*	1	1610	195	284.	183.4	792.8	*	2	0030	295	30.	120.7	790.5
1	0755	96	0.	79.2	789.0	*	1	1615	196	273.	181.5	792.7	*	2	0035	296	30.	120.5	790.5
1	0800	97	0.	79.2	789.0	*	1	1620	197	264.	179.6	792.7	*	2	0040	297	29.	120.3	790.5
1	0805	98	0.	79.2	789.0	*	1	1625	198	254.	177.9	792.6	*	2	0045	298	29.	120.1	790.5
1	0810	99	0.	79.2	789.0	*	1	1630	199	245.	176.2	792.6	*	2	0050	299	28.	119.9	790.5
1	0815	100	0.	79.2	789.0	*	1	1635	200	236.	174.5	792.5	*	2	0055	300	28.	119.7	790.5

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1968.	13.25		653.	179.	173.	173.
		(INCHES)	.571	.629	.629	.629
		(AC-FT)	324.	356.	356.	356.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
339.	13.08	223.	130.	128.	128.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
798.20	13.08	794.20	790.86	790.79	790.79

CUMULATIVE AREA = 10.62 SQ MI

1 STATION RES1

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                    (I) INFLOW,   (O) OUTFLOW
        0.     1000.    2000.    3000.    4000.    5000.       0.       0.       0.       0.       0.       0.       0.
                                                                                     (S) STORAGE
        0.        0.       0.       0.       0.       0.       0.     100.     200.     300.     400.       0.       0.
DAHRMN PER
 10000  1I---------.---------.---------.---------.---------.---------.-------S-.---------.---------.---------.---------.---------.
 10005  2I         .         .         .         .         .         .       S .         .         .         .         .         .
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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  27I                                    S
10215  28I                                    S
10220  29I                                    S
10225  30I                                    S
10230  31I                                    S
10235  32I                                    S
10240  33I                                    S
10245  34I                                    S
10250  35I                                    S
10255  36I                                    S
10300  37I                                    S
10305  38I                                    S
10310  39I                                    S
10315  40I                                    S
10320  41I                                    S
10325  42I                                    S
10330  43I                                    S
10335  44I                                    S
10340  45I                                    S
10345  46I                                    S
10350  47I                                    S
10355  48I                                    S
10400  49I                                    S
10405  50I                                    S
10410  51I                                    S
10415  52I                                    S
10420  53I                                    S
10425  54I                                    S
10430  55I                                    S
10435  56I                                    S
10440  57I                                    S
10445  58I                                    S
10450  59I                                    S
10455  60I                                    S
10500  61I                                    S
10505  62I                                    S
10510  63I                                    S
10515  64I                                    S
10520  65I                                    S
10525  66I                                    S
10530  67I                                    S
10535  68I                                    S
10540  69I                                    S
10545  70I                                    S
10550  71I                                    S
10555  72I                                    S
10600  73I                                    S
10605  74I                                    S
10610  75I                                    S
10615  76I                                    S
10620  77I                                    S
10625  78I                                    S
10630  79I                                    S
10635  80I                                    S
10640  81I                                    S
10645  82I                                    S
10650  83I                                    S
10655  84I                                    S
10700  85I                                    S
10705  86I                                    S
10710  87I                                    S
10715  88I                                    S
10720  89I                                    S
10725  90I                                    S
10730  91I                                    S
10735  92I                                    S
10740  93I                                    S
10745  94I                                    S
10750  95I                                    S
10755  96I                                    S
10800  97I                                    S
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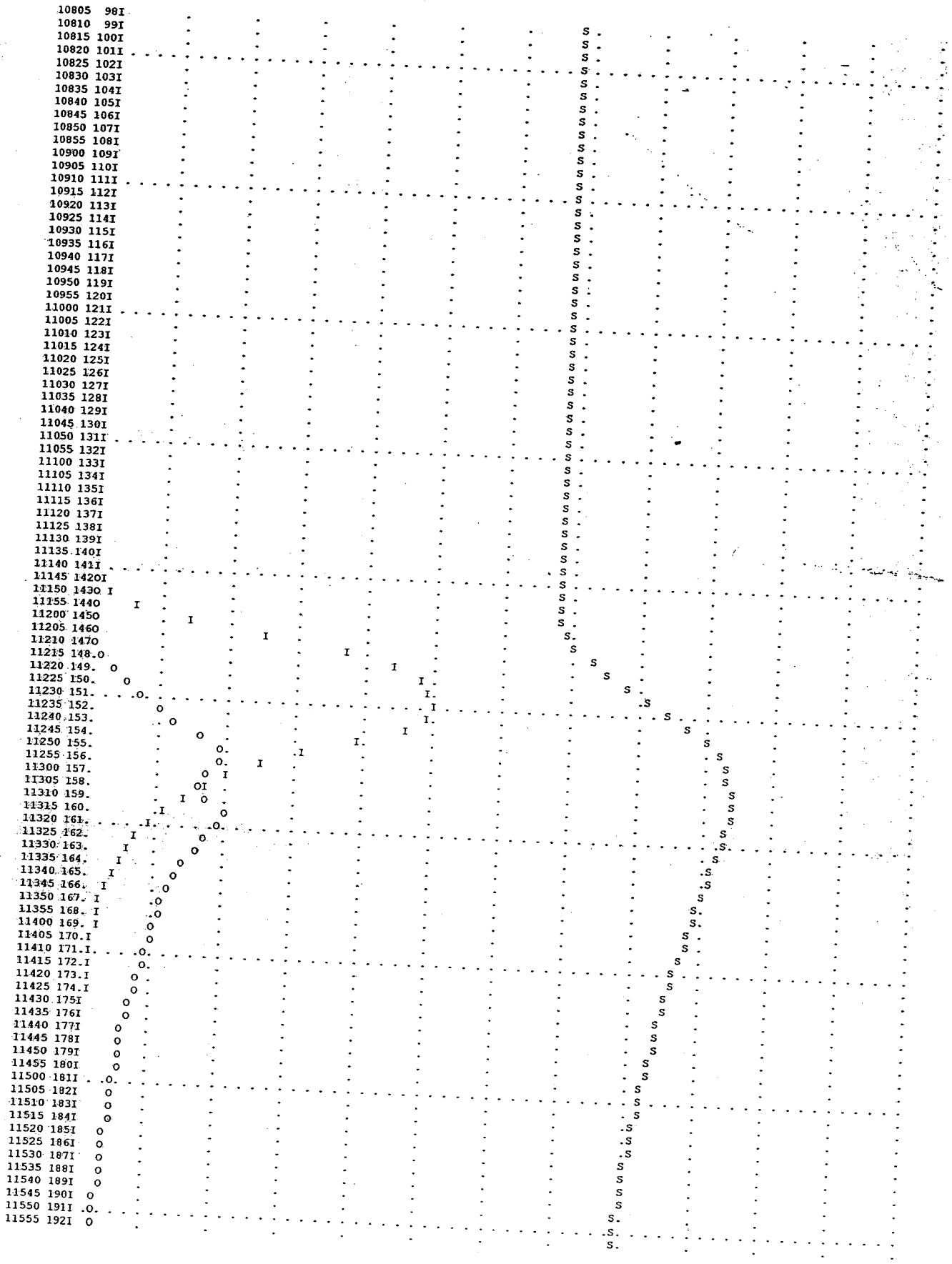
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10835 104I
10840 105I
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10900 109I
10905 110I
10910 111I
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11150 143O I
11155 144O I
11200 145O I
11205 146O I
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11230 151. .O. I
11235 152. O I
11240 153. O I
11245 154. O I
11250 155. O I
11255 156. O. I
11300 157. O. I
11305 158. O I
11310 159. OI
11315 160. I O
11320 161. .I O
11325 162. I O
11330 163. I O
11335 164. I O
11340 165. I O
11345 166. I O
11350 167. I O
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11400 169. I O
11405 170.I O
11410 171.I. .O.
11415 172.I O.
11420 173.I O
11425 174.I O
11430 175I O
11435 176I O
11440 177I O
11445 178I O
11450 179I O
11455 180I O
11500 181I .O.
11505 182I O
11510 183I O
11515 184I O
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11525 186I O
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11540 189I O
11545 190I O
11550 191I .O.
11555 192I O

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11600 193I  O
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12340 285I
12345 286I
12350 287I
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12355 288I
20000 289I
20005 290I
20010 291I
20015 292I
20020 293I
20025 294I
20030 295I
20035 296I
20040 297I
20045 298I
20050 299I
20055 300I
1
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*            *
302 KK   *   RB1   *
*            *
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ROUTE FLOW TO CP6.5

HYDROGRAPH ROUTING DATA

305 RL — ROUTING LOSSES

QLOSS	.00	INITIAL LOSS
CLOSS	.00	ADDITIONAL FRACTION LOST
PERCRT	10.00	CHANNEL PERCOLATION RATE
ELVINV	790.00	INVERT ELEVATION

304 RS — STORAGE ROUTING

NSTPS	2	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	-1.00	INITIAL CONDITION
X	.00	WORKING R AND D COEFFICIENT

306 RC — NORMAL DEPTH CHANNEL

ANL	.030	LEFT OVERBANK N-VALUE
ANCH	.030	MAIN CHANNEL N-VALUE
ANR	.030	RIGHT OVERBANK N-VALUE
RLNTH	1622.	REACH LENGTH
SEL	.0020	ENERGY SLOPE
ELMAX	765.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---			+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---	
308 RY	ELEVATION	765.00	765.00	765.00	760.00	760.00	765.00	765.00	765.00
307 RX	DISTANCE	.00	100.00	200.00	216.50	316.50	333.00	433.00	533.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.99	1.99	3.02	4.06	5.11	6.19	7.28	8.38	9.51
OUTFLOW	.00	24.07	76.60	150.94	244.46	355.56	483.17	626.52	784.99	958.11
ELEVATION	760.00	760.26	760.53	760.79	761.05	761.32	761.58	761.84	762.11	762.37
STORAGE	10.65	11.81	12.99	14.18	15.39	16.61	17.86	19.12	20.40	21.70
OUTFLOW	1145.53	1346.91	1562.03	1790.66	2032.64	2287.82	2556.09	2837.34	3131.51	3438.57
ELEVATION	762.63	762.90	763.16	763.42	763.68	763.95	764.21	764.47	764.74	765.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 785. TO 3439.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

*** *** *** *** ***

HYDROGRAPH AT STATION RB1
FOR PLAN 1, RATIO = .34

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ 760.00	.00	760.00	760.00	760.00	760.00

CUMULATIVE AREA = 10.62 SQ MI

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     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      RB1
                      FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+       8.     15.58                 6.          2.          2.          2.
                         (INCHES)  .006        .008        .008        .008
                          (AC-FT)    3.          4.          4.          4.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        0.     15.42                 0.          0.          0.          0.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   760.09      15.58              760.07      760.02      760.02      760.02

                    CUMULATIVE AREA =   10.62 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      RB1
                      FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     172.     13.83               102.         33.         32.         32.
                         (INCHES)  .089        .116        .116        .116
                          (AC-FT)   51.         66.         66.         66.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        2.     13.83                 1.          0.          0.          0.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   760.85      13.83              760.60      760.22      760.22      760.22

                    CUMULATIVE AREA =   10.62 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      RB1
                      FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+    1920.     13.33               651.        179.        172.        172.
                         (INCHES)  .570        .627        .627        .627
                          (AC-FT)  323.        355.        355.        355.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
        7.     13.33                 3.          1.          1.          1.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   763.56      13.33              761.73      760.55      760.53      760.53

                    CUMULATIVE AREA =   10.62 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 309 KK     *     CP6.5  *
            *            *
            **************
                      COMBINE Q FROM BASIN 6.5, ROUTED FLOW FROM BASIN 5.3,
                      AND ROUTED FLOW FROM SOUTH DETENTION BASIN

 312 HC          HYDROGRAPH COMBINATION
                      ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
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                                                                                  ***
     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP6.5
                     FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                  6-HR        24-HR        72-HR      24.92-HR
                                  (CFS)
+     0.        .00                     0.           0.           0.           0.
                                (INCHES)       .000         .000         .000         .000
                                 (AC-FT)          0.           0.           0.           0.

                    CUMULATIVE AREA =   12.77 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP6.5
                     FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                  6-HR        24-HR        72-HR      24.92-HR
                                  (CFS)
+    38.        12.92                  15.           5.           5.           5.
                                (INCHES)       .011         .014         .014         .014
                                 (AC-FT)          7.           9.           9.           9.

                    CUMULATIVE AREA =   12.77 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP6.5
                     FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                  6-HR        24-HR        72-HR      24.92-HR
                                  (CFS)
+   219.        13.58                 131.          42.          41.          41.
                                (INCHES)       .095         .123         .123         .123
                                 (AC-FT)         65.          84.          84.          84.

                    CUMULATIVE AREA =   12.77 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP6.5
                     FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                  6-HR        24-HR        72-HR      24.92-HR
                                  (CFS)
+  2179.        12.92                 765.         212.         204.         204.
                                (INCHES)       .557         .617         .617         .617
                                 (AC-FT)        380.         420.         420.         420.

                    CUMULATIVE AREA =   12.77 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              **************
              *            *
313 KK        *     6R5    *
              *            *
              **************
                    ROUTE FLOW TO CP6

          HYDROGRAPH ROUTING DATA

316 RL          ROUTING LOSSES
                      QLOSS        .00  INITIAL LOSS
                      CLOSS        .00  ADDITIONAL FRACTION LOST
                     PERCRT      10.00  CHANNEL PERCOLATION RATE
                     ELVINV     757.00  INVERT ELEVATION

315 RS          STORAGE ROUTING
                      NSTPS          2  NUMBER OF SUBREACHES
                       ITYP       FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC      -1.00  INITIAL CONDITION
                          X        .00  WORKING R AND D COEFFICIENT

317 RC          NORMAL DEPTH CHANNEL
                        ANL       .030  LEFT OVERBANK N-VALUE
```

ANCH	.030	MAIN CHANNEL N-VALUE
ANR	.030	RIGHT OVERBANK N-VALUE
RLNTH	2505.	REACH LENGTH
SEL	.0020	ENERGY SLOPE
ELMAX	765.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---	+ ------ MAIN CHANNEL	-------	-------	------- + ---	RIGHT OVERBANK ---	
319 RY	ELEVATION	765.00	765.00	765.00	760.00	760.00	765.00	765.00	765.00
318 RX	DISTANCE	.00	100.00	200.00	216.50	316.50	333.00	433.00	533.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	1.53	3.08	4.66	6.26	7.90	9.55	11.24	12.95	14.69
OUTFLOW	.00	24.07	76.60	150.94	244.46	355.56	483.17	626.52	784.99	958.11
ELEVATION	760.00	760.26	760.53	760.79	761.05	761.32	761.58	761.84	762.11	762.37
STORAGE	16.45	18.24	20.05	21.90	23.77	25.66	27.58	29.53	31.50	33.51
OUTFLOW	1145.53	1346.91	1562.03	1790.66	2032.64	2287.82	2556.09	2837.34	3131.51	3438.57
ELEVATION	762.63	762.90	763.16	763.42	763.68	763.95	764.21	764.47	764.74	765.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 2837. TO 3439.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

*** *** *** *** ***

HYDROGRAPH AT STATION 6R5
FOR PLAN 1, RATIO = .34

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 0.	.00		0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
0.	.00	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
760.00	.00	760.00	760.00	760.00	760.00

CUMULATIVE AREA = 12.77 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R5
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 19.	13.67		12.	4.	4.	4.
		(INCHES)	.009	.011	.011	.011
		(AC-FT)	6.	7.	7.	7.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	13.67	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
760.23	13.67	760.14	760.05	760.04	760.04

CUMULATIVE AREA = 12.77 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R5
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 201.	13.75		118.	37.	36.	36.
		(INCHES)	.086	.109	.109	.109
		(AC-FT)	58.	74.	74.	74.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR

```
+  (AC-FT)      (HR)
       3.      13.75                    2.          1.          1.          1.

  PEAK STAGE    TIME                                MAXIMUM AVERAGE STAGE
+   (FEET)      (HR)                    6-HR       24-HR       72-HR     24.92-HR
    760.95     13.75                  760.68      760.25      760.24      760.24

                                CUMULATIVE AREA =   12.77 SQ MI

      ***                ***          ***          ***          ***

                              HYDROGRAPH AT STATION      6R5
                                FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
+   (CFS)       (HR)                    6-HR       24-HR       72-HR     24.92-HR
                                       (CFS)
+   2060.      13.08                    739.        203.        195.        195.
                                    (INCHES)       .538        .591        .591        .591
                                     (AC-FT)       366.        402.        402.        402.

  PEAK STORAGE  TIME                                MAXIMUM AVERAGE STORAGE
+  (AC-FT)      (HR)                    6-HR       24-HR       72-HR     24.92-HR
      12.      13.08                      6.          2.          2.          2.

  PEAK STAGE    TIME                                MAXIMUM AVERAGE STAGE
+   (FEET)      (HR)                    6-HR       24-HR       72-HR     24.92-HR
    763.73     13.08                  761.91      760.61      760.59      760.59

                                CUMULATIVE AREA =   12.77 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
320 KK      *     6.9    *
            *            *
            **************
                      BASIN 6.9
                       THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                       L=      .75  Lca=      .18   S=   61.0  Kn= .050  LAG=  15.4
                       PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                      THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL

131 IN          TIME DATA FOR INPUT TIME SERIES
                     JXMIN          15  TIME INTERVAL IN MINUTES
                    JXDATE     1    0  STARTING DATE
                    JXTIME          0  STARTING TIME

              SUBBASIN RUNOFF DATA

325 BA          SUBBASIN CHARACTERISTICS
                     TAREA        .60  SUBBASIN AREA

                PRECIPITATION DATA

327 PB               STORM       4.09  BASIN TOTAL PRECIPITATION

327 PI          INCREMENTAL PRECIPITATION PATTERN
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .01     .01     .01     .01     .01     .00     .01     .01     .01     .01
                  .05     .07     .07     .07     .01     .02     .02     .02     .05     .05
                  .01     .01     .01     .01     .01     .01     .01     .01     .01     .01
                  .00     .00     .00     .00     .00     .01     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                  .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00

339 LG          GREEN AND AMPT LOSS RATE
                     STRTL        .44  STARTING LOSS
                       DTH        .35  MOISTURE DEFICIT
                      PSIF       4.30  WETTING FRONT SUCTION
                     XKSAT        .62  HYDRAULIC CONDUCTIVITY
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

339 UI          INPUT UNITGRAPH,  11 ORDINATES,  VOLUME = 1.34
                   168.0     607.0     921.0    1533.0    1260.0     842.0     479.0     225.0     121.0      42.0
                    42.0
                                                                  ***

    TOTAL RAINFALL =    4.09, TOTAL LOSS =    3.32, TOTAL EXCESS =     .77

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     758.     12.17                  67.         17.         16.         16.
                        (INCHES)    1.037       1.037       1.037       1.037
                         (AC-FT)     33.         33.         33.         33.

                        CUMULATIVE AREA =     .60 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      6.9
                          FOR PLAN 1, RATIO =  .34

    TOTAL RAINFALL =    1.39, TOTAL LOSS =    1.39, TOTAL EXCESS =     .00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+       0.       .00                   0.          0.          0.          0.
                        (INCHES)     .000        .000        .000        .000
                         (AC-FT)      0.          0.          0.          0.

                        CUMULATIVE AREA =     .60 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      6.9
                          FOR PLAN 1, RATIO =  .50

    TOTAL RAINFALL =    2.04, TOTAL LOSS =    2.04, TOTAL EXCESS =     .00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+       0.     12.25                   0.          0.          0.          0.
                        (INCHES)     .000        .000        .000        .000
                         (AC-FT)      0.          0.          0.          0.

                        CUMULATIVE AREA =     .60 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      6.9
                          FOR PLAN 1, RATIO =  .61

    TOTAL RAINFALL =    2.49, TOTAL LOSS =    2.40, TOTAL EXCESS =     .10

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     124.     12.25                   8.          2.          2.          2.
                        (INCHES)     .129        .129        .129        .129
                         (AC-FT)      4.          4.          4.          4.

                        CUMULATIVE AREA =     .60 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      6.9
                          FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.09, TOTAL LOSS =    3.32, TOTAL EXCESS =     .77

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     758.     12.17                  67.         17.         16.         16.
```

(INCHES)	1.037	1.037	1.037	1.037
(AC-FT)	33.	33.	33.	33.

CUMULATIVE AREA = .60 SQ MI

*** ***

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              **************
              *            *
343 KK        *     6.6    *
              *            *
              **************
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BASIN 6.6
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 2.1 Lca= .94 S= 257.0 Kn= .060 LAG= 39.0
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

348 BA SUBBASIN CHARACTERISTICS

TAREA 1.05 SUBBASIN AREA

PRECIPITATION DATA

327 PB STORM 4.09 BASIN TOTAL PRECIPITATION

327 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.01	.01	.01	.01
.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

349 LG GREEN AND AMPT LOSS RATE

STRTL	.29	STARTING LOSS
DTH	.26	MOISTURE DEFICIT
PSIF	7.30	WETTING FRONT SUCTION
XKSAT	.15	HYDRAULIC CONDUCTIVITY
RTIMP	9.00	PERCENT IMPERVIOUS AREA

344 UI INPUT UNITGRAPH, 11 ORDINATES, VOLUME = .50

112.0	402.0	609.0	1015.0	809.0	538.0	293.0	142.0	73.0	28.0
28.0									

***

TOTAL RAINFALL = 4.09, TOTAL LOSS = 2.42, TOTAL EXCESS = 1.67

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 802.	12.08		88.	23.	23.	23.
		(INCHES)	.776	.829	.829	.829
		(AC-FT)	43.	46.	46.	46.

CUMULATIVE AREA = 1.05 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.6
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.39, TOTAL LOSS = 1.19, TOTAL EXCESS = .20

PEAK FLOW TIME MAXIMUM AVERAGE FLOW

```
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+     91.      12.17                     9.           3.           3.           3.
                            (INCHES)    .084         .102         .102         .102
                             (AC-FT)      5.           6.           6.           6.

                          CUMULATIVE AREA =    1.05 SQ MI

     ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      6.6
                            FOR PLAN 1, RATIO =  .50

    TOTAL RAINFALL =    2.04, TOTAL LOSS =    1.50, TOTAL EXCESS =     .54

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+    272.      12.17                    27.           8.           7.           7.
                            (INCHES)    .243         .269         .269         .269
                             (AC-FT)     14.          15.          15.          15.

                          CUMULATIVE AREA =    1.05 SQ MI

     ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      6.6
                            FOR PLAN 1, RATIO =  .61

    TOTAL RAINFALL =    2.49, TOTAL LOSS =    1.72, TOTAL EXCESS =     .77

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+    394.      12.08                    40.          11.          10.          10.
                            (INCHES)    .353         .385         .385         .385
                             (AC-FT)     20.          22.          22.          22.

                          CUMULATIVE AREA =    1.05 SQ MI

     ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      6.6
                            FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    4.09, TOTAL LOSS =    2.42, TOTAL EXCESS =    1.67

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+    802.      12.08                    88.          23.          23.          23.
                            (INCHES)    .776         .829         .829         .829
                             (AC-FT)     43.          46.          46.          46.

                          CUMULATIVE AREA =    1.05 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  353 KK    *      6R6   *
            *            *
            **************
                          ROUTE FLOW TO CP6

              HYDROGRAPH ROUTING DATA

  356 RL          ROUTING LOSSES
                      QLOSS          .00  INITIAL LOSS
                      CLOSS          .00  ADDITIONAL FRACTION LOST
                     PERCRT        10.00  CHANNEL PERCOLATION RATE
                     ELVINV       784.00  INVERT ELEVATION

  355 RS          STORAGE ROUTING
                      NSTPS            3  NUMBER OF SUBREACHES
                       ITYP         FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC        -1.00  INITIAL CONDITION
                          X          .00 WORKING R AND D COEFFICIENT

  357 RC          NORMAL DEPTH CHANNEL
                        ANL         .050  LEFT OVERBANK N-VALUE
                       ANCH         .050  MAIN CHANNEL N-VALUE
                        ANR         .050  RIGHT OVERBANK N-VALUE
                      RLNTH        9466.  REACH LENGTH
```

SEL .0020 ENERGY SLOPE
ELMAX 787.8 MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL			------- +	--- RIGHT OVERBANK ---	
359 RY	ELEVATION	787.80	784.90	789.00	784.00	784.00	787.60	785.00	786.00
358 RX	DISTANCE	.00	76.00	97.00	120.00	181.00	196.00	224.00	633.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	2.69	5.46	8.30	11.22	14.24	19.41	28.58	41.74	58.90
OUTFLOW	.00	5.59	17.82	35.19	57.12	83.30	116.39	164.85	235.46	333.83
ELEVATION	784.00	784.20	784.40	784.60	784.80	785.00	785.20	785.40	785.60	785.80
STORAGE	80.06	103.44	127.26	151.52	176.23	201.38	226.96	252.99	279.47	306.32
OUTFLOW	464.96	654.95	879.29	1136.06	1423.91	1741.86	2089.17	2465.26	2869.68	3313.30
ELEVATION	786.00	786.20	786.40	786.60	786.80	787.00	787.20	787.40	787.60	787.80

*** *** *** *** ***

HYDROGRAPH AT STATION 6R6
FOR PLAN 1, RATIO = .34

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	0.	0.	0.	0.
+ 0.	.00	(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	0.	0.	0.	0.
0.	.00				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	784.00	784.00	784.00	784.00
784.00	.00				

CUMULATIVE AREA = 1.05 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R6
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	0.	0.	0.	0.
+ 0.	.00	(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	0.	0.	0.	0.
0.	.00				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	784.00	784.00	784.00	784.00
784.00	.00				

CUMULATIVE AREA = 1.05 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6R6
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	0.	0.	0.	0.
+ 0.	.00	(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	0.	0.	0.	0.
1.	13.25				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	784.06	784.01	784.01	784.01
784.15	13.25				

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                    CUMULATIVE AREA =    1.05 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION      6R6
                     FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     25.       13.42                 3.          1.          1.          1.
                        (INCHES)    .031        .031        .031        .031
                         (AC-FT)      2.          2.          2.          2.

 PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       4.      13.42                  2.          0.          0.          0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   784.92      13.42               784.36      784.09      784.09      784.09

                    CUMULATIVE AREA =    1.05 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
360 KK    *       6.7  *
          *            *
          **************
                    BASIN 6.7
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=      1.8  Lca=      1.0   S=    60.0  Kn= .060  LAG=  50.3
                     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

365 BA        SUBBASIN CHARACTERISTICS
                 TAREA          .45  SUBBASIN AREA

              PRECIPITATION DATA

327 PB           STORM         4.09  BASIN TOTAL PRECIPITATION

327 PI         INCREMENTAL PRECIPITATION PATTERN
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                 .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                 .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                 .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00

366 LG        GREEN AND AMPT LOSS RATE
                 STRTL          .46  STARTING LOSS
                   DTH          .34  MOISTURE DEFICIT
                  PSIF         4.20  WETTING FRONT SUCTION
                 XKSAT          .58  HYDRAULIC CONDUCTIVITY
                 RTIMP          .00  PERCENT IMPERVIOUS AREA

361 UI        INPUT UNITGRAPH,  15 ORDINATES,  VOLUME = 1.30
                 78.0      260.0      423.0      568.0      895.0      771.0      564.0      409.0      233.0      132.0
                 84.0       39.0       24.0       24.0       24.0
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TOTAL RAINFALL = 4.09, TOTAL LOSS = 3.27, TOTAL EXCESS = .82

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 509.	12.25	(CFS)	52.	13.	12.	12.
		(INCHES)	1.069	1.069	1.069	1.069
		(AC-FT)	26.	26.	26.	26.

CUMULATIVE AREA = .45 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.7
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.39, TOTAL LOSS = 1.39, TOTAL EXCESS = .00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .45 SQ MI

WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

*** *** *** *** ***

HYDROGRAPH AT STATION 6.7
FOR PLAN 1, RATIO = .50

TOTAL RAINFALL = 2.04, TOTAL LOSS = 2.04, TOTAL EXCESS = .01

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 6.	12.33	(CFS)	0.	0.	0.	0.
		(INCHES)	.009	.009	.009	.009
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .45 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.7
FOR PLAN 1, RATIO = .61

TOTAL RAINFALL = 2.49, TOTAL LOSS = 2.37, TOTAL EXCESS = .13

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 97.	12.33	(CFS)	8.	2.	2.	2.
		(INCHES)	.163	.163	.163	.163
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = .45 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 6.7
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 4.09, TOTAL LOSS = 3.27, TOTAL EXCESS = .82

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 509.	12.25	(CFS)	52.	13.	12.	12.
		(INCHES)	1.069	1.069	1.069	1.069
		(AC-FT)	26.	26.	26.	26.

CUMULATIVE AREA = .45 SQ MI

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                *            *
370 KK          *      6.8   *
                *            *
                **************
                          BASIN 6.8
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=     1.92  Lca=      .95    S=   58.0  Kn= .060  LAG=  50.2
                           PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

                SUBBASIN RUNOFF DATA

375 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .29  SUBBASIN AREA

                  PRECIPITATION DATA

327 PB                  STORM        4.09  BASIN TOTAL PRECIPITATION

327 PI              INCREMENTAL PRECIPITATION PATTERN
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                       .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                       .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                       .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00

376 LG            GREEN AND AMPT LOSS RATE
                        STRTL          .35  STARTING LOSS
                          DTH          .31  MOISTURE DEFICIT
                         PSIF         3.90  WETTING FRONT SUCTION
                        XKSAT          .32  HYDRAULIC CONDUCTIVITY
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

371 UI            INPUT UNITGRAPH,  14 ORDINATES,  VOLUME =  .50
                      19.0      65.0     106.0     142.0     224.0     190.0     139.0     101.0      56.0      33.0
                      20.0       9.0       6.0       6.0
                                                                  ***

    TOTAL RAINFALL =     4.09, TOTAL LOSS =     2.93, TOTAL EXCESS =     1.16

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR     24.92-HR
+   (CFS)        (HR)
                            (CFS)
+     173.      12.17                18.           4.           4.           4.
                         (INCHES)   .575         .575         .575         .575
                          (AC-FT)      9.           9.           9.           9.

                          CUMULATIVE AREA =     .29 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      6.8
                            FOR PLAN 1, RATIO =  .34

    TOTAL RAINFALL =     1.39, TOTAL LOSS =     1.38, TOTAL EXCESS =      .01

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR     24.92-HR
+   (CFS)        (HR)
                            (CFS)
+       1.      12.33                 0.           0.           0.           0.
                         (INCHES)   .003         .003         .003         .003
                          (AC-FT)      0.           0.           0.           0.

                          CUMULATIVE AREA =     .29 SQ MI

      ***             ***             ***             ***             ***
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                    HYDROGRAPH AT STATION      6.8
                     FOR PLAN 1, RATIO =  .50

     TOTAL RAINFALL =    2.04, TOTAL LOSS =    1.82, TOTAL EXCESS =     .23

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                 (CFS)
 +     39.       12.25                   4.          1.          1.          1.
                                (INCHES)  .112        .112        .112        .112
                                (AC-FT)    2.          2.          2.          2.

                    CUMULATIVE AREA =     .29 SQ MI

      ***            ***          ***          ***          ***

                    HYDROGRAPH AT STATION      6.8
                     FOR PLAN 1, RATIO =  .61

     TOTAL RAINFALL =    2.49, TOTAL LOSS =    2.05, TOTAL EXCESS =     .45

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                 (CFS)
 +     70.       12.25                   7.          2.          2.          2.
                                (INCHES)  .221        .221        .221        .221
                                (AC-FT)    3.          3.          3.          3.

                    CUMULATIVE AREA =     .29 SQ MI

      ***            ***          ***          ***          ***

                    HYDROGRAPH AT STATION      6.8
                     FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    4.09, TOTAL LOSS =    2.93, TOTAL EXCESS =    1.16

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                 (CFS)
 +    173.       12.17                  18.          4.          4.          4.
                                (INCHES)  .575        .575        .575        .575
                                (AC-FT)    9.          9.          9.          9.

                    CUMULATIVE AREA =     .29 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                 **************
                 *            *
 380 KK          *     CP6    *
                 *            *
                 **************
                    At SPILLWAY 4, COMBINE FLOWS FROM ROUTED 6.5, BASIN 6.9, BASIN 6.8, BASIN 6.

 382 HC          HYDROGRAPH COMBINATION
                    ICOMP          5  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***
      ***            ***          ***          ***          ***

                    HYDROGRAPH AT STATION     CP6
                     FOR PLAN 1, RATIO =  .34

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                 (CFS)
 +      1.       12.33                   0.          0.          0.          0.
                                (INCHES)  .000        .000        .000        .000
                                (AC-FT)    0.          0.          0.          0.

                    CUMULATIVE AREA =   15.16 SQ MI

      ***            ***          ***          ***          ***

                    HYDROGRAPH AT STATION     CP6
                     FOR PLAN 1, RATIO =  .50

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                 (CFS)
 +     44.       12.33                  15.          5.          5.          5.
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                    (INCHES)      .009        .012        .012        .012
                     (AC-FT)       7.          9.          9.          9.

                    CUMULATIVE AREA =   15.16 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION     CP6
                      FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)
+    302.     12.25                 137.         43.         42.         42.
                    (INCHES)      .084        .106        .106        .106
                     (AC-FT)       68.         86.         86.         86.

                    CUMULATIVE AREA =   15.16 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION     CP6
                      FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)
+   2152.     12.25                 872.        238.        229.        229.
                    (INCHES)      .535        .584        .584        .584
                     (AC-FT)      432.        472.        472.        472.

                    CUMULATIVE AREA =   15.16 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 383 KK     *      7.1   *
            *            *
            **************
                    BASIN 7.1
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=      4.9  Lca=      1.7   S=  295.0  Kn= .060  LAG=  65.6
                     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                    RAINFALL DEPTH OF 4.13 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
                    AN AREAL REDUCTION COEFFICIENT OF  .9074 WAS USED
                    THE FOLLOWING PC RECORD USED A 24-HOUR SCS TYPE II RAINFALL

 389 IN          TIME DATA FOR INPUT TIME SERIES
                      JXMIN          15  TIME INTERVAL IN MINUTES
                     JXDATE      1    0  STARTING DATE
                     JXTIME           0  STARTING TIME

               SUBBASIN RUNOFF DATA

 388 BA          SUBBASIN CHARACTERISTICS
                      TAREA        6.36  SUBBASIN AREA

                 PRECIPITATION DATA

 393 PB               STORM        3.75  BASIN TOTAL PRECIPITATION

 393 PI            INCREMENTAL PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                     .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

```
404 LG          GREEN AND AMPT LOSS RATE
                     STRTL        .31  STARTING LOSS
                       DTH        .28  MOISTURE DEFICIT
                      PSIF       6.40  WETTING FRONT SUCTION
                     XKSAT        .21  HYDRAULIC CONDUCTIVITY
                     RTIMP       7.00  PERCENT IMPERVIOUS AREA

404 UI          INPUT UNITGRAPH,  38 ORDINATES,  VOLUME = 1.00
                   331.0    331.0    353.0   1112.0   1359.0   1608.0   1821.0   2012.0   2277.0   2553.0
                  3052.0   3866.0   4256.0   3532.0   3058.0   2731.0   2449.0   2135.0   1899.0   1660.0
                  1428.0   1079.0    744.0    586.0    549.0    527.0    331.0    331.0    306.0    102.0
                   102.0    102.0    102.0    102.0    102.0    102.0    102.0    102.0
                                                                  ***

     TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.47, TOTAL EXCESS =    1.28

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +    3883.       12.83                820.         218.         210.         210.
                                (INCHES)   1.199        1.275        1.275        1.275
                                 (AC-FT)    407.         433.         433.         433.

                              CUMULATIVE AREA =    6.36 SQ MI

      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.1
                           FOR PLAN 1, RATIO =  .34

     TOTAL RAINFALL =    1.27, TOTAL LOSS =    1.18, TOTAL EXCESS =     .09

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +     156.       12.92                 47.          16.          15.          15.
                                (INCHES)   .068        .094        .094        .094
                                 (AC-FT)     23.          32.          32.          32.

                              CUMULATIVE AREA =    6.36 SQ MI

      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.1
                           FOR PLAN 1, RATIO =  .50

     TOTAL RAINFALL =    1.87, TOTAL LOSS =    1.55, TOTAL EXCESS =     .33

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +     930.       12.92                196.          56.          54.          54.
                                (INCHES)   .287        .325        .325        .325
                                 (AC-FT)     97.         110.         110.         110.

                              CUMULATIVE AREA =    6.36 SQ MI

      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.1
                           FOR PLAN 1, RATIO =  .61

     TOTAL RAINFALL =    2.29, TOTAL LOSS =    1.74, TOTAL EXCESS =     .54

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +    1603.       12.83                340.          93.          90.          90.
                                (INCHES)   .497        .543        .543        .543
                                 (AC-FT)    169.         184.         184.         184.

                              CUMULATIVE AREA =    6.36 SQ MI

      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.1
                           FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.47, TOTAL EXCESS =    1.28
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  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    3883.     12.83                 820.         218.         210.         210.
                        (INCHES)    1.199        1.275        1.275        1.275
                         (AC-FT)     407.         433.         433.         433.

                       CUMULATIVE AREA =    6.36 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 410 KK     *     7R1    *
            *            *
            **************
                          ROUTE FLOW TO CP7.2

              HYDROGRAPH ROUTING DATA

 413 RL         ROUTING LOSSES
                      QLOSS         .00  INITIAL LOSS
                      CLOSS         .00  ADDITIONAL FRACTION LOST
                     PERCRT        1.00  CHANNEL PERCOLATION RATE
                     ELVINV      100.00  INVERT ELEVATION

 412 RS         STORAGE ROUTING
                      NSTPS           2  NUMBER OF SUBREACHES
                       ITYP        FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC       -1.00  INITIAL CONDITION
                          X         .00 WORKING R AND D COEFFICIENT

 414 RC         NORMAL DEPTH CHANNEL
                        ANL        .050  LEFT OVERBANK N-VALUE
                       ANCH        .050  MAIN CHANNEL N-VALUE
                        ANR        .050  RIGHT OVERBANK N-VALUE
                      RLNTH       5531.  REACH LENGTH
                        SEL       .1080  ENERGY SLOPE
                      ELMAX       105.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 416 RY       ELEVATION    106.00    104.00    102.00    100.10    100.00    102.00    104.00    106.00
 415 RX       DISTANCE        .00    100.00   1259.00   1426.00   1592.00   1759.00   2917.00   3017.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00      5.01     12.52     21.54     32.07     44.11     57.65     72.70     89.95    115.83
          OUTFLOW        .00    129.89    523.11   1155.61   2038.46   3188.88   4625.89   6368.90   8628.48  11726.67
        ELEVATION     100.00    100.26    100.53    100.79    101.05    101.32    101.58    101.84    102.11    102.37

          STORAGE     151.89    198.14    254.58    321.21    398.02    485.02    579.22    674.50    770.65    867.68
          OUTFLOW   15702.55  20788.30  27183.88  35070.54  44616.66  55980.94  70735.14  87723.22 106487.20 126954.10
        ELEVATION     102.63    102.89    103.16    103.42    103.68    103.95    104.21    104.47    104.74    105.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN    55981. TO   126954.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

     ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      7R1
                          FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR      24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     116.     13.17                  30.           7.           7.           7.
                        (INCHES)     .043        .043         .043         .043
                         (AC-FT)      15.          15.          15.          15.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR        24-HR        72-HR      24.92-HR
+  (AC-FT)      (HR)
       2.      13.17                   1.           0.           0.           0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR        24-HR        72-HR      24.92-HR
+   (FEET)      (HR)
    100.25     13.17                100.08       100.02       100.02       100.02

                       CUMULATIVE AREA =    6.36 SQ MI

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HYDROGRAPH AT STATION 7R1
FOR PLAN 1, RATIO = .50

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 842.	13.08

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	176.	44.	42.	42.
(INCHES)	.257	.257	.257	.257
(AC-FT)	87.	87.	87.	87.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
9.	13.08

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
2.	1.	1.	1.

PEAK STAGE	TIME
+ (FEET)	(HR)
100.66	13.08

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
100.21	100.05	100.05	100.05

CUMULATIVE AREA = 6.36 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7R1
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 1523.	13.00

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	319.	80.	77.	77.
(INCHES)	.466	.466	.466	.466
(AC-FT)	158.	158.	158.	158.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
13.	13.00

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
4.	1.	1.	1.

PEAK STAGE	TIME
+ (FEET)	(HR)
100.90	13.00

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
100.29	100.07	100.07	100.07

CUMULATIVE AREA = 6.36 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7R1
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME
+ (CFS)	(HR)
+ 3759.	12.92

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	797.	201.	193.	193.
(INCHES)	1.165	1.173	1.173	1.173
(AC-FT)	395.	398.	398.	398.

PEAK STORAGE	TIME
+ (AC-FT)	(HR)
25.	12.92

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
7.	2.	2.	2.

PEAK STAGE	TIME
+ (FEET)	(HR)
101.42	12.92

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
100.47	100.13	100.12	100.12

CUMULATIVE AREA = 6.36 SQ MI

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            *            *
417 KK      *     7.2    *
            *            *
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BASIN 7.2
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 3.1 Lca= 1.3 S= 354.0 Kn= .060 LAG= 48.1
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

422 BA SUBBASIN CHARACTERISTICS
TAREA 4.32 SUBBASIN AREA

PRECIPITATION DATA

393 PB STORM 3.75 BASIN TOTAL PRECIPITATION

393 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.01	.01	.01	.01
.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

423 LG GREEN AND AMPT LOSS RATE

STRTL	.33	STARTING LOSS
DTH	.27	MOISTURE DEFICIT
PSIF	6.70	WETTING FRONT SUCTION
XKSAT	.21	HYDRAULIC CONDUCTIVITY
RTIMP	9.00	PERCENT IMPERVIOUS AREA

418 UI INPUT UNITGRAPH, 28 ORDINATES, VOLUME = 1.00

302.0	302.0	865.0	1288.0	1577.0	1812.0	2138.0	2549.0	3467.0	3710.0
2942.0	2513.0	2147.0	1820.0	1511.0	1223.0	770.0	533.0	497.0	361.0
302.0	201.0	93.0	93.0	93.0	93.0	93.0	93.0		

***

TOTAL RAINFALL = 3.75, TOTAL LOSS = 2.43, TOTAL EXCESS = 1.32

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 3284.	12.58		567.	153.	148.	148.
		(INCHES)	1.221	1.318	1.319	1.319
		(AC-FT)	281.	304.	304.	304.

CUMULATIVE AREA = 4.32 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7.2
FOR PLAN 1, RATIO = .34

TOTAL RAINFALL = 1.27, TOTAL LOSS = 1.16, TOTAL EXCESS = .12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 150.	12.58		39.	14.	13.	13.
		(INCHES)	.084	.117	.117	.117
		(AC-FT)	19.	27.	27.	27.

CUMULATIVE AREA = 4.32 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7.2
FOR PLAN 1, RATIO = .50

TOTAL RAINFALL = 1.87, TOTAL LOSS = 1.53, TOTAL EXCESS = .35

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 796.	12.67		139.	41.	39.	39.
		(INCHES)	.300	.349	.349	.349
		(AC-FT)	69.	80.	80.	80.

CUMULATIVE AREA = 4.32 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7.2
FOR PLAN 1, RATIO = .61

TOTAL RAINFALL = 2.29, TOTAL LOSS = 1.72, TOTAL EXCESS = .57

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 1364.	12.58	(CFS)	238.	66.	64.	64.
		(INCHES)	.511	.571	.571	.571
		(AC-FT)	118.	132.	132.	132.

CUMULATIVE AREA = 4.32 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7.2
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.75, TOTAL LOSS = 2.43, TOTAL EXCESS = 1.32

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 3284.	12.58	(CFS)	567.	153.	148.	148.
		(INCHES)	1.221	1.318	1.319	1.319
		(AC-FT)	281.	304.	304.	304.

CUMULATIVE AREA = 4.32 SQ MI

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428 KK

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*            *
*   CP7.2    *
*            *
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COMBINE BASINS 7.1 AND 7.2

430 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

*** *** *** *** *** ***

HYDROGRAPH AT STATION CP7.2
FOR PLAN 1, RATIO = .34

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 216.	12.67	(CFS)	69.	21.	20.	20.
		(INCHES)	.060	.073	.073	.073
		(AC-FT)	34.	42.	42.	42.

CUMULATIVE AREA = 10.68 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7.2
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 1343.	12.75	(CFS)	315.	85.	81.	81.
		(INCHES)	.275	.294	.294	.294
		(AC-FT)	156.	168.	168.	168.

CUMULATIVE AREA = 10.68 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7.2
FOR PLAN 1, RATIO = .61

PEAK FLOW TIME MAXIMUM AVERAGE FLOW

```
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+    2465.      12.75                   556.         146.         141.         141.
                          (INCHES)     .484         .508         .508         .508
                           (AC-FT)     276.         290.         290.         290.

                         CUMULATIVE AREA =   10.68 SQ MI

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION    CP7.2
                         FOR PLAN 1, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+    6237.      12.67                  1364.         354.         341.         341.
                          (INCHES)    1.187        1.232        1.232        1.232
                           (AC-FT)     676.         702.         702.         702.

                         CUMULATIVE AREA =   10.68 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  431 KK    *     7R2    *
            *            *
            **************
                          ROUTE FLOW TO CP7.3

              HYDROGRAPH ROUTING DATA

  434 RL          ROUTING LOSSES
                        QLOSS         .00  INITIAL LOSS
                        CLOSS         .00  ADDITIONAL FRACTION LOST
                       PERCRT        1.00  CHANNEL PERCOLATION RATE
                       ELVINV      100.00  INVERT ELEVATION

  433 RS          STORAGE ROUTING
                        NSTPS           2  NUMBER OF SUBREACHES
                         ITYP        FLOW  TYPE OF INITIAL CONDITION
                       RSVRIC       -1.00  INITIAL CONDITION
                            X         .00  WORKING R AND D COEFFICIENT

  435 RC          NORMAL DEPTH CHANNEL
                          ANL        .050  LEFT OVERBANK N-VALUE
                         ANCH        .050  MAIN CHANNEL N-VALUE
                          ANR        .050  RIGHT OVERBANK N-VALUE
                        RLNTH       6034.  REACH LENGTH
                          SEL       .0066  ENERGY SLOPE
                        ELMAX       105.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
  437 RY       ELEVATION   106.00    104.00    102.00    100.10    100.00    102.00    104.00    106.00
  436 RX       DISTANCE       .00    100.00    931.00   1064.00   1198.00   1331.00   2162.00   2262.00

                                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       .00      4.40     11.00     18.90     28.11     38.64     50.47     63.61     78.59    100.35
          OUTFLOW       .00     25.90    104.23    230.07    405.52    633.94    919.05   1264.64   1712.13   2320.63
        ELEVATION    100.00    100.26    100.53    100.79    101.05    101.32    101.58    101.84    102.11    102.37

          STORAGE    130.08    167.78    213.45    267.10    328.71    398.30    473.61    550.03    627.40    705.73
          OUTFLOW   3091.24   4064.81   5276.54   6758.37   8539.96  10649.28  13354.75  16458.15  19881.84  23613.95
        ELEVATION    102.63    102.89    103.16    103.42    103.68    103.95    104.21    104.47    104.74    105.00

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      7R2
                         FOR PLAN 1, RATIO =  .34

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                              (CFS)
+     139.      13.58                    48.          12.          12.          12.
                          (INCHES)     .042         .042         .042         .042
                           (AC-FT)      24.          24.          24.          24.

 PEAK STORAGE    TIME                          MAXIMUM AVERAGE STORAGE
                                        6-HR        24-HR        72-HR      24.92-HR
+  (AC-FT)       (HR)
       7.      13.58                     3.           1.           1.           1.
```

PEAK STAGE (FEET)	TIME (HR)
+ 100.62	13.58

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
100.32	100.08	100.08	100.08

CUMULATIVE AREA = 10.68 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7R2
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)
+ 1081.	13.25

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	289.	72.	70.	70.
(INCHES)	.252	.252	.252	.252
(AC-FT)	144.	144.	144.	144.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 29.	13.25

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
10.	3.	2.	2.

PEAK STAGE (FEET)	TIME (HR)
+ 101.72	13.25

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
100.73	100.20	100.19	100.19

CUMULATIVE AREA = 10.68 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7R2
FOR PLAN 1, RATIO = .61

PEAK FLOW (CFS)	TIME (HR)
+ 2064.	13.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	527.	132.	127.	127.
(INCHES)	.459	.460	.460	.460
(AC-FT)	261.	262.	262.	262.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 46.	13.17

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
15.	4.	4.	4.

PEAK STAGE (FEET)	TIME (HR)
+ 102.27	13.17

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
100.95	100.26	100.25	100.25

CUMULATIVE AREA = 10.68 SQ MI

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HYDROGRAPH AT STATION 7R2
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 5191.	13.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	1328.	335.	322.	322.
(INCHES)	1.156	1.166	1.166	1.166
(AC-FT)	658.	664.	664.	664.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 106.	13.17

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
31.	8.	8.	8.

PEAK STAGE (FEET)	TIME (HR)
+ 103.15	13.17

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
101.39	100.42	100.40	100.40

CUMULATIVE AREA = 10.68 SQ MI

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             *            *
438 KK       *     7.3    *
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                    BASIN 7.3
                    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                    L=      4.2  Lca=      2.8   S=  227.0  Kn= .060  LAG=  78.6
                    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

443 BA          SUBBASIN CHARACTERISTICS
                      TAREA        2.84  SUBBASIN AREA

                PRECIPITATION DATA

393 PB                STORM        3.75  BASIN TOTAL PRECIPITATION

393 PI            INCREMENTAL PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .02       .02       .02       .05       .05
                     .05       .07       .07       .07       .01       .01       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00

444 LG          GREEN AND AMPT LOSS RATE
                      STRTL         .30  STARTING LOSS
                        DTH         .26  MOISTURE DEFICIT
                       PSIF        7.40  WETTING FRONT SUCTION
                      XKSAT         .18  HYDRAULIC CONDUCTIVITY
                      RTIMP       10.00  PERCENT IMPERVIOUS AREA

439 UI          INPUT UNITGRAPH,  46 ORDINATES,  VOLUME = 1.00
                    122.0     122.0     122.0     228.0     418.0     498.0     579.0     644.0     699.0     764.0
                    848.0     933.0    1054.0    1330.0    1516.0    1500.0    1281.0    1138.0    1035.0     955.0
                    854.0     767.0     701.0     618.0     571.0     476.0     355.0     256.0     215.0     205.0
                    200.0     165.0     122.0     122.0     122.0      51.0      37.0      37.0      37.0      37.0
                     37.0      37.0      37.0      37.0      37.0      37.0
                                                                                  ***

   TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.34, TOTAL EXCESS =    1.41

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1570.     13.08                395.        107.        103.        103.
                        (INCHES)   1.295       1.402       1.403       1.403
                         (AC-FT)    196.        212.        212.        212.

                        CUMULATIVE AREA =    2.84 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      7.3
                          FOR PLAN 1, RATIO =  .34

   TOTAL RAINFALL =    1.27, TOTAL LOSS =    1.13, TOTAL EXCESS =     .14

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     13.08                 32.         11.         10.         10.
                        (INCHES)    .105        .142        .142        .142
                         (AC-FT)     16.         21.         21.         21.

                        CUMULATIVE AREA =    2.84 SQ MI

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                    HYDROGRAPH AT STATION      7.3
                      FOR PLAN 1, RATIO =  .50

     TOTAL RAINFALL =    1.87, TOTAL LOSS =    1.47, TOTAL EXCESS =     .41

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +     422.       13.08                 107.        31.         30.         30.
                                (INCHES)  .351       .405        .405        .405
                                 (AC-FT)   53.        61.         61.         61.

                    CUMULATIVE AREA =    2.84 SQ MI

      ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      7.3
                      FOR PLAN 1, RATIO =  .61

     TOTAL RAINFALL =    2.29, TOTAL LOSS =    1.65, TOTAL EXCESS =     .63

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +     685.       13.08                 173.        48.         46.         46.
                                (INCHES)  .565       .631        .631        .631
                                 (AC-FT)   86.        96.         96.         96.

                    CUMULATIVE AREA =    2.84 SQ MI

      ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      7.3
                      FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.34, TOTAL EXCESS =    1.41

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +    1570.       13.08                 395.       107.        103.        103.
                                (INCHES) 1.295      1.402       1.403       1.403
                                 (AC-FT)  196.       212.        212.        212.

                    CUMULATIVE AREA =    2.84 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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              *            *
 451 KK       *    CP7.3   *
              *            *
              **************
                    COMBINE ROUTED 7.2 AND BASIN 7.3

 453 HC          HYDROGRAPH COMBINATION
                      ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***
      ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.3
                      FOR PLAN 1, RATIO =  .34

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
 +     216.       13.25                  80.        23.         22.         22.
                                (INCHES)  .055       .063        .063        .063
                                 (AC-FT)   39.        45.         45.         45.

                    CUMULATIVE AREA =   13.52 SQ MI

      ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.3
                      FOR PLAN 1, RATIO =  .50

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                        6-HR       24-HR       72-HR     24.92-HR
 +   (CFS)        (HR)
                                  (CFS)
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+    1465.     13.17                    395.        103.        100.        100.
                          (INCHES)     .272        .284        .284        .284
                           (AC-FT)     196.        205.        205.        205.

                          CUMULATIVE AREA =   13.52 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CP7.3
                          FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+    2726.     13.17                    698.        180.        174.        174.
                          (INCHES)     .480        .496        .496        .496
                           (AC-FT)     346.        358.        358.        358.

                          CUMULATIVE AREA =   13.52 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION    CP7.3
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+    6726.     13.08                   1722.        442.        426.        426.
                          (INCHES)    1.184       1.215       1.216       1.216
                           (AC-FT)     854.        876.        876.        876.

                          CUMULATIVE AREA =   13.52 SQ MI


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            *            *
  454 KK    *        D1  *
            *            *
            **************
                        DIVERT FLOW FROM BASIN 7 TO BASIN 8

     DT          DIVERSION
                      ISTAD        DIV1  DIVERSION HYDROGRAPH IDENTIFICATION

     DI             INFLOW         .00     36.00     66.00    200.00   1600.00   2400.00   5000.00   8900.00

     DQ      DIVERTED FLOW         .00       .00       .00     40.00    240.00    460.00   1000.00   1800.00

                                                                  ***

      ***             ***             ***             ***             ***

                        DIVERSION HYDROGRAPH     DIV1
                          FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+      42.     13.25                     11.          3.          3.          3.
                          (INCHES)     .007        .007        .007        .007
                           (AC-FT)       5.          5.          5.          5.

                          CUMULATIVE AREA =   13.52 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       D1
                          FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                            (CFS)
+     173.     13.25                     69.         20.         19.         19.
                          (INCHES)     .047        .055        .055        .055
                           (AC-FT)      34.         40.         40.         40.

                          CUMULATIVE AREA =   13.52 SQ MI

      ***             ***             ***             ***             ***

                        DIVERSION HYDROGRAPH     DIV1
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FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)
+ 221.	13.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	60.	15.	14.	14.
(INCHES)	.041	.041	.041	.041
(AC-FT)	30.	30.	30.	30.

CUMULATIVE AREA = 13.52 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION D1
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)
+ 1245.	13.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	335.	88.	85.	85.
(INCHES)	.231	.243	.243	.243
(AC-FT)	166.	175.	175.	175.

CUMULATIVE AREA = 13.52 SQ MI

*** *** *** *** ***

DIVERSION HYDROGRAPH DIV1
FOR PLAN 1, RATIO = .61

PEAK FLOW (CFS)	TIME (HR)
+ 528.	13.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	120.	30.	29.	29.
(INCHES)	.083	.083	.083	.083
(AC-FT)	60.	60.	60.	60.

CUMULATIVE AREA = 13.52 SQ MI

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HYDROGRAPH AT STATION D1
FOR PLAN 1, RATIO = .61

PEAK FLOW (CFS)	TIME (HR)
+ 2198.	13.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	578.	150.	145.	145.
(INCHES)	.398	.413	.413	.413
(AC-FT)	287.	298.	298.	298.

CUMULATIVE AREA = 13.52 SQ MI

*** *** *** *** ***

DIVERSION HYDROGRAPH DIV1
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 1354.	13.08

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	330.	82.	79.	79.
(INCHES)	.227	.227	.227	.227
(AC-FT)	164.	164.	164.	164.

CUMULATIVE AREA = 13.52 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION D1
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 5372.	13.08

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	1392.	359.	346.	346.
(INCHES)	.957	.989	.989	.989
(AC-FT)	690.	713.	713.	713.

CUMULATIVE AREA = 13.52 SQ MI

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            *            *
459 KK      *     7R3    *
            *            *
            **************
                          ROUTE THE REMAINING FLOW TO CP7.4

              HYDROGRAPH ROUTING DATA

462 RL          ROUTING LOSSES
                      QLOSS        .00  INITIAL LOSS
                      CLOSS        .00  ADDITIONAL FRACTION LOST
                     PERCRT       1.00  CHANNEL PERCOLATION RATE
                     ELVINV     100.00  INVERT ELEVATION

461 RS          STORAGE ROUTING
                      NSTPS          2  NUMBER OF SUBREACHES
                       ITYP       FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC      -1.00  INITIAL CONDITION
                          X        .00 WORKING R AND D COEFFICIENT

463 RC          NORMAL DEPTH CHANNEL
                        ANL       .050  LEFT OVERBANK N-VALUE
                       ANCH       .050  MAIN CHANNEL N-VALUE
                        ANR       .050  RIGHT OVERBANK N-VALUE
                      RLNTH      6537.  REACH LENGTH
                        SEL      .0153  ENERGY SLOPE
                      ELMAX      105.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                          CROSS-SECTION DATA
                            --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
465 RY        ELEVATION    106.00    104.00    102.00    100.10    100.00    102.00    104.00    106.00
464 RX        DISTANCE        .00    100.00   1308.00   1441.00   1575.00   1708.00   2917.00   3017.00

                                                          ***

                                          COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00      4.77     11.92     20.48     30.46     41.86     54.68     68.91     85.46    112.56
          OUTFLOW        .00     39.44    158.70    350.30    617.43    965.22   1399.31   1925.49   2607.90   3563.88
        ELEVATION     100.00    100.26    100.53    100.79    101.05    101.32    101.58    101.84    102.11    102.37

          STORAGE     152.22    204.44    269.22    346.56    436.46    538.92    650.26    762.86    876.50    991.18
          OUTFLOW    4835.30   6514.73   8681.85  11408.81  14762.58  18806.22  24159.91  30368.75  37252.63  44783.11
        ELEVATION     102.63    102.89    103.16    103.42    103.68    103.95    104.21    104.47    104.74    105.00

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION      7R3
                        FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     122.     14.17                 48.         12.         12.          12.
                        (INCHES)    .033        .033        .033         .033
                         (AC-FT)     24.         24.         24.          24.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       5.      14.17                  3.          1.          1.           1.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
    100.47     14.17                100.26      100.07      100.06       100.06

                      CUMULATIVE AREA =   13.52 SQ MI

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION      7R3
                        FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    1063.     13.58                309.         77.         75.          75.
                        (INCHES)    .212        .213        .213         .213
                         (AC-FT)    153.        153.        153.         153.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      23.      13.58                  8.          2.          2.           2.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
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+ (FEET)	(HR)	6-HR	24-HR	72-HR	24.92-HR
101.39	13.58	100.63	100.16	100.16	100.16

CUMULATIVE AREA = 13.52 SQ MI

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HYDROGRAPH AT STATION 7R3
FOR PLAN 1, RATIO = .61

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)	6-HR	24-HR	72-HR	24.92-HR
+ 1965.	13.50	(CFS) 549.	138.	133.	133.
		(INCHES) .377	.379	.379	.379
		(AC-FT) 272.	273.	273.	273.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)	6-HR	24-HR	72-HR	24.92-HR
35.	13.50	12.	3.	3.	3.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)	6-HR	24-HR	72-HR	24.92-HR
101.86	13.50	100.82	100.22	100.21	100.21

CUMULATIVE AREA = 13.52 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7R3
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)	6-HR	24-HR	72-HR	24.92-HR
+ 4801.	13.50	(CFS) 1357.	342.	330.	330.
		(INCHES) .933	.941	.941	.941
		(AC-FT) 673.	679.	679.	679.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)	6-HR	24-HR	72-HR	24.92-HR
76.	13.50	25.	6.	6.	6.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)	6-HR	24-HR	72-HR	24.92-HR
102.63	13.50	101.22	100.34	100.33	100.33

CUMULATIVE AREA = 13.52 SQ MI

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466 KK          **************
                *            *
                *     7.4    *
                *            *
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BASIN 7.4
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 2.7 Lca= 1.3 S= 395.0 Kn= .060 LAG= 44.7
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

471 BA SUBBASIN CHARACTERISTICS
TAREA 3.25 SUBBASIN AREA

PRECIPITATION DATA

393 PB STORM 3.75 BASIN TOTAL PRECIPITATION

393 PI INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.01	.01	.01	.01
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.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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472 LG        GREEN AND AMPT LOSS RATE
                  STRTL         .28  STARTING LOSS
                    DTH         .27  MOISTURE DEFICIT
                   PSIF        7.20  WETTING FRONT SUCTION
                  XKSAT         .20  HYDRAULIC CONDUCTIVITY
                  RTIMP       12.00  PERCENT IMPERVIOUS AREA

467 UI        INPUT UNITGRAPH,  26 ORDINATES,  VOLUME = 1.00
                245.0     245.0     815.0    1109.0    1345.0    1565.0    1870.0    2483.0    3072.0    2521.0
               2092.0    1782.0    1481.0    1219.0     944.0     575.0     423.0     392.0     245.0     244.0
                 75.0      75.0      75.0      75.0      75.0      75.0

                                                ***

   TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.33, TOTAL EXCESS =    1.42

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                           (CFS)
+   2658.     12.50                   449.        124.        119.        119.
                         (INCHES)    1.284       1.414       1.414       1.414
                          (AC-FT)     223.        245.        245.        245.

                        CUMULATIVE AREA =    3.25 SQ MI


      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.4
                            FOR PLAN 1, RATIO =  .34

   TOTAL RAINFALL =    1.27, TOTAL LOSS =    1.11, TOTAL EXCESS =     .16

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                           (CFS)
+    165.     12.58                    40.         14.         13.         13.
                         (INCHES)     .115        .159        .160        .160
                          (AC-FT)      20.         28.         28.         28.

                        CUMULATIVE AREA =    3.25 SQ MI


      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.4
                            FOR PLAN 1, RATIO =  .50

   TOTAL RAINFALL =    1.87, TOTAL LOSS =    1.46, TOTAL EXCESS =     .42

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                           (CFS)
+    708.     12.58                   122.         36.         35.         35.
                         (INCHES)     .350        .415        .416        .416
                          (AC-FT)      61.         72.         72.         72.

                        CUMULATIVE AREA =    3.25 SQ MI


      ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION      7.4
                            FOR PLAN 1, RATIO =  .61

   TOTAL RAINFALL =    2.29, TOTAL LOSS =    1.64, TOTAL EXCESS =     .65

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR       72-HR      24.92-HR
+  (CFS)       (HR)
                           (CFS)
+   1152.     12.58                   197.         56.         54.         54.
                         (INCHES)     .564        .643        .644        .644
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                    (AC-FT)        98.        112.        112.        112.

                    CUMULATIVE AREA =    3.25 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      7.4
                      FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.33, TOTAL EXCESS =    1.42

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)       (HR)
                                    (CFS)
 +    2658.      12.50                449.         124.         119.         119.
                                 (INCHES)        1.284        1.414        1.414        1.414
                                  (AC-FT)         223.         245.         245.         245.

                    CUMULATIVE AREA =    3.25 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 477 KK     *    CP7.4   *
            *            *
            **************
                    COMBINE ROUTED 7.3 AND BASIN 7.4

 479 HC          HYDROGRAPH COMBINATION
                      ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***
     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.4
                      FOR PLAN 1, RATIO =  .34

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)       (HR)
                                    (CFS)
 +     166.      12.58                 86.          26.          25.          25.
                                 (INCHES)         .048         .058         .058         .058
                                  (AC-FT)          43.          51.          52.          52.

                    CUMULATIVE AREA =   16.77 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.4
                      FOR PLAN 1, RATIO =  .50

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)       (HR)
                                    (CFS)
 +    1130.      13.58                426.         114.         110.         110.
                                 (INCHES)         .236         .252         .252         .252
                                  (AC-FT)         211.         225.         225.         225.

                    CUMULATIVE AREA =   16.77 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.4
                      FOR PLAN 1, RATIO =  .61

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
 +   (CFS)       (HR)
                                    (CFS)
 +    2105.      13.42                740.         194.         187.         187.
                                 (INCHES)         .410         .430         .430         .430
                                  (AC-FT)         367.         385.         385.         385.

                    CUMULATIVE AREA =   16.77 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.4
                      FOR PLAN 1, RATIO = 1.00

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
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+   (CFS)        (HR)
                              (CFS)
+    5093.      13.42                  1798.        466.        449.        449.
                          (INCHES)     .997       1.033       1.033       1.033
                           (AC-FT)     892.        924.        924.        924.

                        CUMULATIVE AREA =   16.77 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  480 KK    *     7R4    *
            *            *
            **************
                              ROUTE THE  FLOW TO CP7.5

                HYDROGRAPH ROUTING DATA

  483 RL          ROUTING LOSSES
                        QLOSS         .00  INITIAL LOSS
                        CLOSS         .00  ADDITIONAL FRACTION LOST
                       PERCRT        1.00  CHANNEL PERCOLATION RATE
                       ELVINV      100.00  INVERT ELEVATION

  482 RS          STORAGE ROUTING
                        NSTPS           6  NUMBER OF SUBREACHES
                         ITYP        FLOW  TYPE OF INITIAL CONDITION
                       RSVRIC       -1.00  INITIAL CONDITION
                            X         .00 WORKING R AND D COEFFICIENT

  484 RC          NORMAL DEPTH CHANNEL
                          ANL        .050  LEFT OVERBANK N-VALUE
                         ANCH        .050  MAIN CHANNEL N-VALUE
                          ANR        .050  RIGHT OVERBANK N-VALUE
                        RLNTH      17600.  REACH LENGTH
                          SEL      .0153  ENERGY SLOPE
                        ELMAX      105.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                          CROSS-SECTION DATA
                                 --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
  486 RY        ELEVATION    106.00    104.00    102.00    100.10    100.00    102.00    104.00    106.00
  485 RX        DISTANCE        .00    100.00   1973.00   2501.00   3029.00   3557.00   5431.00   5531.00

                                                                  ***

                                          COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

            STORAGE        .00     50.66    126.59    217.69    323.94    445.36    581.94    733.69    903.58   1119.19
            OUTFLOW        .00    155.46    625.85   1382.08   2437.10   3811.34   5527.33   7608.13  10299.52  13855.42
          ELEVATION     100.00    100.26    100.53    100.79    101.05    101.32    101.58    101.84    102.11    102.37

            STORAGE    1387.22   1707.67   2080.55   2505.85   2983.57   3513.71   4080.39   4650.86   5224.13   5800.20
            OUTFLOW   18131.11  23259.04  29353.55  36518.66  44851.42  54443.66  66281.76  79635.88  94211.88 109958.50
          ELEVATION     102.63    102.89    103.16    103.42    103.68    103.95    104.21    104.47    104.74    105.00

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       7R4
                          FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                              (CFS)
+       0.      24.25                 0.          0.          0.          0.
                          (INCHES)   .000        .000        .000        .000
                           (AC-FT)     0.          0.          0.          0.

 PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                     6-HR        24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       0.        .00                  0.          0.          0.          0.

  PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                     6-HR        24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   100.00        .00               100.00      100.00      100.00      100.00

                        CUMULATIVE AREA =   16.77 SQ MI

      ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       7R4
                          FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
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                                  (CFS)
+      555.      15.25                  203.        51.        49.        49.
                                (INCHES)  .112      .112       .112       .112
                                (AC-FT)   101.      101.       101.       101.

 PEAK STORAGE    TIME                          MAXIMUM AVERAGE STORAGE
                                          6-HR       24-HR      72-HR    24.92-HR
+  (AC-FT)       (HR)
      20.       15.25                     9.          2.         2.         2.

 PEAK STAGE      TIME                          MAXIMUM AVERAGE STAGE
                                          6-HR       24-HR      72-HR    24.92-HR
+   (FEET)       (HR)
    100.51      15.25                   100.26      100.06     100.06     100.06

                              CUMULATIVE AREA =   16.77 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      7R4
                         FOR PLAN 1, RATIO =  .61

 PEAK FLOW       TIME                          MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR      72-HR    24.92-HR
+   (CFS)        (HR)
                                  (CFS)
+    1353.      14.75                   485.       121.       117.       117.
                                (INCHES)  .269      .269       .269       .269
                                (AC-FT)   241.      241.       241.       241.

 PEAK STORAGE    TIME                          MAXIMUM AVERAGE STORAGE
                                          6-HR       24-HR      72-HR    24.92-HR
+  (AC-FT)       (HR)
      37.       14.75                    17.          4.         4.         4.

 PEAK STAGE      TIME                          MAXIMUM AVERAGE STAGE
                                          6-HR       24-HR      72-HR    24.92-HR
+   (FEET)       (HR)
    100.79      14.75                   100.41      100.10     100.10     100.10

                              CUMULATIVE AREA =   16.77 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION      7R4
                         FOR PLAN 1, RATIO = 1.00

 PEAK FLOW       TIME                          MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR      72-HR    24.92-HR
+   (CFS)        (HR)
                                  (CFS)
+    4218.      14.33                  1487.       373.       359.       359.
                                (INCHES)  .824      .826       .826       .826
                                (AC-FT)   737.      739.       739.       739.

 PEAK STORAGE    TIME                          MAXIMUM AVERAGE STORAGE
                                          6-HR       24-HR      72-HR    24.92-HR
+  (AC-FT)       (HR)
      80.       14.33                    35.          9.         9.         9.

 PEAK STAGE      TIME                          MAXIMUM AVERAGE STAGE
                                          6-HR       24-HR      72-HR    24.92-HR
+   (FEET)       (HR)
    101.39      14.33                   100.71      100.18     100.18     100.18

                              CUMULATIVE AREA =   16.77 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
487 KK      *      7.5   *
            *            *
            **************
                    BASIN 7.5
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=      3.4  Lca=      1.5   S=   80.0  Kn= .060  LAG=  69.8
                     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

          SUBBASIN RUNOFF DATA

492 BA      SUBBASIN CHARACTERISTICS
                 TAREA        3.89  SUBBASIN AREA

            PRECIPITATION DATA

393 PB           STORM        3.75  BASIN TOTAL PRECIPITATION

393 PI        INCREMENTAL PRECIPITATION PATTERN
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.00    .00    .00    .00    .00    .00    .00    .00    .00    .00
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493 LG          GREEN AND AMPT LOSS RATE
                     STRTL        .34  STARTING LOSS
                       DTH        .30  MOISTURE DEFICIT
                      PSIF       4.50  WETTING FRONT SUCTION
                     XKSAT        .29  HYDRAULIC CONDUCTIVITY
                     RTIMP       2.00  PERCENT IMPERVIOUS AREA

488 UI          INPUT UNITGRAPH,  41 ORDINATES,  VOLUME = 1.00
                   188.0     188.0     188.0     526.0     700.0     875.0     972.0    1077.0    1187.0    1338.0
                  1488.0    1782.0    2228.0    2417.0    2022.0    1764.0    1586.0    1439.0    1269.0    1136.0
                  1006.0     895.0     759.0     560.0     380.0     332.0     309.0     308.0     188.0     188.0
                   188.0      85.0      58.0      58.0      58.0      58.0      58.0      58.0      58.0      58.0
                    58.0
                                                                  ***

    TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.68, TOTAL EXCESS =    1.07

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                          (CFS)
+    2048.      12.92                437.         112.         107.         107.
                         (INCHES)   1.045        1.067        1.067        1.067
                          (AC-FT)    217.         221.         221.         221.

                         CUMULATIVE AREA =    3.89 SQ MI

      ***            ***            ***            ***            ***

                         HYDROGRAPH AT STATION      7.5
                          FOR PLAN 1, RATIO =  .34

    TOTAL RAINFALL =    1.27, TOTAL LOSS =    1.25, TOTAL EXCESS =     .03

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                          (CFS)
+      23.      12.92                  8.           3.           3.           3.
                         (INCHES)    .018         .025         .025         .025
                          (AC-FT)      4.           5.           5.           5.

                         CUMULATIVE AREA =    3.89 SQ MI

      ***            ***            ***            ***            ***

                         HYDROGRAPH AT STATION      7.5
                          FOR PLAN 1, RATIO =  .50

    TOTAL RAINFALL =    1.87, TOTAL LOSS =    1.68, TOTAL EXCESS =     .20

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                          (CFS)
+     385.      13.00                 78.          21.          20.          20.
                         (INCHES)    .186         .197         .197         .197
                          (AC-FT)     39.          41.          41.          41.

                         CUMULATIVE AREA =    3.89 SQ MI
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***          ***          ***          ***          ***

                HYDROGRAPH AT STATION      7.5
                 FOR PLAN 1, RATIO =  .61

TOTAL RAINFALL =   2.29, TOTAL LOSS =   1.89, TOTAL EXCESS =    .40

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                                  (CFS)
+   760.      13.00                 160.        41.         40.         40.
                                (INCHES)        .383        .396        .396        .396
                                 (AC-FT)         79.         82.         82.         82.

                CUMULATIVE AREA =    3.89 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION      7.5
                 FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL =   3.75, TOTAL LOSS =   2.68, TOTAL EXCESS =   1.07

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                                  (CFS)
+  2048.      12.92                 437.       112.        107.        107.
                                (INCHES)       1.045       1.067       1.067       1.067
                                 (AC-FT)        217.        221.        221.        221.

                CUMULATIVE AREA =    3.89 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

                **************
                *            *
 500 KK         *    CP7.5   *
                *            *
                **************
                COMBINE ROUTED 7.4 AND BASIN 7.5

 502 HC         HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***
***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CP7.5
                 FOR PLAN 1, RATIO =  .34

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                                  (CFS)
+    23.      12.92                   8.          3.          3.          3.
                                (INCHES)        .003        .005        .005        .005
                                 (AC-FT)          4.          5.          5.          5.

                CUMULATIVE AREA =   20.66 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CP7.5
                 FOR PLAN 1, RATIO =  .50

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                                  (CFS)
+   565.      15.17                 274.        71.         69.         69.
                                (INCHES)        .123        .128        .128        .128
                                 (AC-FT)         136.        142.        142.        142.

                CUMULATIVE AREA =   20.66 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION    CP7.5
                 FOR PLAN 1, RATIO =  .61

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
+  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
                                  (CFS)
+  1380.      14.75                 633.       163.        157.        157.
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                    (INCHES)      .285        .293        .293        .293
                     (AC-FT)      314.        323.        323.        323.

                    CUMULATIVE AREA =   20.66 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    CP7.5
                      FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                             (CFS)
+    4393.     14.25          1900.        484.        466.        466.
                         (INCHES)      .855        .871        .871        .871
                          (AC-FT)      942.        960.        960.        960.

                    CUMULATIVE AREA =   20.66 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  503 KK    *        D5  *
            *            *
            **************
                    DIVERTION @ sr85, 7.5 TO 7.6  7.7

     DT          DIVERSION
                      ISTAD        DIV5  DIVERSION HYDROGRAPH IDENTIFICATION

     DI             INFLOW         .00    100.00    200.00    500.00   1000.00   2500.00   5000.00

     DQ      DIVERTED FLOW         .00     27.00     55.00    135.00    270.00    680.00   1360.00

                                                                  ***

     ***          ***          ***          ***          ***

                    DIVERSION HYDROGRAPH     DIV5
                      FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                             (CFS)
+       6.     12.92             2.          1.          1.          1.
                         (INCHES)      .001        .001        .001        .001
                          (AC-FT)        1.          1.          1.          1.

                    CUMULATIVE AREA =   20.66 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION       D5
                      FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                             (CFS)
+      17.     12.92             6.          2.          2.          2.
                         (INCHES)      .002        .003        .003        .003
                          (AC-FT)        3.          4.          4.          4.

                    CUMULATIVE AREA =   20.66 SQ MI

     ***          ***          ***          ***          ***

                    DIVERSION HYDROGRAPH     DIV5
                      FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                             (CFS)
+     153.     15.17            74.         19.         19.         19.
                         (INCHES)      .034        .035        .035        .035
                          (AC-FT)       37.         38.         38.         38.

                    CUMULATIVE AREA =   20.66 SQ MI

     ***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION       D5
                      FOR PLAN 1, RATIO =  .50
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PEAK FLOW (CFS)	TIME (HR)
+ 413.	15.17

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	200.	52.	50.	50.
(INCHES)	.090	.094	.094	.094
(AC-FT)	99.	103.	103.	103.

CUMULATIVE AREA = 20.66 SQ MI

*** *** *** *** ***

DIVERSION HYDROGRAPH DIV5
FOR PLAN 1, RATIO = .61

PEAK FLOW (CFS)	TIME (HR)
+ 374.	14.75

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	171.	44.	42.	42.
(INCHES)	.077	.079	.079	.079
(AC-FT)	85.	87.	87.	87.

CUMULATIVE AREA = 20.66 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION D5
FOR PLAN 1, RATIO = .61

PEAK FLOW (CFS)	TIME (HR)
+ 1006.	14.75

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	462.	119.	114.	114.
(INCHES)	.208	.214	.214	.214
(AC-FT)	229.	236.	236.	236.

CUMULATIVE AREA = 20.66 SQ MI

*** *** *** *** ***

DIVERSION HYDROGRAPH DIV5
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 1195.	14.25

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	516.	132.	127.	127.
(INCHES)	.232	.237	.237	.237
(AC-FT)	256.	261.	261.	261.

CUMULATIVE AREA = 20.66 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION D5
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)
+ 3198.	14.25

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	1384.	353.	340.	340.
(INCHES)	.623	.635	.635	.635
(AC-FT)	686.	699.	699.	699.

CUMULATIVE AREA = 20.66 SQ MI

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*            *
508 KK   *  7R5  *
*            *
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ROUTE THE FLOW TO CP7.6

HYDROGRAPH ROUTING DATA

511 RL ROUTING LOSSES

QLOSS	.00	INITIAL LOSS
CLOSS	.00	ADDITIONAL FRACTION LOST
PERCRT	1.00	CHANNEL PERCOLATION RATE
ELVINV	100.00	INVERT ELEVATION

```
510 RS          STORAGE ROUTING
                     NSTPS          2  NUMBER OF SUBREACHES
                      ITYP       FLOW  TYPE OF INITIAL CONDITION
                    RSVRIC      -1.00  INITIAL CONDITION
                         X        .00 WORKING R AND D COEFFICIENT

512 RC          NORMAL DEPTH CHANNEL
                       ANL       .050  LEFT OVERBANK N-VALUE
                      ANCH       .050  MAIN CHANNEL N-VALUE
                       ANR       .050  RIGHT OVERBANK N-VALUE
                     RLNTH      5280.  REACH LENGTH
                       SEL      .0133  ENERGY SLOPE
                     ELMAX      105.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
514 RY        ELEVATION   106.00    104.00    102.00    100.10    100.00    102.00    104.00    106.00
513 RX        DISTANCE       .00    100.00   3350.00   4050.00   4750.00   5450.00   8700.00   8800.00

                                                   ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00     20.15     50.35     86.58    128.84    177.13    231.45    291.81    359.89    451.43
          OUTFLOW        .00    192.15    773.59   1708.35   3012.44   4711.10   6832.19   9404.22  12733.04  17184.20
        ELEVATION     100.00    100.26    100.53    100.79    101.05    101.32    101.58    101.84    102.11    102.37

          STORAGE     570.26    716.36    889.75   1090.42   1318.37   1573.60   1847.65   2123.07   2399.32   2676.42
          OUTFLOW   22654.97  29366.50  37509.43  47256.96  58770.24  72201.55  89187.40 108526.10 129731.60 152719.50
        ELEVATION     102.63    102.89    103.16    103.42    103.68    103.95    104.21    104.47    104.74    105.00

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION      7R5
                       FOR PLAN 1, RATIO =  .34

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+      0.        .00                 0.          0.          0.          0.
                        (INCHES)    .000        .000        .000        .000
                        (AC-FT)       0.          0.          0.          0.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       0.        .00                 0.          0.          0.          0.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
    100.00       .00               100.00      100.00      100.00      100.00

                     CUMULATIVE AREA =   20.66 SQ MI

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION      7R5
                       FOR PLAN 1, RATIO =  .50

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    270.     16.00                 113.         28.         27.         27.
                        (INCHES)    .051        .051        .051        .051
                        (AC-FT)      56.         56.         56.         56.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      13.     16.00                   7.          2.          2.          2.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
    100.32     16.00               100.19      100.05      100.05      100.05

                     CUMULATIVE AREA =   20.66 SQ MI

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION      7R5
                       FOR PLAN 1, RATIO =  .61

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    811.     15.33                 361.         91.         88.         88.
```

(INCHES)	.163	.164	.164	.164
(AC-FT)	179.	180.	180.	180.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)	6-HR	24-HR	72-HR	24.92-HR
27.	15.33	15.	4.	4.	4.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)	6-HR	24-HR	72-HR	24.92-HR
100.55	15.33	100.34	100.09	100.09	100.09

CUMULATIVE AREA = 20.66 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION 7R5
FOR PLAN 1, RATIO = 1.00

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)	6-HR	24-HR	72-HR	24.92-HR
+ 2913.	14.67	1258.	318.	306.	306.
		(INCHES) .566	.572	.572	.572
		(AC-FT) 624.	631.	631.	631.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)	6-HR	24-HR	72-HR	24.92-HR
64.	14.67	34.	9.	8.	8.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)	6-HR	24-HR	72-HR	24.92-HR
101.04	14.67	100.63	100.17	100.16	100.16

CUMULATIVE AREA = 20.66 SQ MI

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*            *
*     7.6    *
*            *
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515 KK

BASIN 7.6
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.3 Lca= .6 S= 90.0 Kn= .060 LAG= 33.4
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

520 BA

SUBBASIN CHARACTERISTICS
TAREA 1.92 SUBBASIN AREA

PRECIPITATION DATA

393 PB

STORM 3.75 BASIN TOTAL PRECIPITATION

393 PI

INCREMENTAL PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
.05	.07	.07	.07	.01	.02	.02	.02	.05	.05
.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

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                    .00       .00       .00       .00       .00       .00       .00       .00

521 LG          GREEN AND AMPT LOSS RATE
                     STRTL        .35  STARTING LOSS
                       DTH        .31  MOISTURE DEFICIT
                      PSIF       3.80  WETTING FRONT SUCTION
                     XKSAT        .33  HYDRAULIC CONDUCTIVITY
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

516 UI          INPUT UNITGRAPH,  19 ORDINATES,  VOLUME = 1.00
                    193.0     397.0     843.0    1091.0    1358.0    1869.0    2354.0    1795.0    1439.0    1125.0
                    862.0     486.0     329.0     245.0     187.0      59.0      59.0      59.0      59.0
                                                                   ***

   TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.76, TOTAL EXCESS =     .99

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                   (CFS)
+    1679.      12.33                204.         51.         49.         49.
                              (INCHES)        .990        .990        .990        .990
                               (AC-FT)        101.        101.        101.        101.

                              CUMULATIVE AREA =    1.92 SQ MI

     ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION       7.6
                            FOR PLAN 1, RATIO =  .34

   TOTAL RAINFALL =    1.27, TOTAL LOSS =    1.27, TOTAL EXCESS =     .00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                   (CFS)
+       0.        .00                 0.          0.          0.          0.
                              (INCHES)        .000        .000        .000        .000
                               (AC-FT)         0.          0.          0.          0.

                              CUMULATIVE AREA =    1.92 SQ MI

     ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION       7.6
                            FOR PLAN 1, RATIO =  .50

   TOTAL RAINFALL =    1.87, TOTAL LOSS =    1.73, TOTAL EXCESS =     .15

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                   (CFS)
+     296.      12.42                31.          8.          7.          7.
                              (INCHES)        .149        .149        .149        .149
                               (AC-FT)        15.         15.         15.         15.

                              CUMULATIVE AREA =    1.92 SQ MI

     ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION       7.6
                            FOR PLAN 1, RATIO =  .61

   TOTAL RAINFALL =    2.29, TOTAL LOSS =    1.95, TOTAL EXCESS =     .34

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                   (CFS)
+     605.      12.42                70.         17.         17.         17.
                              (INCHES)        .338        .338        .338        .338
                               (AC-FT)        35.         35.         35.         35.

                              CUMULATIVE AREA =    1.92 SQ MI

     ***            ***            ***            ***            ***

                          HYDROGRAPH AT STATION       7.6
                            FOR PLAN 1, RATIO = 1.00

   TOTAL RAINFALL =    3.75, TOTAL LOSS =    2.76, TOTAL EXCESS =     .99

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+   (CFS)        (HR)
                                   (CFS)
+    1679.      12.33                204.         51.         49.         49.
                              (INCHES)        .990        .990        .990        .990
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                    (AC-FT)      101.        101.        101.        101.
                    CUMULATIVE AREA =    1.92 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
526 KK        *    CP7.6   *
              *            *
              **************
                    COMBINE FLOW FROM BASINS 7.5 AND 7.6

528 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***
     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP7.6
                      FOR PLAN 1, RATIO =  .34

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                 6-HR       24-HR       72-HR      24.92-HR
                                  (CFS)
+     0.         .00                   0.          0.          0.          0.
                              (INCHES)  .000        .000        .000        .000
                               (AC-FT)    0.          0.          0.          0.
                    CUMULATIVE AREA =    22.58 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP7.6
                      FOR PLAN 1, RATIO =  .50

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                 6-HR       24-HR       72-HR      24.92-HR
                                  (CFS)
+   296.         12.42                137.        36.         34.         34.
                              (INCHES)  .056        .059        .059        .059
                               (AC-FT)   68.        71.         71.         71.
                    CUMULATIVE AREA =    22.58 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP7.6
                      FOR PLAN 1, RATIO =  .61

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                 6-HR       24-HR       72-HR      24.92-HR
                                  (CFS)
+   811.         15.33                418.       108.        104.        104.
                              (INCHES)  .172        .178        .178        .178
                               (AC-FT)  207.        215.        215.        215.
                    CUMULATIVE AREA =    22.58 SQ MI

     ***            ***            ***            ***            ***

                    HYDROGRAPH AT STATION    CP7.6
                      FOR PLAN 1, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
+   (CFS)        (HR)                 6-HR       24-HR       72-HR      24.92-HR
                                  (CFS)
+  2913.         14.67               1441.       369.        355.        355.
                              (INCHES)  .594        .608        .608        .608
                               (AC-FT)  715.        732.        732.        732.
                    CUMULATIVE AREA =    22.58 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
529 KK        *    CP6&7   *
              *            *
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COMBINE FLOW FROM BASINS 6 AND 7 NORTH OF SKI LAKE

531 KO OUTPUT CONTROL VARIABLES

IPRNT	1	PRINT CONTROL
IPLOT	2	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

532 HC HYDROGRAPH COMBINATION

ICOMP	2	NUMBER OF HYDROGRAPHS TO COMBINE

***

****

HYDROGRAPH AT STATION CP6&7
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .34

****

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		0615	76	0.	1		1230	151	1.	1		1845	226	0.
1		0005	2	0.	1		0620	77	0.	1		1235	152	1.	1		1850	227	0.
1		0010	3	0.	1		0625	78	0.	1		1240	153	0.	1		1855	228	0.
1		0015	4	0.	1		0630	79	0.	1		1245	154	0.	1		1900	229	0.
1		0020	5	0.	1		0635	80	0.	1		1250	155	0.	1		1905	230	0.
1		0025	6	0.	1		0640	81	0.	1		1255	156	0.	1		1910	231	0.
1		0030	7	0.	1		0645	82	0.	1		1300	157	0.	1		1915	232	0.
1		0035	8	0.	1		0650	83	0.	1		1305	158	0.	1		1920	233	0.
1		0040	9	0.	1		0655	84	0.	1		1310	159	0.	1		1925	234	0.
1		0045	10	0.	1		0700	85	0.	1		1315	160	0.	1		1930	235	0.
1		0050	11	0.	1		0705	86	0.	1		1320	161	0.	1		1935	236	0.
1		0055	12	0.	1		0710	87	0.	1		1325	162	0.	1		1940	237	0.
1		0100	13	0.	1		0715	88	0.	1		1330	163	0.	1		1945	238	0.
1		0105	14	0.	1		0720	89	0.	1		1335	164	0.	1		1950	239	0.
1		0110	15	0.	1		0725	90	0.	1		1340	165	0.	1		1955	240	0.
1		0115	16	0.	1		0730	91	0.	1		1345	166	0.	1		2000	241	0.
1		0120	17	0.	1		0735	92	0.	1		1350	167	0.	1		2005	242	0.
1		0125	18	0.	1		0740	93	0.	1		1355	168	0.	1		2010	243	0.
1		0130	19	0.	1		0745	94	0.	1		1400	169	0.	1		2015	244	0.
1		0135	20	0.	1		0750	95	0.	1		1405	170	0.	1		2020	245	0.
1		0140	21	0.	1		0755	96	0.	1		1410	171	0.	1		2025	246	0.
1		0145	22	0.	1		0800	97	0.	1		1415	172	0.	1		2030	247	0.
1		0150	23	0.	1		0805	98	0.	1		1420	173	0.	1		2035	248	0.
1		0155	24	0.	1		0810	99	0.	1		1425	174	0.	1		2040	249	0.
1		0200	25	0.	1		0815	100	0.	1		1430	175	0.	1		2045	250	0.
1		0205	26	0.	1		0820	101	0.	1		1435	176	0.	1		2050	251	0.
1		0210	27	0.	1		0825	102	0.	1		1440	177	0.	1		2055	252	0.
1		0215	28	0.	1		0830	103	0.	1		1445	178	0.	1		2100	253	0.
1		0220	29	0.	1		0835	104	0.	1		1450	179	0.	1		2105	254	0.
1		0225	30	0.	1		0840	105	0.	1		1455	180	0.	1		2110	255	0.
1		0230	31	0.	1		0845	106	0.	1		1500	181	0.	1		2115	256	0.
1		0235	32	0.	1		0850	107	0.	1		1505	182	0.	1		2120	257	0.
1		0240	33	0.	1		0855	108	0.	1		1510	183	0.	1		2125	258	0.
1		0245	34	0.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	0.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	0.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	0.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	0.	1		0920	113	0.	1		1535	188	0.	1		2150	263	0.
1		0310	39	0.	1		0925	114	0.	1		1540	189	0.	1		2155	264	0.
1		0315	40	0.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	0.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	0.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	0.	1		0945	118	0.	1		1600	193	0.	1		2215	268	0.
1		0335	44	0.	1		0950	119	0.	1		1605	194	0.	1		2220	269	0.
1		0340	45	0.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	0.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	0.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	0.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	0.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	0.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	0.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	0.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	0.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	0.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	0.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	0.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	0.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	0.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	0.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	0.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	0.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	0.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	0.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	0.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	0.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.
1		0525	66	0.	1		1140	141	0.	1		1755	216	0.	2		0010	291	0.
1		0530	67	0.	1		1145	142	0.	1		1800	217	0.	2		0015	292	0.
1		0535	68	0.	1		1150	143	0.	1		1805	218	0.	2		0020	293	0.
1		0540	69	0.	1		1155	144	0.	1		1810	219	0.	2		0025	294	0.
1		0545	70	0.	1		1200	145	0.	1		1815	220	0.	2		0030	295	0.
1		0550	71	0.	1		1205	146	0.	1		1820	221	0.	2		0035	296	0.
1		0555	72	0.	1		1210	147	1.	1		1825	222	0.	2		0040	297	0.

1	0600	73	0.	*	1	1215	148	1.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	0.	*	1	1220	149	1.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	0.	*	1	1225	150	1.	*	1	1840	225	0.	*	2	0055	300	0.
				*					*					*				

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 1.	12.33	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 37.74 SQ MI

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STATION CP6&7

(O) OUTFLOW

DAHRMN	PER	.0	.2	.4	.6	.8	1.0	1.2	1.4	1.6	.0	.0	.0	.0
10000	10													
10005	20													
10010	30													
10015	40													
10020	50													
10025	60													
10030	70													
10035	80													
10040	90													
10045	100													
10050	110													
10055	120													
10100	130													
10105	140													
10110	150													
10115	160													
10120	170													
10125	180													
10130	190													
10135	200													
10140	210													
10145	220													
10150	230													
10155	240													
10200	250													
10205	260													
10210	270													
10215	280													
10220	290													
10225	300													
10230	310													
10235	320													
10240	330													
10245	340													
10250	350													
10255	360													
10300	370													
10305	380													
10310	390													
10315	400													
10320	410													
10325	420													
10330	430													
10335	440													
10340	450													
10345	460													
10350	470													
10355	480													
10400	490													
10405	500													
10410	510													
10415	520													
10420	530													
10425	540													
10430	550													
10435	560													
10440	570													
10445	580													
10450	590													
10455	600													
10500	610													
10505	620													
10510	630													
10515	640													
10520	650													
10525	660													
10530	670													
10535	680													
10540	690													
10545	700													
10550	710													
10555	720													
10600	730													
10605	740													

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10610  750
10615  760
10620  770
10625  780
10630  790
10635  800
10640  810
10645  820
10650  830
10655  840
10700  850
10705  860
10710  870
10715  880
10720  890
10725  900
10730  910
10735  920
10740  930
10745  940
10750  950
10755  960
10800  970
10805  980
10810  990
10815 1000
10820 1010
10825 1020
10830 1030
10835 1040
10840 1050
10845 1060
10850 1070
10855 1080
10900 1090
10905 1100
10910 1110
10915 1120
10920 1130
10925 1140
10930 1150
10935 1160
10940 1170
10945 1180
10950 1190
10955 1200
11000 1210
11005 1220
11010 1230
11015 1240
11020 1250
11025 1260
11030 1270
11035 1280
11040 1290
11045 1300
11050 1310
11055 1320
11100 1330
11105 1340
11110 1350
11115 1360
11120 1370
11125 1380
11130 1390
11135 1400
11140 1410
11145 1420
11150 1430
11155 1440
11200 145.     o
11205 146.       o
11210 147.         o
11215 148.           o
11220 149.             o
11225 150.               o
11230 151.             o
11235 152.         o
11240 153.       o
11245 154.     o
11250 155.     o
11255 156.  o
11300 157. o
11305 158. o
11310 1590
11315 1600
11320 1610
11325 1620
11330 1630
11335 1640
11340 1650
11345 1660
11350 1670
11355 1680
11400 1690
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11405 1700
11410 1710
11415 1720
11420 1730
11425 1740
11430 1750
11435 1760
11440 1770
11445 1780
11450 1790
11455 1800
11500 1810
11505 1820
11510 1830
11515 1840
11520 1850
11525 1860
11530 1870
11535 1880
11540 1890
11545 1900
11550 1910
11555 1920
11600 1930
11605 1940
11610 1950
11615 1960
11620 1970
11625 1980
11630 1990
11635 2000
11640 2010
11645 2020
11650 2030
11655 2040
11700 2050
11705 2060
11710 2070
11715 2080
11720 2090
11725 2100
11730 2110
11735 2120
11740 2130
11745 2140
11750 2150
11755 2160
11800 2170
11805 2180
11810 2190
11815 2200
11820 2210
11825 2220
11830 2230
11835 2240
11840 2250
11845 2260
11850 2270
11855 2280
11900 2290
11905 2300
11910 2310
11915 2320
11920 2330
11925 2340
11930 2350
11935 2360
11940 2370
11945 2380
11950 2390
11955 2400
12000 2410
12005 2420
12010 2430
12015 2440
12020 2450
12025 2460
12030 2470
12035 2480
12040 2490
12045 2500
12050 2510
12055 2520
12100 2530
12105 2540
12110 2550
12115 2560
12120 2570
12125 2580
12130 2590
12135 2600
12140 2610
12145 2620
12150 2630
12155 2640

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12200 2650         .         .         .         .         .         .         .         .         .         .         .         .
12205 2660         .         .         .         .         .         .         .         .         .         .         .         .
12210 2670         .         .         .         .         .         .         .         .         .         .         .         .
12215 2680         .         .         .         .         .         .         .         .         .         .         .         .
12220 2690         .         .         .         .         .         .         .         .         .         .         .         .
12225 2700         .         .         .         .         .         .         .         .         .         .         .         .
12230 2710 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 2720         .         .         .         .         .         .         .         .         .         .         .         .
12240 2730         .         .         .         .         .         .         .         .         .         .         .         .
12245 2740         .         .         .         .         .         .         .         .         .         .         .         .
12250 2750         .         .         .         .         .         .         .         .         .         .         .         .
12255 2760         .         .         .         .         .         .         .         .         .         .         .         .
12300 2770         .         .         .         .         .         .         .         .         .         .         .         .
12305 2780         .         .         .         .         .         .         .         .         .         .         .         .
12310 2790         .         .         .         .         .         .         .         .         .         .         .         .
12315 2800         .         .         .         .         .         .         .         .         .         .         .         .
12320 2810 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 2820         .         .         .         .         .         .         .         .         .         .         .         .
12330 2830         .         .         .         .         .         .         .         .         .         .         .         .
12335 2840         .         .         .         .         .         .         .         .         .         .         .         .
12340 2850         .         .         .         .         .         .         .         .         .         .         .         .
12345 2860         .         .         .         .         .         .         .         .         .         .         .         .
12350 2870         .         .         .         .         .         .         .         .         .         .         .         .
12355 2880         .         .         .         .         .         .         .         .         .         .         .         .
20000 2890         .         .         .         .         .         .         .         .         .         .         .         .
20005 2900         .         .         .         .         .         .         .         .         .         .         .         .
20010 2910 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
20015 2920         .         .         .         .         .         .         .         .         .         .         .         .
20020 2930         .         .         .         .         .         .         .         .         .         .         .         .
20025 2940         .         .         .         .         .         .         .         .         .         .         .         .
20030 2950         .         .         .         .         .         .         .         .         .         .         .         .
20035 2960         .         .         .         .         .         .         .         .         .         .         .         .
20040 2970         .         .         .         .         .         .         .         .         .         .         .         .
20045 2980         .         .         .         .         .         .         .         .         .         .         .         .
20050 2990         .         .         .         .         .         .         .         .         .         .         .         .
20055 3000---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
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HYDROGRAPH AT STATION CP6&7
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .50

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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		0615	76	0.	*	1		1230	151	302.	*	1		1845	226	19.
1		0005	2	0.	*	1		0620	77	0.	*	1		1235	152	233.	*	1		1850	227	13.
1		0010	3	0.	*	1		0625	78	0.	*	1		1240	153	179.	*	1		1855	228	8.
1		0015	4	0.	*	1		0630	79	0.	*	1		1245	154	130.	*	1		1900	229	5.
1		0020	5	0.	*	1		0635	80	0.	*	1		1250	155	91.	*	1		1905	230	5.
1		0025	6	0.	*	1		0640	81	0.	*	1		1255	156	60.	*	1		1910	231	5.
1		0030	7	0.	*	1		0645	82	0.	*	1		1300	157	46.	*	1		1915	232	5.
1		0035	8	0.	*	1		0650	83	0.	*	1		1305	158	44.	*	1		1920	233	5.
1		0040	9	0.	*	1		0655	84	0.	*	1		1310	159	47.	*	1		1925	234	5.
1		0045	10	0.	*	1		0700	85	0.	*	1		1315	160	52.	*	1		1930	235	5.
1		0050	11	0.	*	1		0705	86	0.	*	1		1320	161	63.	*	1		1935	236	5.
1		0055	12	0.	*	1		0710	87	0.	*	1		1325	162	69.	*	1		1940	237	4.
1		0100	13	0.	*	1		0715	88	0.	*	1		1330	163	74.	*	1		1945	238	4.
1		0105	14	0.	*	1		0720	89	0.	*	1		1335	164	77.	*	1		1950	239	4.
1		0110	15	0.	*	1		0725	90	0.	*	1		1340	165	81.	*	1		1955	240	4.
1		0115	16	0.	*	1		0730	91	0.	*	1		1345	166	84.	*	1		2000	241	4.
1		0120	17	0.	*	1		0735	92	0.	*	1		1350	167	85.	*	1		2005	242	4.
1		0125	18	0.	*	1		0740	93	0.	*	1		1355	168	85.	*	1		2010	243	4.
1		0130	19	0.	*	1		0745	94	0.	*	1		1400	169	83.	*	1		2015	244	4.
1		0135	20	0.	*	1		0750	95	0.	*	1		1405	170	81.	*	1		2020	245	4.
1		0140	21	0.	*	1		0755	96	0.	*	1		1410	171	77.	*	1		2025	246	4.
1		0145	22	0.	*	1		0800	97	0.	*	1		1415	172	74.	*	1		2030	247	4.
1		0150	23	0.	*	1		0805	98	0.	*	1		1420	173	71.	*	1		2035	248	4.
1		0155	24	0.	*	1		0810	99	0.	*	1		1425	174	69.	*	1		2040	249	4.
1		0200	25	0.	*	1		0815	100	0.	*	1		1430	175	68.	*	1		2045	250	4.
1		0205	26	0.	*	1		0820	101	0.	*	1		1435	176	68.	*	1		2050	251	4.
1		0210	27	0.	*	1		0825	102	0.	*	1		1440	177	71.	*	1		2055	252	4.
1		0215	28	0.	*	1		0830	103	0.	*	1		1445	178	75.	*	1		2100	253	4.
1		0220	29	0.	*	1		0835	104	0.	*	1		1450	179	81.	*	1		2105	254	3.
1		0225	30	0.	*	1		0840	105	0.	*	1		1455	180	90.	*	1		2110	255	3.
1		0230	31	0.	*	1		0845	106	0.	*	1		1500	181	103.	*	1		2115	256	3.
1		0235	32	0.	*	1		0850	107	0.	*	1		1505	182	118.	*	1		2120	257	3.
1		0240	33	0.	*	1		0855	108	0.	*	1		1510	183	134.	*	1		2125	258	3.
1		0245	34	0.	*	1		0900	109	0.	*	1		1515	184	151.	*	1		2130	259	3.
1		0250	35	0.	*	1		0905	110	0.	*	1		1520	185	169.	*	1		2135	260	3.
1		0255	36	0.	*	1		0910	111	0.	*	1		1525	186	199.	*	1		2140	261	3.
1		0300	37	0.	*	1		0915	112	0.	*	1		1530	187	223.	*	1		2145	262	3.
1		0305	38	0.	*	1		0920	113	0.	*	1		1535	188	243.	*	1		2150	263	3.
1		0310	39	0.	*	1		0925	114	0.	*	1		1540	189	258.	*	1		2155	264	3.
1		0315	40	0.	*	1		0930	115	0.	*	1		1545	190	269.	*	1		2200	265	3.
1		0320	41	0.	*	1		0935	116	0.	*	1		1550	191	277.	*	1		2205	266	3.
1		0325	42	0.	*	1		0940	117	0.	*	1		1555	192	282.	*	1		2210	267	3.
1		0330	43	0.	*	1		0945	118	0.	*	1		1600	193	283.	*	1		2215	268	3.
1		0335	44	0.	*	1		0950	119	0.	*	1		1605	194	282.	*	1		2220	269	3.
1		0340	45	0.	*	1		0955	120	0.	*	1		1610	195	278.	*	1		2225	270	3.
1		0345	46	0.	*	1		1000	121	0.	*	1		1615	196	273.	*	1		2230	271	3.
1		0350	47	0.	*	1		1005	122	0.	*	1		1620	197	265.	*	1		2235	272	3.

1	0355	48	0.	*	1	1010	123	0.	*	1	1625	198	256.	*	1	2240	273	3.
1	0400	49	0.	*	1	1015	124	0.	*	1	1630	199	246.	*	1	2245	274	3.
1	0405	50	0.	*	1	1020	125	0.	*	1	1635	200	234.	*	1	2250	275	3.
1	0410	51	0.	*	1	1025	126	0.	*	1	1640	201	221.	*	1	2255	276	3.
1	0415	52	0.	*	1	1030	127	0.	*	1	1645	202	209.	*	1	2300	277	3.
1	0420	53	0.	*	1	1035	128	0.	*	1	1650	203	194.	*	1	2305	278	3.
1	0425	54	0.	*	1	1040	129	0.	*	1	1655	204	180.	*	1	2310	279	2.
1	0430	55	0.	*	1	1045	130	0.	*	1	1700	205	166.	*	1	2315	280	2.
1	0435	56	0.	*	1	1050	131	0.	*	1	1705	206	158.	*	1	2320	281	2.
1	0440	57	0.	*	1	1055	132	0.	*	1	1710	207	151.	*	1	2325	282	2.
1	0445	58	0.	*	1	1100	133	0.	*	1	1715	208	144.	*	1	2330	283	2.
1	0450	59	0.	*	1	1105	134	0.	*	1	1720	209	136.	*	1	2335	284	2.
1	0455	60	0.	*	1	1110	135	0.	*	1	1725	210	129.	*	1	2340	285	2.
1	0500	61	0.	*	1	1115	136	0.	*	1	1730	211	121.	*	1	2345	286	2.
1	0505	62	0.	*	1	1120	137	0.	*	1	1735	212	114.	*	1	2350	287	2.
1	0510	63	0.	*	1	1125	138	0.	*	1	1740	213	106.	*	1	2355	288	2.
1	0515	64	0.	*	1	1130	139	0.	*	1	1745	214	98.	*	2	0000	289	2.
1	0520	65	0.	*	1	1135	140	0.	*	1	1750	215	91.	*	2	0005	290	2.
1	0525	66	0.	*	1	1140	141	0.	*	1	1755	216	84.	*	2	0010	291	2.
1	0530	67	0.	*	1	1145	142	3.	*	1	1800	217	77.	*	2	0015	292	2.
1	0535	68	0.	*	1	1150	143	15.	*	1	1805	218	70.	*	2	0020	293	2.
1	0540	69	0.	*	1	1155	144	41.	*	1	1810	219	63.	*	2	0025	294	2.
1	0545	70	0.	*	1	1200	145	91.	*	1	1815	220	56.	*	2	0030	295	2.
1	0550	71	0.	*	1	1205	146	146.	*	1	1820	221	49.	*	2	0035	296	2.
1	0555	72	0.	*	1	1210	147	205.	*	1	1825	222	43.	*	2	0040	297	2.
1	0600	73	0.	*	1	1215	148	261.	*	1	1830	223	37.	*	2	0045	298	2.
1	0605	74	0.	*	1	1220	149	316.	*	1	1835	224	31.	*	2	0050	299	2.
1	0610	75	0.	*	1	1225	150	331.	*	1	1840	225	25.	*	2	0055	300	2.

****

PEAK FLOW (CFS)	TIME (HR)		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	24.92-HR
+ 331.	12.42	(CFS)	151.	41.	39.	39.
		(INCHES)	.037	.040	.040	.040
		(AC-FT)	75.	80.	80.	80.

CUMULATIVE AREA = 37.74 SQ MI

1

STATION CP6&7

(O) OUTFLOW

DAHRMN	PER	0.	40.	80.	120.	160.	200.	240.	280.	320.	360.	0.	0.	0.
10000	10													
10005	20													
10010	30													
10015	40													
10020	50													
10025	60													
10030	70													
10035	80													
10040	90													
10045	100													
10050	110													
10055	120													
10100	130													
10105	140													
10110	150													
10115	160													
10120	170													
10125	180													
10130	190													
10135	200													
10140	210													
10145	220													
10150	230													
10155	240													
10200	250													
10205	260													
10210	270													
10215	280													
10220	290													
10225	300													
10230	310													
10235	320													
10240	330													
10245	340													
10250	350													
10255	360													
10300	370													
10305	380													
10310	390													
10315	400													
10320	410													
10325	420													
10330	430													
10335	440													
10340	450													
10345	460													
10350	470													
10355	480													
10400	490													

10405	500													
10410	510													
10415	520													
10420	530													
10425	540													
10430	550													
10435	560													
10440	570													
10445	580													
10450	590													
10455	600													
10500	610													
10505	620													
10510	630													
10515	640													
10520	650													
10525	660													
10530	670													
10535	680													
10540	690													
10545	700													
10550	710													
10555	720													
10600	730													
10605	740													
10610	750													
10615	760													
10620	770													
10625	780													
10630	790													
10635	800													
10640	810													
10645	820													
10650	830													
10655	840													
10700	850													
10705	860													
10710	870													
10715	880													
10720	890													
10725	900													
10730	910													
10735	920													
10740	930													
10745	940													
10750	950													
10755	960													
10800	970													
10805	980													
10810	990													
10815	1000													
10820	1010													
10825	1020													
10830	1030													
10835	1040													
10840	1050													
10845	1060													
10850	1070													
10855	1080													
10900	1090													
10905	1100													
10910	1110													
10915	1120													
10920	1130													
10925	1140													
10930	1150													
10935	1160													
10940	1170													
10945	1180													
10950	1190													
10955	1200													
11000	1210													
11005	1220													
11010	1230													
11015	1240													
11020	1250													
11025	1260													
11030	1270													
11035	1280													
11040	1290													
11045	1300													
11050	1310													
11055	1320													
11100	1330													
11105	1340													
11110	1350													
11115	1360													
11120	1370													
11125	1380													
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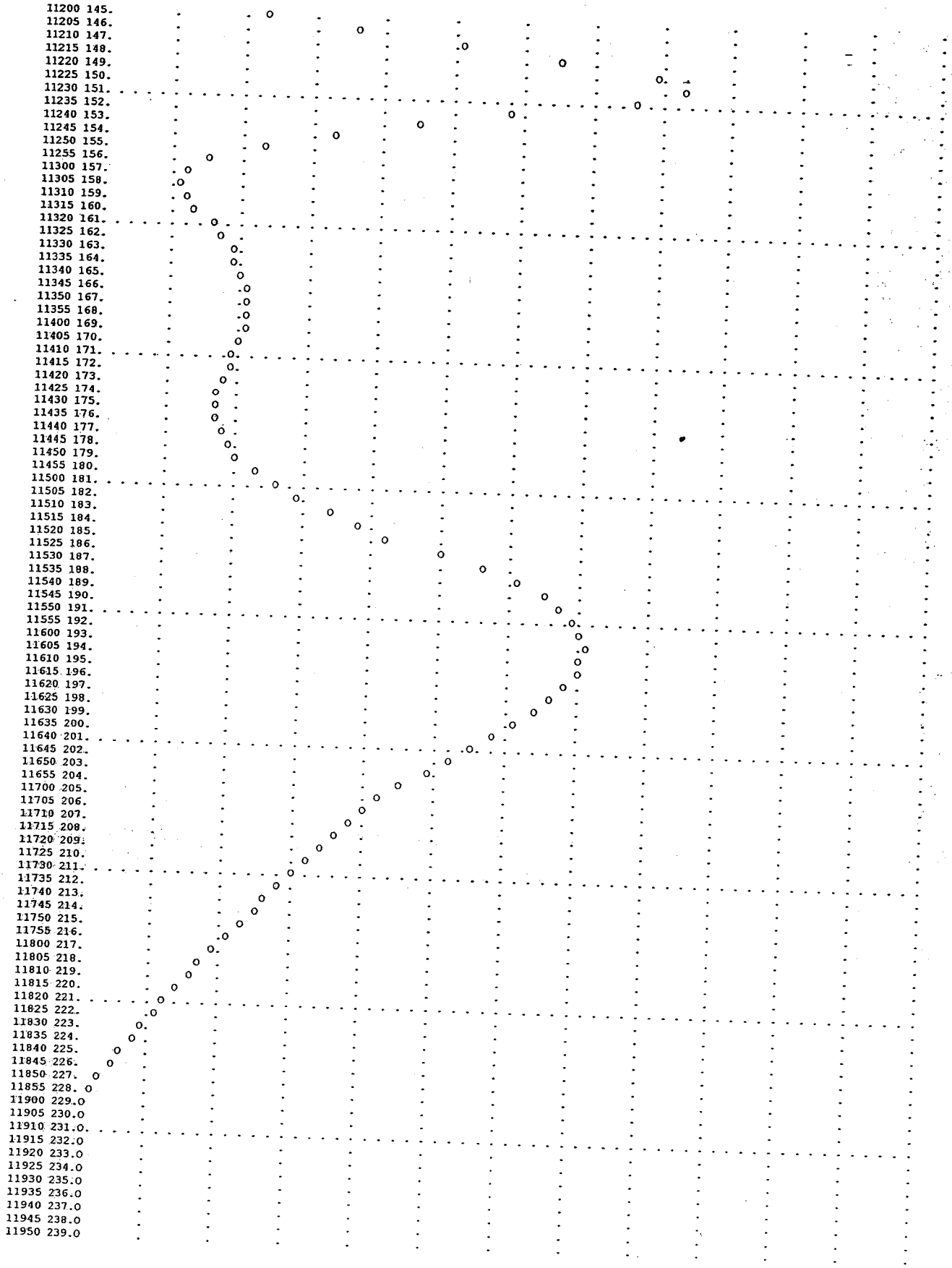
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1
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HYDROGRAPH AT STATION CP6&7
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .61

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		0615	76	0.	1		1230	151	735.	1		1845	226	86.
1		0005	2	0.	1		0620	77	0.	1		1235	152	580.	1		1850	227	79.
1		0010	3	0.	1		0625	78	0.	1		1240	153	474.	1		1855	228	72.
1		0015	4	0.	1		0630	79	0.	1		1245	154	396.	1		1900	229	65.
1		0020	5	0.	1		0635	80	0.	1		1250	155	340.	1		1905	230	58.
1		0025	6	0.	1		0640	81	0.	1		1255	156	303.	1		1910	231	52.
1		0030	7	0.	1		0645	82	0.	1		1300	157	300.	1		1915	232	45.
1		0035	8	0.	1		0650	83	0.	1		1305	158	310.	1		1920	233	40.
1		0040	9	0.	1		0655	84	0.	1		1310	159	333.	1		1925	234	40.
1		0045	10	0.	1		0700	85	0.	1		1315	160	378.	1		1930	235	39.
1		0050	11	0.	1		0705	86	0.	1		1320	161	424.	1		1935	236	38.
1		0055	12	0.	1		0710	87	0.	1		1325	162	452.	1		1940	237	38.
1		0100	13	0.	1		0715	88	0.	1		1330	163	468.	1		1945	238	37.
1		0105	14	0.	1		0720	89	0.	1		1335	164	473.	1		1950	239	37.
1		0110	15	0.	1		0725	90	0.	1		1340	165	475.	1		1955	240	36.
1		0115	16	0.	1		0730	91	0.	1		1345	166	472.	1		2000	241	36.
1		0120	17	0.	1		0735	92	0.	1		1350	167	467.	1		2005	242	35.
1		0125	18	0.	1		0740	93	0.	1		1355	168	464.	1		2010	243	35.
1		0130	19	0.	1		0745	94	0.	1		1400	169	466.	1		2015	244	34.
1		0135	20	0.	1		0750	95	0.	1		1405	170	473.	1		2020	245	34.
1		0140	21	0.	1		0755	96	0.	1		1410	171	489.	1		2025	246	33.
1		0145	22	0.	1		0800	97	0.	1		1415	172	513.	1		2030	247	33.

1	0150	23	0.	*	1	0805	98	0.	*	1	1420	173	545.	*	1	2035	248	32.
1	0155	24	0.	*	1	0810	99	0.	*	1	1425	174	583.	*	1	2040	249	32.
1	0200	25	0.	*	1	0815	100	0.	*	1	1430	175	625.	*	1	2045	250	31.
1	0205	26	0.	*	1	0820	101	0.	*	1	1435	176	670.	*	1	2050	251	31.
1	0210	27	0.	*	1	0825	102	0.	*	1	1440	177	711.	*	1	2055	252	30.
1	0215	28	0.	*	1	0830	103	0.	*	1	1445	178	765.	*	1	2100	253	30.
1	0220	29	0.	*	1	0835	104	0.	*	1	1450	179	809.	*	1	2105	254	29.
1	0225	30	0.	*	1	0840	105	0.	*	1	1455	180	848.	*	1	2110	255	29.
1	0230	31	0.	*	1	0845	106	0.	*	1	1500	181	883.	*	1	2115	256	28.
1	0235	32	0.	*	1	0850	107	0.	*	1	1505	182	915.	*	1	2120	257	28.
1	0240	33	0.	*	1	0855	108	0.	*	1	1510	183	935.	*	1	2125	258	28.
1	0245	34	0.	*	1	0900	109	0.	*	1	1515	184	943.	*	1	2130	259	27.
1	0250	35	0.	*	1	0905	110	0.	*	1	1520	185	942.	*	1	2135	260	27.
1	0255	36	0.	*	1	0910	111	0.	*	1	1525	186	932.	*	1	2140	261	26.
1	0300	37	0.	*	1	0915	112	0.	*	1	1530	187	914.	*	1	2145	262	26.
1	0305	38	0.	*	1	0920	113	0.	*	1	1535	188	890.	*	1	2150	263	26.
1	0310	39	0.	*	1	0925	114	0.	*	1	1540	189	861.	*	1	2155	264	25.
1	0315	40	0.	*	1	0930	115	0.	*	1	1545	190	832.	*	1	2200	265	25.
1	0320	41	0.	*	1	0935	116	0.	*	1	1550	191	805.	*	1	2205	266	24.
1	0325	42	0.	*	1	0940	117	0.	*	1	1555	192	776.	*	1	2210	267	24.
1	0330	43	0.	*	1	0945	118	0.	*	1	1600	193	744.	*	1	2215	268	24.
1	0335	44	0.	*	1	0950	119	0.	*	1	1605	194	710.	*	1	2220	269	23.
1	0340	45	0.	*	1	0955	120	0.	*	1	1610	195	676.	*	1	2225	270	23.
1	0345	46	0.	*	1	1000	121	0.	*	1	1615	196	641.	*	1	2230	271	23.
1	0350	47	0.	*	1	1005	122	0.	*	1	1620	197	606.	*	1	2235	272	22.
1	0355	48	0.	*	1	1010	123	0.	*	1	1625	198	572.	*	1	2240	273	22.
1	0400	49	0.	*	1	1015	124	0.	*	1	1630	199	539.	*	1	2245	274	22.
1	0405	50	0.	*	1	1020	125	0.	*	1	1635	200	507.	*	1	2250	275	22.
1	0410	51	0.	*	1	1025	126	0.	*	1	1640	201	477.	*	1	2255	276	21.
1	0415	52	0.	*	1	1030	127	0.	*	1	1645	202	447.	*	1	2300	277	21.
1	0420	53	0.	*	1	1035	128	0.	*	1	1650	203	418.	*	1	2305	278	21.
1	0425	54	0.	*	1	1040	129	0.	*	1	1655	204	389.	*	1	2310	279	21.
1	0430	55	0.	*	1	1045	130	0.	*	1	1700	205	362.	*	1	2315	280	20.
1	0435	56	0.	*	1	1050	131	0.	*	1	1705	206	337.	*	1	2320	281	20.
1	0440	57	0.	*	1	1055	132	0.	*	1	1710	207	312.	*	1	2325	282	20.
1	0445	58	0.	*	1	1100	133	0.	*	1	1715	208	288.	*	1	2330	283	20.
1	0450	59	0.	*	1	1105	134	0.	*	1	1720	209	265.	*	1	2335	284	20.
1	0455	60	0.	*	1	1110	135	0.	*	1	1725	210	244.	*	1	2340	285	20.
1	0500	61	0.	*	1	1115	136	0.	*	1	1730	211	225.	*	1	2345	286	19.
1	0505	62	0.	*	1	1120	137	0.	*	1	1735	212	212.	*	1	2350	287	19.
1	0510	63	0.	*	1	1125	138	0.	*	1	1740	213	202.	*	1	2355	288	19.
1	0515	64	0.	*	1	1130	139	0.	*	1	1745	214	192.	*	2	0000	289	19.
1	0520	65	0.	*	1	1135	140	5.	*	1	1750	215	182.	*	2	0005	290	19.
1	0525	66	0.	*	1	1140	141	18.	*	1	1755	216	172.	*	2	0010	291	19.
1	0530	67	0.	*	1	1145	142	47.	*	1	1800	217	162.	*	2	0015	292	18.
1	0535	68	0.	*	1	1150	143	104.	*	1	1805	218	153.	*	2	0020	293	18.
1	0540	69	0.	*	1	1155	144	205.	*	1	1810	219	144.	*	2	0025	294	18.
1	0545	70	0.	*	1	1200	145	363.	*	1	1815	220	135.	*	2	0030	295	18.
1	0550	71	0.	*	1	1205	146	551.	*	1	1820	221	126.	*	2	0035	296	18.
1	0555	72	0.	*	1	1210	147	724.	*	1	1825	222	118.	*	2	0040	297	17.
1	0600	73	0.	*	1	1215	148	838.	*	1	1830	223	110.	*	2	0045	298	17.
1	0605	74	0.	*	1	1220	149	882.	*	1	1835	224	102.	*	2	0050	299	17.
1	0610	75	0.	*	1	1225	150	842.	*	1	1840	225	94.	*	2	0055	300	17.
				*					*					*				

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+		(CFS)				
+ 943.	15.25		554.	151.	146.	146.
		(INCHES)	.137	.149	.149	.149
		(AC-FT)	275.	300.	300.	300.

CUMULATIVE AREA = 37.74 SQ MI

1 STATION CP6&7

(O) OUTFLOW

DAHRMN	PER	0.	100.	200.	300.	400.	500.	600.	700.	800.	900.	1000.	0.	0.
10000	10													
10005	20													
10010	30													
10015	40													
10020	50													
10025	60													
10030	70													
10035	80													
10040	90													
10045	100													
10050	110													
10055	120													
10100	130													
10105	140													
10110	150													
10115	160													
10120	170													
10125	180													
10130	190													
10135	200													
10140	210													
10145	220													
10150	230													
10155	240													

10200	250
10205	260
10210	270
10215	280
10220	290
10225	300
10230	310
10235	320
10240	330
10245	340
10250	350
10255	360
10300	370
10305	380
10310	390
10315	400
10320	410
10325	420
10330	430
10335	440
10340	450
10345	460
10350	470
10355	480
10400	490
10405	500
10410	510
10415	520
10420	530
10425	540
10430	550
10435	560
10440	570
10445	580
10450	590
10455	600
10500	610
10505	620
10510	630
10515	640
10520	650
10525	660
10530	670
10535	680
10540	690
10545	700
10550	710
10555	720
10600	730
10605	740
10610	750
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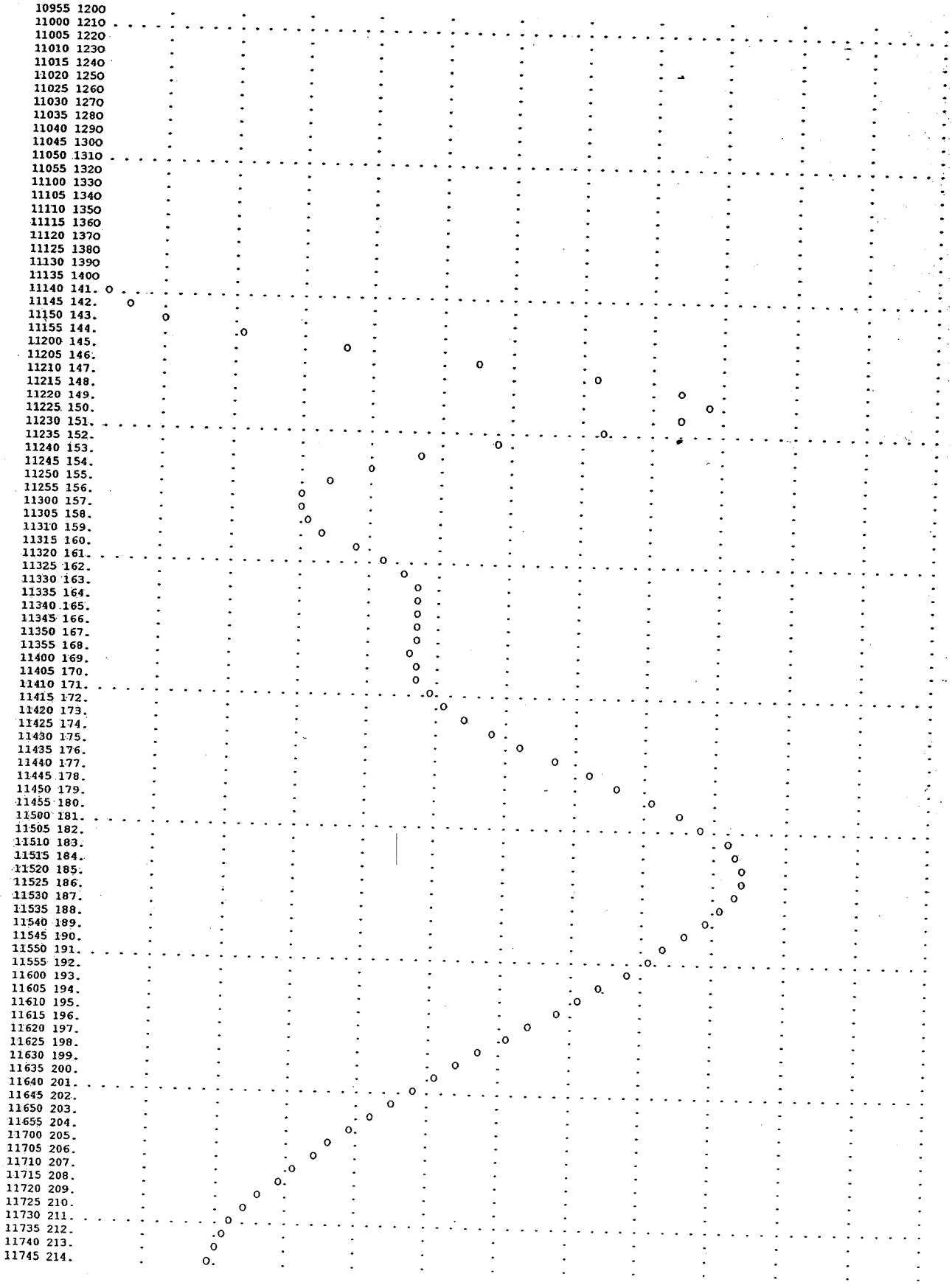
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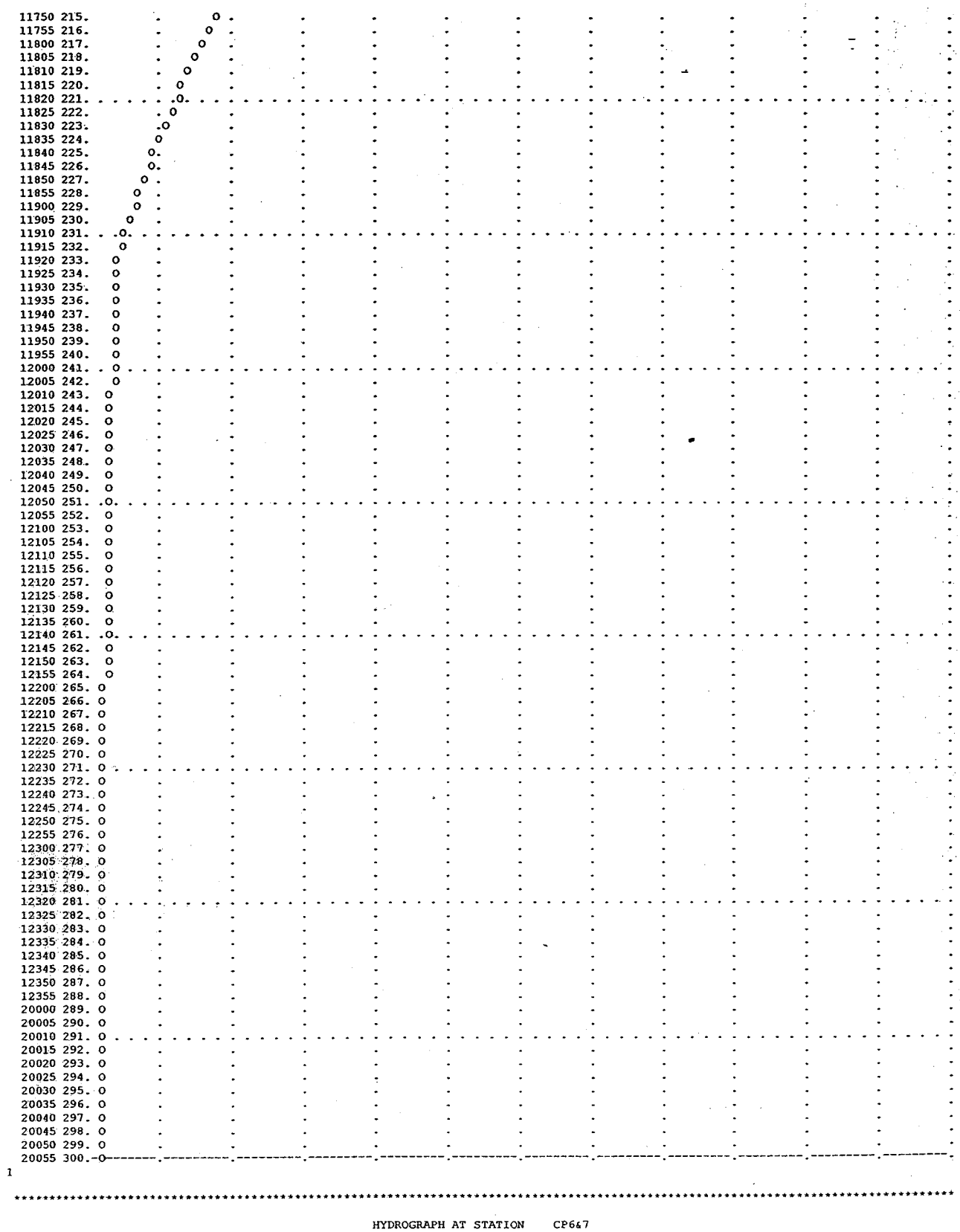

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HYDROGRAPH AT STATION CP6&7
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = 1.00

****

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		0615	76	0.	1		1230	151	2698.	1		1845	226	200.
1		0005	2	0.	1		0620	77	0.	1		1235	152	2286.	1		1850	227	189.
1		0010	3	0.	1		0625	78	0.	1		1240	153	2155.	1		1855	228	178.
1		0015	4	0.	1		0630	79	0.	1		1245	154	2187.	1		1900	229	168.
1		0020	5	0.	1		0635	80	0.	1		1250	155	2404.	1		1905	230	158.
1		0025	6	0.	1		0640	81	0.	1		1255	156	2717.	1		1910	231	148.
1		0030	7	0.	1		0645	82	0.	1		1300	157	2997.	1		1915	232	138.
1		0035	8	0.	1		0650	83	0.	1		1305	158	3095.	1		1920	233	129.
1		0040	9	0.	1		0655	84	0.	1		1310	159	3045.	1		1925	234	120.
1		0045	10	0.	1		0700	85	0.	1		1315	160	3021.	1		1930	235	111.
1		0050	11	0.	1		0705	86	0.	1		1320	161	3118.	1		1935	236	103.
1		0055	12	0.	1		0710	87	0.	1		1325	162	3227.	1		1940	237	94.
1		0100	13	0.	1		0715	88	0.	1		1330	163	3239.	1		1945	238	86.
1		0105	14	0.	1		0720	89	0.	1		1335	164	3165.	1		1950	239	79.
1		0110	15	0.	1		0725	90	0.	1		1340	165	3107.	1		1955	240	75.
1		0115	16	0.	1		0730	91	0.	1		1345	166	3091.	1		2000	241	73.
1		0120	17	0.	1		0735	92	0.	1		1350	167	3141.	1		2005	242	71.
1		0125	18	0.	1		0740	93	0.	1		1355	168	3229.	1		2010	243	70.
1		0130	19	0.	1		0745	94	0.	1		1400	169	3325.	1		2015	244	69.
1		0135	20	0.	1		0750	95	0.	1		1405	170	3417.	1		2020	245	67.
1		0140	21	0.	1		0755	96	0.	1		1410	171	3503.	1		2025	246	66.
1		0145	22	0.	1		0800	97	0.	1		1415	172	3579.	1		2030	247	64.
1		0150	23	0.	1		0805	98	0.	1		1420	173	3641.	1		2035	248	63.
1		0155	24	0.	1		0810	99	0.	1		1425	174	3683.	1		2040	249	61.
1		0200	25	0.	1		0815	100	0.	1		1430	175	3698.	1		2045	250	60.
1		0205	26	0.	1		0820	101	0.	1		1435	176	3687.	1		2050	251	58.
1		0210	27	0.	1		0825	102	0.	1		1440	177	3652.	1		2055	252	57.
1		0215	28	0.	1		0830	103	0.	1		1445	178	3595.	1		2100	253	55.
1		0220	29	0.	1		0835	104	0.	1		1450	179	3519.	1		2105	254	54.
1		0225	30	0.	1		0840	105	0.	1		1455	180	3427.	1		2110	255	52.
1		0230	31	0.	1		0845	106	0.	1		1500	181	3321.	1		2115	256	51.
1		0235	32	0.	1		0850	107	0.	1		1505	182	3201.	1		2120	257	50.
1		0240	33	0.	1		0855	108	0.	1		1510	183	3067.	1		2125	258	49.
1		0245	34	0.	1		0900	109	0.	1		1515	184	2922.	1		2130	259	48.
1		0250	35	0.	1		0905	110	0.	1		1520	185	2771.	1		2135	260	47.
1		0255	36	0.	1		0910	111	0.	1		1525	186	2616.	1		2140	261	46.
1		0300	37	0.	1		0915	112	0.	1		1530	187	2462.	1		2145	262	46.
1		0305	38	0.	1		0920	113	0.	1		1535	188	2309.	1		2150	263	45.
1		0310	39	0.	1		0925	114	0.	1		1540	189	2163.	1		2155	264	44.
1		0315	40	0.	1		0930	115	0.	1		1545	190	2027.	1		2200	265	43.
1		0320	41	0.	1		0935	116	0.	1		1550	191	1908.	1		2205	266	43.
1		0325	42	0.	1		0940	117	0.	1		1555	192	1790.	1		2210	267	42.
1		0330	43	0.	1		0945	118	0.	1		1600	193	1675.	1		2215	268	41.
1		0335	44	0.	1		0950	119	0.	1		1605	194	1564.	1		2220	269	41.
1		0340	45	0.	1		0955	120	0.	1		1610	195	1458.	1		2225	270	40.
1		0345	46	0.	1		1000	121	0.	1		1615	196	1357.	1		2230	271	40.
1		0350	47	0.	1		1005	122	0.	1		1620	197	1261.	1		2235	272	39.
1		0355	48	0.	1		1010	123	0.	1		1625	198	1171.	1		2240	273	39.
1		0400	49	0.	1		1015	124	0.	1		1630	199	1088.	1		2245	274	38.
1		0405	50	0.	1		1020	125	0.	1		1635	200	1012.	1		2250	275	37.
1		0410	51	0.	1		1025	126	0.	1		1640	201	950.	1		2255	276	37.
1		0415	52	0.	1		1030	127	0.	1		1645	202	896.	1		2300	277	36.
1		0420	53	0.	1		1035	128	0.	1		1650	203	844.	1		2305	278	36.
1		0425	54	0.	1		1040	129	0.	1		1655	204	794.	1		2310	279	35.
1		0430	55	0.	1		1045	130	0.	1		1700	205	745.	1		2315	280	35.
1		0435	56	0.	1		1050	131	0.	1		1705	206	699.	1		2320	281	34.
1		0440	57	0.	1		1055	132	0.	1		1710	207	654.	1		2325	282	34.
1		0445	58	0.	1		1100	133	0.	1		1715	208	611.	1		2330	283	33.
1		0450	59	0.	1		1105	134	0.	1		1720	209	570.	1		2335	284	33.
1		0455	60	0.	1		1110	135	0.	1		1725	210	531.	1		2340	285	32.
1		0500	61	0.	1		1115	136	0.	1		1730	211	494.	1		2345	286	32.
1		0505	62	0.	1		1120	137	0.	1		1735	212	459.	1		2350	287	31.
1		0510	63	0.	1		1125	138	0.	1		1740	213	426.	1		2355	288	31.
1		0515	64	0.	1		1130	139	1.	1		1745	214	394.	2		0000	289	30.
1		0520	65	0.	1		1135	140	53.	1		1750	215	365.	2		0005	290	30.
1		0525	66	0.	1		1140	141	197.	1		1755	216	338.	2		0010	291	30.
1		0530	67	0.	1		1145	142	463.	1		1800	217	314.	2		0015	292	29.
1		0535	68	0.	1		1150	143	877.	1		1805	218	293.	2		0020	293	29.
1		0540	69	0.	1		1155	144	1453.	1		1810	219	281.	2		0025	294	28.
1		0545	70	0.	1		1200	145	2197.	1		1815	220	269.	2		0030	295	28.
1		0550	71	0.	1		1205	146	2987.	1		1820	221	257.	2		0035	296	27.
1		0555	72	0.	1		1210	147	3529.	1		1825	222	245.	2		0040	297	27.
1		0600	73	0.	1		1215	148	3760.	1		1830	223	234.	2		0045	298	27.
1		0605	74	0.	1		1220	149	3630.	1		1835	224	222.	2		0050	299	26.
1		0610	75	0.	1		1225	150	3199.	1		1840	225	211.	2		0055	300	26.

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 3760.	12.25	(CFS)	2313.	607.	585.	585.
		(INCHES)	.570	.598	.598	.598
		(AC-FT)	1147.	1204.	1204.	1204.

CUMULATIVE AREA = 37.74 SQ MI

1 STATION CP6&7

(O) OUTFLOW

0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 3600. 4000. 0. 0.

DAHRMN	PER
10000	10
10005	20
10010	30
10015	40
10020	50
10025	60
10030	70
10035	80
10040	90
10045	100
10050	110
10055	120
10100	130
10105	140
10110	150
10115	160
10120	170
10125	180
10130	190
10135	200
10140	210
10145	220
10150	230
10155	240
10200	250
10205	260
10210	270
10215	280
10220	290
10225	300
10230	310
10235	320
10240	330
10245	340
10250	350
10255	360
10300	370
10305	380
10310	390
10315	400
10320	410
10325	420
10330	430
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10340	450
10345	460
10350	470
10355	480
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10455	600
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10510	630
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10535	680
10540	690
10545	700
10550	710
10555	720
10600	730
10605	740
10610	750
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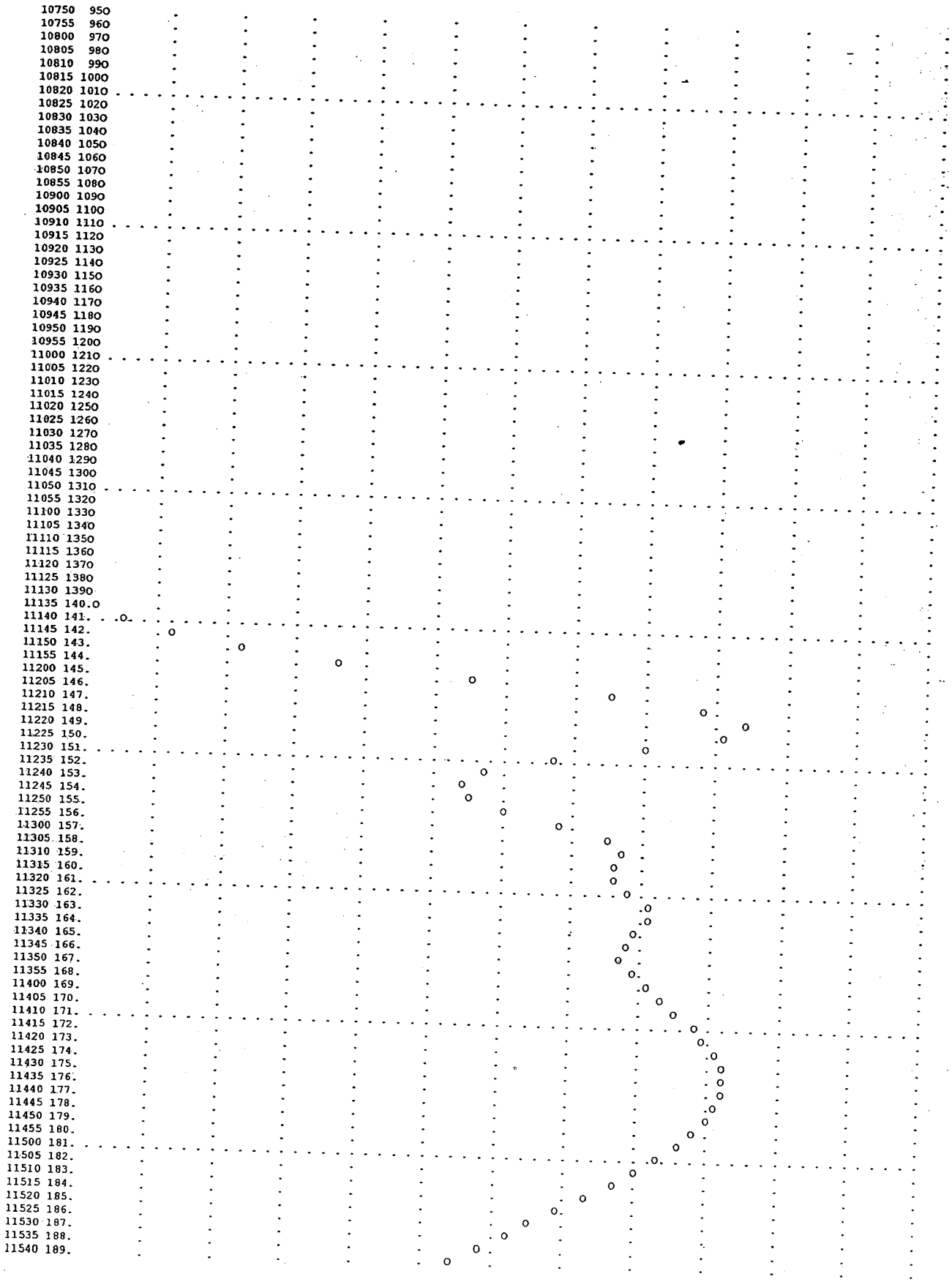
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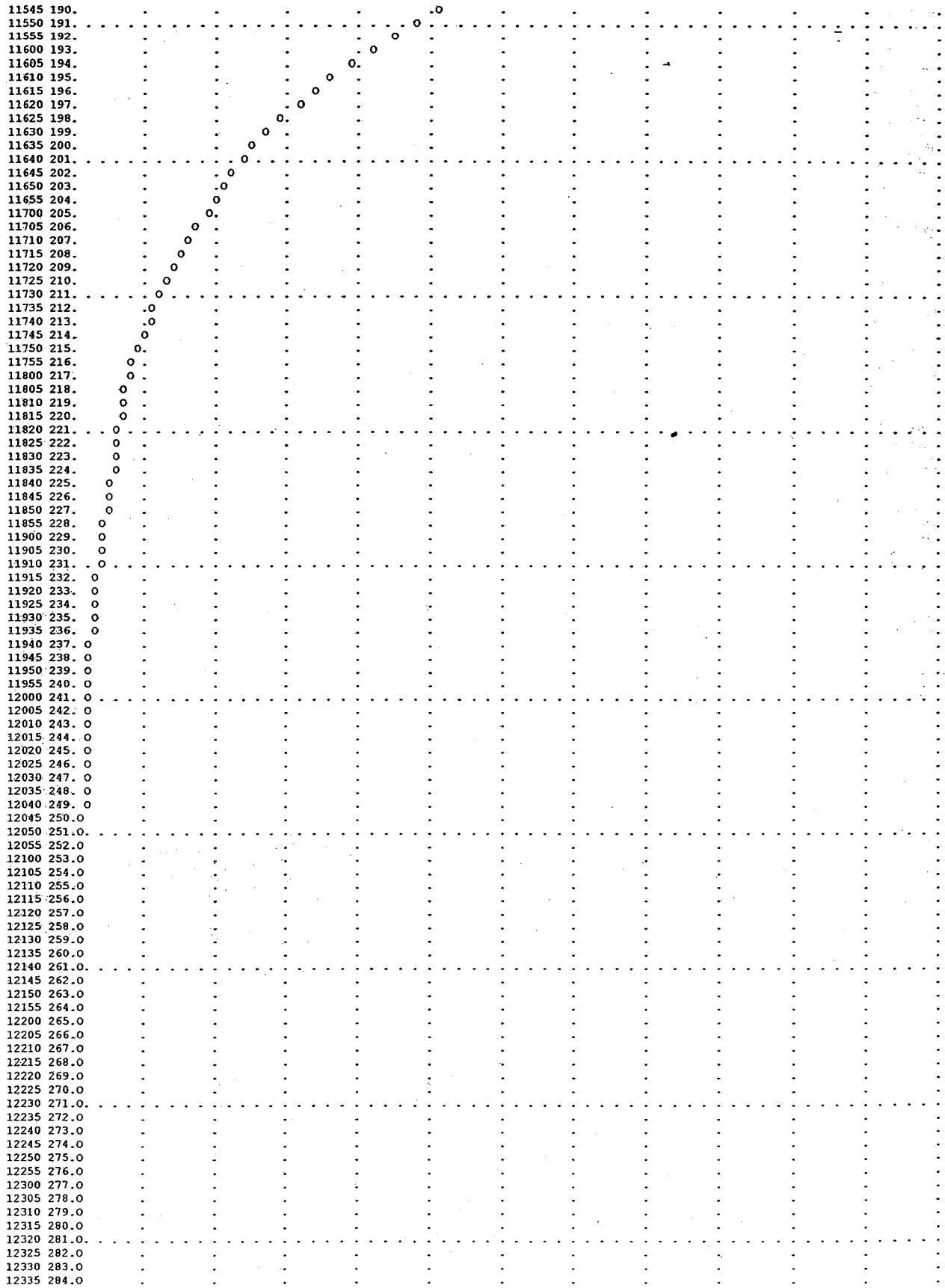
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20045 298.0
20050 299.0
20055 300.0
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533 KK      **************
            *            *
            *   RES6&7   *
            *            *
            **************

534 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          2  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                          ROUTE COMBINED HYDROGRAPHS FROM BASINS 6 & 7 NORTH OF SKI LAKE
                          COMBINED OUTFLOW FROM SPILLWAY #4, BERM OVERTOPPING, AND SPILL-TO'S

            HYDROGRAPH ROUTING DATA

511 RL          ROUTING LOSSES
                     QLOSS        .00  INITIAL LOSS
                     CLOSS        .00  ADDITIONAL FRACTION LOST

537 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       ELEV  TYPE OF INITIAL CONDITION
                    RSVRIC     744.30  INITIAL CONDITION
                         X        .00 WORKING R AND D COEFFICIENT

538 SV          STORAGE          .0      35.1     136.0

539 SE        ELEVATION       748.00    750.00    752.00

540 SQ        DISCHARGE          0.       80.      278.      560.     1003.     1521.     1901.     2638.     9142.    15793.

541 SE        ELEVATION       744.30    745.10    746.10    747.10    748.30    749.40    750.10    751.10    752.10    752.60
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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.00	.00	.00	.00	5.26	24.57	35.10	40.14	90.59
OUTFLOW	.00	80.00	278.00	560.00	892.26	1003.00	1521.00	1846.72	1901.00	2638.00
ELEVATION	744.30	745.10	746.10	747.10	748.00	748.30	749.40	750.00	750.10	751.10
STORAGE	136.00	141.04	166.27							
OUTFLOW	8491.76	9142.00	15793.00							
ELEVATION	752.00	752.10	752.60							

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HYDROGRAPH AT STATION RES6&7
PLAN 1, RATIO = .34

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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.	.3	745.1	*	1		0820	101	0.	.3	745.1	*	1		1640	201	0.	.3	745.1
1		0005	2	0.	.3	745.1	*	1		0825	102	0.	.3	745.1	*	1		1645	202	0.	.3	745.1
1		0010	3	0.	.3	745.1	*	1		0830	103	0.	.3	745.1	*	1		1650	203	0.	.3	745.1
1		0015	4	0.	.3	745.1	*	1		0835	104	0.	.3	745.1	*	1		1655	204	0.	.3	745.1
1		0020	5	0.	.3	745.1	*	1		0840	105	0.	.3	745.1	*	1		1700	205	0.	.3	745.1
1		0025	6	0.	.3	745.1	*	1		0845	106	0.	.3	745.1	*	1		1705	206	0.	.3	745.1
1		0030	7	0.	.3	745.1	*	1		0850	107	0.	.3	745.1	*	1		1710	207	0.	.3	745.1
1		0035	8	0.	.3	745.1	*	1		0855	108	0.	.3	745.1	*	1		1715	208	0.	.3	745.1
1		0040	9	0.	.3	745.1	*	1		0900	109	0.	.3	745.1	*	1		1720	209	0.	.3	745.1
1		0045	10	0.	.3	745.1	*	1		0905	110	0.	.3	745.1	*	1		1725	210	0.	.3	745.1
1		0050	11	0.	.3	745.1	*	1		0910	111	0.	.3	745.1	*	1		1730	211	0.	.3	745.1
1		0055	12	0.	.3	745.1	*	1		0915	112	0.	.3	745.1	*	1		1735	212	0.	.3	745.1
1		0100	13	0.	.3	745.1	*	1		0920	113	0.	.3	745.1	*	1		1740	213	0.	.3	745.1
1		0105	14	0.	.3	745.1	*	1		0925	114	0.	.3	745.1	*	1		1745	214	0.	.3	745.1
1		0110	15	0.	.3	745.1	*	1		0930	115	0.	.3	745.1	*	1		1750	215	0.	.3	745.1
1		0115	16	0.	.3	745.1	*	1		0935	116	0.	.3	745.1	*	1		1755	216	0.	.3	745.1

1	0120	17	0.	.3	745.1	*	1	0940	117	0.	.3	745.1	*	1	1800	217	0.	.3	745.1
1	0125	18	0.	.3	745.1	*	1	0945	118	0.	.3	745.1	*	1	1805	218	0.	.3	745.1
1	0130	19	0.	.3	745.1	*	1	0950	119	0.	.3	745.1	*	1	1810	219	0.	.3	745.1
1	0135	20	0.	.3	745.1	*	1	0955	120	0.	.3	745.1	*	1	1815	220	0.	.3	745.1
1	0140	21	0.	.3	745.1	*	1	1000	121	0.	.3	745.1	*	1	1820	221	0.	.3	745.1
1	0145	22	0.	.3	745.1	*	1	1005	122	0.	.3	745.1	*	1	1825	222	0.	.3	745.1
1	0150	23	0.	.3	745.1	*	1	1010	123	0.	.3	745.1	*	1	1830	223	0.	.3	745.1
1	0155	24	0.	.3	745.1	*	1	1015	124	0.	.3	745.1	*	1	1835	224	0.	.3	745.1
1	0200	25	0.	.3	745.1	*	1	1020	125	0.	.3	745.1	*	1	1840	225	0.	.3	745.1
1	0205	26	0.	.3	745.1	*	1	1025	126	0.	.3	745.1	*	1	1845	226	0.	.3	745.1
1	0210	27	0.	.3	745.1	*	1	1030	127	0.	.3	745.1	*	1	1850	227	0.	.3	745.1
1	0215	28	0.	.3	745.1	*	1	1035	128	0.	.3	745.1	*	1	1855	228	0.	.3	745.1
1	0220	29	0.	.3	745.1	*	1	1040	129	0.	.3	745.1	*	1	1900	229	0.	.3	745.1
1	0225	30	0.	.3	745.1	*	1	1045	130	0.	.3	745.1	*	1	1905	230	0.	.3	745.1
1	0230	31	0.	.3	745.1	*	1	1050	131	0.	.3	745.1	*	1	1910	231	0.	.3	745.1
1	0235	32	0.	.3	745.1	*	1	1055	132	0.	.3	745.1	*	1	1915	232	0.	.3	745.1
1	0240	33	0.	.3	745.1	*	1	1100	133	0.	.3	745.1	*	1	1920	233	0.	.3	745.1
1	0245	34	0.	.3	745.1	*	1	1105	134	0.	.3	745.1	*	1	1925	234	0.	.3	745.1
1	0250	35	0.	.3	745.1	*	1	1110	135	0.	.3	745.1	*	1	1930	235	0.	.3	745.1
1	0255	36	0.	.3	745.1	*	1	1115	136	0.	.3	745.1	*	1	1935	236	0.	.3	745.1
1	0300	37	0.	.3	745.1	*	1	1120	137	0.	.3	745.1	*	1	1940	237	0.	.3	745.1
1	0305	38	0.	.3	745.1	*	1	1125	138	0.	.3	745.1	*	1	1945	238	0.	.3	745.1
1	0310	39	0.	.3	745.1	*	1	1130	139	0.	.3	745.1	*	1	1950	239	0.	.3	745.1
1	0315	40	0.	.3	745.1	*	1	1135	140	0.	.3	745.1	*	1	1955	240	0.	.3	745.1
1	0320	41	0.	.3	745.1	*	1	1140	141	0.	.3	745.1	*	1	2000	241	0.	.3	745.1
1	0325	42	0.	.3	745.1	*	1	1145	142	0.	.3	745.1	*	1	2005	242	0.	.3	745.1
1	0330	43	0.	.3	745.1	*	1	1150	143	0.	.3	745.1	*	1	2010	243	0.	.3	745.1
1	0335	44	0.	.3	745.1	*	1	1155	144	0.	.3	745.1	*	1	2015	244	0.	.3	745.1
1	0340	45	0.	.3	745.1	*	1	1200	145	0.	.3	745.1	*	1	2020	245	0.	.3	745.1
1	0345	46	0.	.3	745.1	*	1	1205	146	0.	.3	745.1	*	1	2025	246	0.	.3	745.1
1	0350	47	0.	.3	745.1	*	1	1210	147	1.	.3	745.1	*	1	2030	247	0.	.3	745.1
1	0355	48	0.	.3	745.1	*	1	1215	148	1.	.3	745.1	*	1	2035	248	0.	.3	745.1
1	0400	49	0.	.3	745.1	*	1	1220	149	1.	.3	745.1	*	1	2040	249	0.	.3	745.1
1	0405	50	0.	.3	745.1	*	1	1225	150	1.	.3	745.1	*	1	2045	250	0.	.3	745.1
1	0410	51	0.	.3	745.1	*	1	1230	151	1.	.3	745.1	*	1	2050	251	0.	.3	745.1
1	0415	52	0.	.3	745.1	*	1	1235	152	1.	.3	745.1	*	1	2055	252	0.	.3	745.1
1	0420	53	0.	.3	745.1	*	1	1240	153	0.	.3	745.1	*	1	2100	253	0.	.3	745.1
1	0425	54	0.	.3	745.1	*	1	1245	154	0.	.3	745.1	*	1	2105	254	0.	.3	745.1
1	0430	55	0.	.3	745.1	*	1	1250	155	0.	.3	745.1	*	1	2110	255	0.	.3	745.1
1	0435	56	0.	.3	745.1	*	1	1255	156	0.	.3	745.1	*	1	2115	256	0.	.3	745.1
1	0440	57	0.	.3	745.1	*	1	1300	157	0.	.3	745.1	*	1	2120	257	0.	.3	745.1
1	0445	58	0.	.3	745.1	*	1	1305	158	0.	.3	745.1	*	1	2125	258	0.	.3	745.1
1	0450	59	0.	.3	745.1	*	1	1310	159	0.	.3	745.1	*	1	2130	259	0.	.3	745.1
1	0455	60	0.	.3	745.1	*	1	1315	160	0.	.3	745.1	*	1	2135	260	0.	.3	745.1
1	0500	61	0.	.3	745.1	*	1	1320	161	0.	.3	745.1	*	1	2140	261	0.	.3	745.1
1	0505	62	0.	.3	745.1	*	1	1325	162	0.	.3	745.1	*	1	2145	262	0.	.3	745.1
1	0510	63	0.	.3	745.1	*	1	1330	163	0.	.3	745.1	*	1	2150	263	0.	.3	745.1
1	0515	64	0.	.3	745.1	*	1	1335	164	0.	.3	745.1	*	1	2155	264	0.	.3	745.1
1	0520	65	0.	.3	745.1	*	1	1340	165	0.	.3	745.1	*	1	2200	265	0.	.3	745.1
1	0525	66	0.	.3	745.1	*	1	1345	166	0.	.3	745.1	*	1	2205	266	0.	.3	745.1
1	0530	67	0.	.3	745.1	*	1	1350	167	0.	.3	745.1	*	1	2210	267	0.	.3	745.1
1	0535	68	0.	.3	745.1	*	1	1355	168	0.	.3	745.1	*	1	2215	268	0.	.3	745.1
1	0540	69	0.	.3	745.1	*	1	1400	169	0.	.3	745.1	*	1	2220	269	0.	.3	745.1
1	0545	70	0.	.3	745.1	*	1	1405	170	0.	.3	745.1	*	1	2225	270	0.	.3	745.1
1	0550	71	0.	.3	745.1	*	1	1410	171	0.	.3	745.1	*	1	2230	271	0.	.3	745.1
1	0555	72	0.	.3	745.1	*	1	1415	172	0.	.3	745.1	*	1	2235	272	0.	.3	745.1
1	0600	73	0.	.3	745.1	*	1	1420	173	0.	.3	745.1	*	1	2240	273	0.	.3	745.1
1	0605	74	0.	.3	745.1	*	1	1425	174	0.	.3	745.1	*	1	2245	274	0.	.3	745.1
1	0610	75	0.	.3	745.1	*	1	1430	175	0.	.3	745.1	*	1	2250	275	0.	.3	745.1
1	0615	76	0.	.3	745.1	*	1	1435	176	0.	.3	745.1	*	1	2255	276	0.	.3	745.1
1	0620	77	0.	.3	745.1	*	1	1440	177	0.	.3	745.1	*	1	2300	277	0.	.3	745.1
1	0625	78	0.	.3	745.1	*	1	1445	178	0.	.3	745.1	*	1	2305	278	0.	.3	745.1
1	0630	79	0.	.3	745.1	*	1	1450	179	0.	.3	745.1	*	1	2310	279	0.	.3	745.1
1	0635	80	0.	.3	745.1	*	1	1455	180	0.	.3	745.1	*	1	2315	280	0.	.3	745.1
1	0640	81	0.	.3	745.1	*	1	1500	181	0.	.3	745.1	*	1	2320	281	0.	.3	745.1
1	0645	82	0.	.3	745.1	*	1	1505	182	0.	.3	745.1	*	1	2325	282	0.	.3	745.1
1	0650	83	0.	.3	745.1	*	1	1510	183	0.	.3	745.1	*	1	2330	283	0.	.3	745.1
1	0655	84	0.	.3	745.1	*	1	1515	184	0.	.3	745.1	*	1	2335	284	0.	.3	745.1
1	0700	85	0.	.3	745.1	*	1	1520	185	0.	.3	745.1	*	1	2340	285	0.	.3	745.1
1	0705	86	0.	.3	745.1	*	1	1525	186	0.	.3	745.1	*	1	2345	286	0.	.3	745.1
1	0710	87	0.	.3	745.1	*	1	1530	187	0.	.3	745.1	*	1	2350	287	0.	.3	745.1
1	0715	88	0.	.3	745.1	*	1	1535	188	0.	.3	745.1	*	1	2355	288	0.	.3	745.1
1	0720	89	0.	.3	745.1	*	1	1540	189	0.	.3	745.1	*	2	0000	289	0.	.3	745.1
1	0725	90	0.	.3	745.1	*	1	1545	190	0.	.3	745.1	*	2	0005	290	0.	.3	745.1
1	0730	91	0.	.3	745.1	*	1	1550	191	0.	.3	745.1	*	2	0010	291	0.	.3	745.1
1	0735	92	0.	.3	745.1	*	1	1555	192	0.	.3	745.1	*	2	0015	292	0.	.3	745.1
1	0740	93	0.	.3	745.1	*	1	1600	193	0.	.3	745.1	*	2	0020	293	0.	.3	745.1
1	0745	94	0.	.3	745.1	*	1	1605	194	0.	.3	745.1	*	2	0025	294	0.	.3	745.1
1	0750	95	0.	.3	745.1	*	1	1610	195	0.	.3	745.1	*	2	0030	295	0.	.3	745.1
1	0755	96	0.	.3	745.1	*	1	1615	196	0.	.3	745.1	*	2	0035	296	0.	.3	745.1
1	0800	97	0.	.3	745.1	*	1	1620	197	0.	.3	745.1	*	2	0040	297	0.	.3	745.1
1	0805	98	0.	.3	745.1	*	1	1625	198	0.	.3	745.1	*	2	0045	298	0.	.3	745.1
1	0810	99	0.	.3	745.1	*	1	1630	199	0.	.3	745.1	*	2	0050	299	0.	.3	745.1
1	0815	100	0.	.3	745.1	*	1	1635	200	0.	.3	745.1	*	2	0055	300	0.	.3	745.1
						*							*						

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	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	1.	12.33		0.	0.	0.	0.
			(INCHES)	.000	.000	.000	.000
			(AC-FT)	0.	0.	0.	0.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ 0.	.00	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ 745.11	12.33	745.10	745.10	745.10	745.10

CUMULATIVE AREA = 37.74 SQ MI

1

STATION RES6&7

(I) INFLOW, (O) OUTFLOW (S) STORAGE

	.0	.2	.4	.6	.8	1.0	1.2	1.4	1.6	.0	.0	.0	.0
	.00	.00	.00	.00	.00	.00	.28	.28	.28	.28	.00	.00	.00
DAHRMN	PER												
10000	1I												
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	27I							S					
10215	28I						S						
10220	29I							S					
10225	30I							S					
10230	31I							S					
10235	32I								S				
10240	33I								S				
10245	34I								S				
10250	35I								S				
10255	36I								S				
10300	37I									S			
10305	38I									S			
10310	39I									S			
10315	40I									S			
10320	41I									S			
10325	42I									S			
10330	43I									S			
10335	44I									S			
10340	45I									S			
10345	46I									S			
10350	47I									S			
10355	48I									S			
10400	49I									S			
10405	50I									S			
10410	51I									S			
10415	52I												
10420	53I										S		
10425	54I										S		
10430	55I										S		
10435	56I										S		
10440	57I										S		
10445	58I										S		
10450	59I										S		
10455	60I										S		
10500	61I										S		
10505	62I										S		
10510	63I										S		
10515	64I										S		
10520	65I										S		
10525	66I										S		
10530	67I										S		
10535	68I										S		
10540	69I										S		
10545	70I										S		
10550	71I										S		
10555	72I										S		
10600	73I										S		
10605	74I										S		
10610	75I										S		
10615	76I										S		

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10620  77I
10625  78I
10630  79I
10635  80I
10640  81I
10645  82I
10650  83I
10655  84I
10700  85I
10705  86I
10710  87I
10715  88I
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10750  95I
10755  96I
10800  97I
10805  98I
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12220 269I         .         .         .         .         .         .         .         .         S         .         .         .
12225 270I         .         .         .         .         .         .         .         .         S         .         .         .
12230 271I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . .
12235 272I         .         .         .         .         .         .         .         .         S         .         .         .
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12255 276I         .         .         .         .         .         .         .         .         S         .         .         .
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12305 278I         .         .         .         .         .         .         .         .         S         .         .         .
12310 279I         .         .         .         .         .         .         .         .         S         .         .         .
12315 280I         .         .         .         .         .         .         .         .         S         .         .         .
12320 281I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . .
12325 282I         .         .         .         .         .         .         .         .         S         .         .         .
12330 283I         .         .         .         .         .         .         .         .         S         .         .         .
12335 284I         .         .         .         .         .         .         .         .         S         .         .         .
12340 285I         .         .         .         .         .         .         .         .         S         .         .         .
12345 286I         .         .         .         .         .         .         .         .         S         .         .         .
12350 287I         .         .         .         .         .         .         .         .         S         .         .         .
12355 288I         .         .         .         .         .         .         .         .         S         .         .         .
20000 289I         .         .         .         .         .         .         .         .         S         .         .         .
20005 290I         .         .         .         .         .         .         .         .         S         .         .         .
20010 291I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . .
20015 292I         .         .         .         .         .         .         .         .         S         .         .         .
20020 293I         .         .         .         .         .         .         .         .         S         .         .         .
20025 294I         .         .         .         .         .         .         .         .         S         .         .         .
20030 295I         .         .         .         .         .         .         .         .         S         .         .         .
20035 296I         .         .         .         .         .         .         .         .         S         .         .         .
20040 297I         .         .         .         .         .         .         .         .         S         .         .         .
20045 298I         .         .         .         .         .         .         .         .         S         .         .         .
20050 299I         .         .         .         .         .         .         .         .         S         .         .         .
20055 300I---------.---------.---------.---------.---------.---------.---------.---------.---------S---------.---------.---------.
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HYDROGRAPH AT STATION RES6&7
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.	.3	745.1	*	1		0820	101	0.	.3	745.1	*	1		1640	201	221.	.3	746.2
1		0005	2	0.	.3	745.1	*	1		0825	102	0.	.3	745.1	*	1		1645	202	208.	.3	746.1
1		0010	3	0.	.3	745.1	*	1		0830	103	0.	.3	745.1	*	1		1650	203	194.	.3	746.1
1		0015	4	0.	.3	745.1	*	1		0835	104	0.	.3	745.1	*	1		1655	204	180.	.3	746.0
1		0020	5	0.	.3	745.1	*	1		0840	105	0.	.3	745.1	*	1		1700	205	166.	.3	745.9
1		0025	6	0.	.3	745.1	*	1		0845	106	0.	.3	745.1	*	1		1705	206	158.	.3	745.9
1		0030	7	0.	.3	745.1	*	1		0850	107	0.	.3	745.1	*	1		1710	207	151.	.3	745.9
1		0035	8	0.	.3	745.1	*	1		0855	108	0.	.3	745.1	*	1		1715	208	144.	.3	745.8
1		0040	9	0.	.3	745.1	*	1		0900	109	0.	.3	745.1	*	1		1720	209	136.	.3	745.8
1		0045	10	0.	.3	745.1	*	1		0905	110	0.	.3	745.1	*	1		1725	210	129.	.3	745.8
1		0050	11	0.	.3	745.1	*	1		0910	111	0.	.3	745.1	*	1		1730	211	121.	.3	745.7
1		0055	12	0.	.3	745.1	*	1		0915	112	0.	.3	745.1	*	1		1735	212	114.	.3	745.7
1		0100	13	0.	.3	745.1	*	1		0920	113	0.	.3	745.1	*	1		1740	213	106.	.3	745.6
1		0105	14	0.	.3	745.1	*	1		0925	114	0.	.3	745.1	*	1		1745	214	98.	.3	745.6
1		0110	15	0.	.3	745.1	*	1		0930	115	0.	.3	745.1	*	1		1750	215	91.	.3	745.6
1		0115	16	0.	.3	745.1	*	1		0935	116	0.	.3	745.1	*	1		1755	216	84.	.3	745.5
1		0120	17	0.	.3	745.1	*	1		0940	117	0.	.3	745.1	*	1		1800	217	77.	.3	745.5
1		0125	18	0.	.3	745.1	*	1		0945	118	0.	.3	745.1	*	1		1805	218	70.	.3	745.5
1		0130	19	0.	.3	745.1	*	1		0950	119	0.	.3	745.1	*	1		1810	219	63.	.3	745.4
1		0135	20	0.	.3	745.1	*	1		0955	120	0.	.3	745.1	*	1		1815	220	56.	.3	745.4
1		0140	21	0.	.3	745.1	*	1		1000	121	0.	.3	745.1	*	1		1820	221	49.	.3	745.3
1		0145	22	0.	.3	745.1	*	1		1005	122	0.	.3	745.1	*	1		1825	222	43.	.3	745.3
1		0150	23	0.	.3	745.1	*	1		1010	123	0.	.3	745.1	*	1		1830	223	37.	.3	745.3
1		0155	24	0.	.3	745.1	*	1		1015	124	0.	.3	745.1	*	1		1835	224	31.	.3	745.3
1		0200	25	0.	.3	745.1	*	1		1020	125	0.	.3	745.1	*	1		1840	225	25.	.3	745.2
1		0205	26	0.	.3	745.1	*	1		1025	126	0.	.3	745.1	*	1		1845	226	19.	.3	745.2
1		0210	27	0.	.3	745.1	*	1		1030	127	0.	.3	745.1	*	1		1850	227	13.	.3	745.2
1		0215	28	0.	.3	745.1	*	1		1035	128	0.	.3	745.1	*	1		1855	228	8.	.3	745.1
1		0220	29	0.	.3	745.1	*	1		1040	129	0.	.3	745.1	*	1		1900	229	5.	.3	745.1
1		0225	30	0.	.3	745.1	*	1		1045	130	0.	.3	745.1	*	1		1905	230	5.	.3	745.1
1		0230	31	0.	.3	745.1	*	1		1050	131	0.	.3	745.1	*	1		1910	231	5.	.3	745.1
1		0235	32	0.	.3	745.1	*	1		1055	132	0.	.3	745.1	*	1		1915	232	5.	.3	745.1
1		0240	33	0.	.3	745.1	*	1		1100	133	0.	.3	745.1	*	1		1920	233	5.	.3	745.1
1		0245	34	0.	.3	745.1	*	1		1105	134	0.	.3	745.1	*	1		1925	234	5.	.3	745.1
1		0250	35	0.	.3	745.1	*	1		1110	135	0.	.3	745.1	*	1		1930	235	5.	.3	745.1
1		0255	36	0.	.3	745.1	*	1		1115	136	0.	.3	745.1	*	1		1935	236	5.	.3	745.1
1		0300	37	0.	.3	745.1	*	1		1120	137	0.	.3	745.1	*	1		1940	237	4.	.3	745.1
1		0305	38	0.	.3	745.1	*	1		1125	138	0.	.3	745.1	*	1		1945	238	4.	.3	745.1
1		0310	39	0.	.3	745.1	*	1		1130	139	0.	.3	745.1	*	1		1950	239	4.	.3	745.1
1		0315	40	0.	.3	745.1	*	1		1135	140	0.	.3	745.1	*	1		1955	240	4.	.3	745.1
1		0320	41	0.	.3	745.1	*	1		1140	141	0.	.3	745.1	*	1		2000	241	4.	.3	745.1
1		0325	42	0.	.3	745.1	*	1		1145	142	3.	.3	745.1	*	1		2005	242	4.	.3	745.1
1		0330	43	0.	.3	745.1	*	1		1150	143	15.	.3	745.2	*	1		2010	243	4.	.3	745.1
1		0335	44	0.	.3	745.1	*	1		1155	144	41.	.3	745.3	*	1		2015	244	4.	.3	745.1
1		0340	45	0.	.3	745.1	*	1		1200	145	91.	.3	745.6	*	1		2020	245	4.	.3	745.1
1		0345	46	0.	.3	745.1	*	1		1205	146	146.	.3	745.8	*	1		2025	246	4.	.3	745.1
1		0350	47	0.	.3	745.1	*	1		1210	147	205.	.3	746.1	*	1		2030	247	4.	.3	745.1
1		0355	48	0.	.3	745.1	*	1		1215	148	261.	.3	746.3	*	1		2035	248	4.	.3	745.1
1		0400	49	0.	.3	745.1	*	1		1220	149	316.	.3	746.5	*	1		2040	249	4.	.3	745.1
1		0405	50	0.	.3	745.1	*	1		1225	150	331.	.3	746.6	*	1		2045	250	4.	.3	745.1

1	0410	51	0.	.3	745.1	*	1	1230	151	302.	.3	746.5	*	1	2050	251	4.	.3	745.1
1	0415	52	0.	.3	745.1	*	1	1235	152	233.	.3	746.2	*	1	2055	252	4.	.3	745.1
1	0420	53	0.	.3	745.1	*	1	1240	153	179.	.3	746.0	*	1	2100	253	4.	.3	745.1
1	0425	54	0.	.3	745.1	*	1	1245	154	130.	.3	745.8	*	1	2105	254	3.	.3	745.1
1	0430	55	0.	.3	745.1	*	1	1250	155	91.	.3	745.6	*	1	2110	255	3.	.3	745.1
1	0435	56	0.	.3	745.1	*	1	1255	156	60.	.3	745.4	*	1	2115	256	3.	.3	745.1
1	0440	57	0.	.3	745.1	*	1	1300	157	46.	.3	745.3	*	1	2120	257	3.	.3	745.1
1	0445	58	0.	.3	745.1	*	1	1305	158	44.	.3	745.3	*	1	2125	258	3.	.3	745.1
1	0450	59	0.	.3	745.1	*	1	1310	159	47.	.3	745.3	*	1	2130	259	3.	.3	745.1
1	0455	60	0.	.3	745.1	*	1	1315	160	52.	.3	745.4	*	1	2135	260	3.	.3	745.1
1	0500	61	0.	.3	745.1	*	1	1320	161	63.	.3	745.4	*	1	2140	261	3.	.3	745.1
1	0505	62	0.	.3	745.1	*	1	1325	162	69.	.3	745.5	*	1	2145	262	3.	.3	745.1
1	0510	63	0.	.3	745.1	*	1	1330	163	74.	.3	745.5	*	1	2150	263	3.	.3	745.1
1	0515	64	0.	.3	745.1	*	1	1335	164	77.	.3	745.5	*	1	2155	264	3.	.3	745.1
1	0520	65	0.	.3	745.1	*	1	1340	165	81.	.3	745.5	*	1	2200	265	3.	.3	745.1
1	0525	66	0.	.3	745.1	*	1	1345	166	84.	.3	745.5	*	1	2205	266	3.	.3	745.1
1	0530	67	0.	.3	745.1	*	1	1350	167	85.	.3	745.5	*	1	2210	267	3.	.3	745.1
1	0535	68	0.	.3	745.1	*	1	1355	168	85.	.3	745.5	*	1	2215	268	3.	.3	745.1
1	0540	69	0.	.3	745.1	*	1	1400	169	83.	.3	745.5	*	1	2220	269	3.	.3	745.1
1	0545	70	0.	.3	745.1	*	1	1405	170	81.	.3	745.5	*	1	2225	270	3.	.3	745.1
1	0550	71	0.	.3	745.1	*	1	1410	171	77.	.3	745.5	*	1	2230	271	3.	.3	745.1
1	0555	72	0.	.3	745.1	*	1	1415	172	74.	.3	745.5	*	1	2235	272	3.	.3	745.1
1	0600	73	0.	.3	745.1	*	1	1420	173	71.	.3	745.5	*	1	2240	273	3.	.3	745.1
1	0605	74	0.	.3	745.1	*	1	1425	174	69.	.3	745.4	*	1	2245	274	3.	.3	745.1
1	0610	75	0.	.3	745.1	*	1	1430	175	68.	.3	745.4	*	1	2250	275	3.	.3	745.1
1	0615	76	0.	.3	745.1	*	1	1435	176	68.	.3	745.4	*	1	2255	276	3.	.3	745.1
1	0620	77	0.	.3	745.1	*	1	1440	177	71.	.3	745.5	*	1	2300	277	3.	.3	745.1
1	0625	78	0.	.3	745.1	*	1	1445	178	75.	.3	745.5	*	1	2305	278	3.	.3	745.1
1	0630	79	0.	.3	745.1	*	1	1450	179	81.	.3	745.5	*	1	2310	279	2.	.3	745.1
1	0635	80	0.	.3	745.1	*	1	1455	180	90.	.3	745.6	*	1	2315	280	2.	.3	745.1
1	0640	81	0.	.3	745.1	*	1	1500	181	103.	.3	745.6	*	1	2320	281	2.	.3	745.1
1	0645	82	0.	.3	745.1	*	1	1505	182	118.	.3	745.7	*	1	2325	282	2.	.3	745.1
1	0650	83	0.	.3	745.1	*	1	1510	183	134.	.3	745.8	*	1	2330	283	2.	.3	745.1
1	0655	84	0.	.3	745.1	*	1	1515	184	151.	.3	745.9	*	1	2335	284	2.	.3	745.1
1	0700	85	0.	.3	745.1	*	1	1520	185	169.	.3	746.0	*	1	2340	285	2.	.3	745.1
1	0705	86	0.	.3	745.1	*	1	1525	186	199.	.3	746.1	*	1	2345	286	2.	.3	745.1
1	0710	87	0.	.3	745.1	*	1	1530	187	223.	.3	746.2	*	1	2350	287	2.	.3	745.1
1	0715	88	0.	.3	745.1	*	1	1535	188	243.	.3	746.3	*	1	2355	288	2.	.3	745.1
1	0720	89	0.	.3	745.1	*	1	1540	189	258.	.3	746.3	*	2	0000	289	2.	.3	745.1
1	0725	90	0.	.3	745.1	*	1	1545	190	269.	.3	746.4	*	2	0005	290	2.	.3	745.1
1	0730	91	0.	.3	745.1	*	1	1550	191	277.	.3	746.4	*	2	0010	291	2.	.3	745.1
1	0735	92	0.	.3	745.1	*	1	1555	192	282.	.3	746.4	*	2	0015	292	2.	.3	745.1
1	0740	93	0.	.3	745.1	*	1	1600	193	283.	.3	746.4	*	2	0020	293	2.	.3	745.1
1	0745	94	0.	.3	745.1	*	1	1605	194	282.	.3	746.4	*	2	0025	294	2.	.3	745.1
1	0750	95	0.	.3	745.1	*	1	1610	195	278.	.3	746.4	*	2	0030	295	2.	.3	745.1
1	0755	96	0.	.3	745.1	*	1	1615	196	273.	.3	746.4	*	2	0035	296	2.	.3	745.1
1	0800	97	0.	.3	745.1	*	1	1620	197	265.	.3	746.3	*	2	0040	297	2.	.3	745.1
1	0805	98	0.	.3	745.1	*	1	1625	198	256.	.3	746.3	*	2	0045	298	2.	.3	745.1
1	0810	99	0.	.3	745.1	*	1	1630	199	246.	.3	746.3	*	2	0050	299	2.	.3	745.1
1	0815	100	0.	.3	745.1	*	1	1635	200	234.	.3	746.2	*	2	0055	300	2.	.3	745.1

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PEAK FLOW (CFS)	TIME (HR)
+ 331.	12.42

MAXIMUM AVERAGE FLOW

	6-HR	24-HR	72-HR	24.92-HR
(CFS)	151.	41.	39.	39.
(INCHES)	.037	.040	.040	.040
(AC-FT)	75.	80.	80.	80.

PEAK STORAGE (AC-FT)	TIME (HR)
+ 0.	.00

MAXIMUM AVERAGE STORAGE

6-HR	24-HR	72-HR	24.92-HR
0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)
+ 746.57	12.42

MAXIMUM AVERAGE STAGE

6-HR	24-HR	72-HR	24.92-HR
745.83	745.30	745.29	745.29

CUMULATIVE AREA = 37.74 SQ MI

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STATION RES6&7

(I) INFLOW, (O) OUTFLOW

		0.	40.	80.	120.	160.	200.	240.	280.	320.	360.	0.	0.	0.
		.00	.00	.00	.00	.00	.00	.28	.28	.28	.28	.28	.00	.00
DAHRMN	PER									(S) STORAGE				
10000	1I													
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  27I         .         .         .         .         .         .         .       S .         .         .         .         .
10215  28I         .         .         .         .         .         .         .       S .         .         .         .         .
10220  29I         .         .         .         .         .         .         .       S .         .         .         .         .
10225  30I         .         .         .         .         .         .         .       S .         .         .         .         .
10230  31I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . .
10235  32I         .         .         .         .         .         .         .       S .         .         .         .         .
10240  33I         .         .         .         .         .         .         .         .S        .         .         .         .
10245  34I         .         .         .         .         .         .         .         .S        .         .         .         .
10250  35I         .         .         .         .         .         .         .         .S        .         .         .         .
10255  36I         .         .         .         .         .         .         .         .S        .         .         .         .
10300  37I         .         .         .         .         .         .         .         .S        .         .         .         .
10305  38I         .         .         .         .         .         .         .         .S        .         .         .         .
10310  39I         .         .         .         .         .         .         .         .S        .         .         .         .
10315  40I         .         .         .         .         .         .         .         .S        .         .         .         .
10320  41I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . .
10325  42I         .         .         .         .         .         .         .         .S        .         .         .         .
10330  43I         .         .         .         .         .         .         .         .S        .         .         .         .
10335  44I         .         .         .         .         .         .         .         .S        .         .         .         .
10340  45I         .         .         .         .         .         .         .         .S        .         .         .         .
10345  46I         .         .         .         .         .         .         .         .S        .         .         .         .
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10400  49I         .         .         .         .         .         .         .         .   S     .         .         .         .
10405  50I         .         .         .         .         .         .         .         .   S     .         .         .         .
10410  51I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
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10420  53I         .         .         .         .         .         .         .         .   S     .         .         .         .
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10430  55I         .         .         .         .         .         .         .         .   S     .         .         .         .
10435  56I         .         .         .         .         .         .         .         .   S     .         .         .         .
10440  57I         .         .         .         .         .         .         .         .   S     .         .         .         .
10445  58I         .         .         .         .         .         .         .         .   S     .         .         .         .
10450  59I         .         .         .         .         .         .         .         .   S     .         .         .         .
10455  60I         .         .         .         .         .         .         .         .   S     .         .         .         .
10500  61I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
10505  62I         .         .         .         .         .         .         .         .   S     .         .         .         .
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10515  64I         .         .         .         .         .         .         .         .   S     .         .         .         .
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10545  70I         .         .         .         .         .         .         .         .   S     .         .         .         .
10550  71I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
10555  72I         .         .         .         .         .         .         .         .   S     .         .         .         .
10600  73I         .         .         .         .         .         .         .         .   S     .         .         .         .
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10640  81I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
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10810  99I         .         .         .         .         .         .         .         .   S     .         .         .         .
10815 100I         .         .         .         .         .         .         .         .   S     .         .         .         .
10820 101I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . .
10825 102I         .         .         .         .         .         .         .         .   S     .         .         .         .
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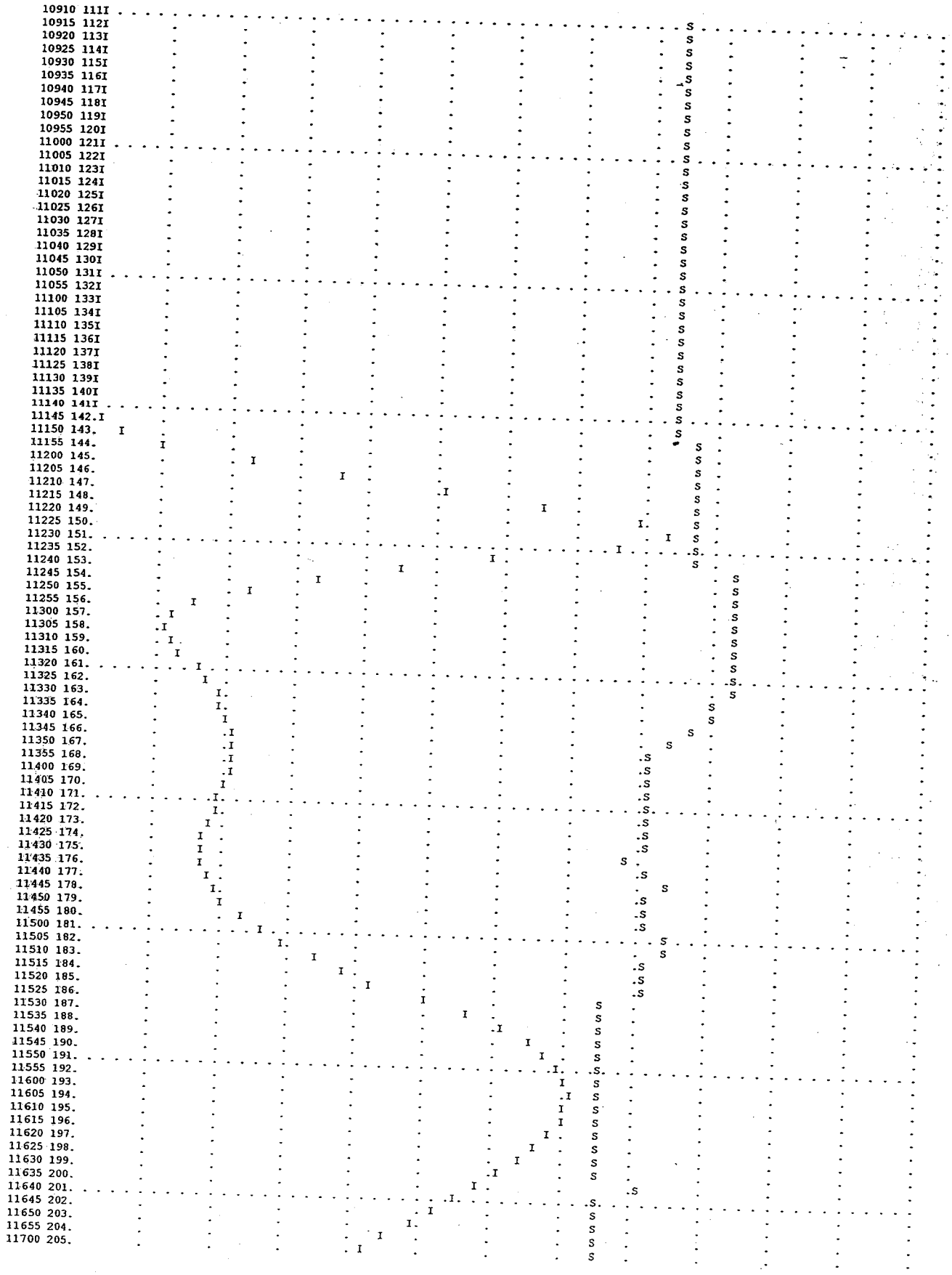
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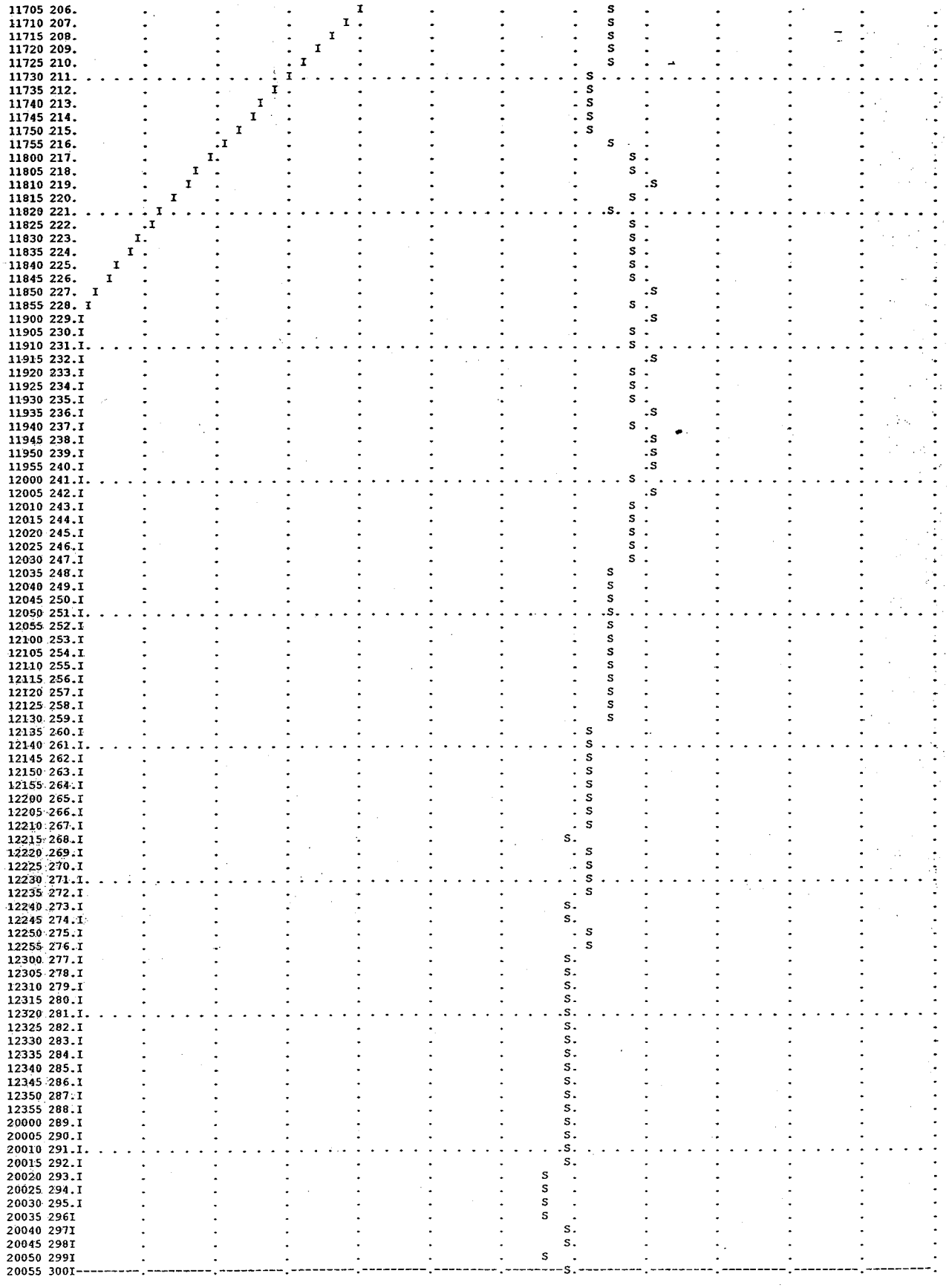

HYDROGRAPH AT STATION RES6&7
PLAN 1, RATIO = .61

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.	.3	745.1	1		0820	101	0.	.3	745.1	1		1640	201	477.	.0	746.8
1		0005	2	0.	.3	745.1	1		0825	102	0.	.3	745.1	1		1645	202	447.	.0	746.7
1		0010	3	0.	.3	745.1	1		0830	103	0.	.3	745.1	1		1650	203	418.	.0	746.6
1		0015	4	0.	.3	745.1	1		0835	104	0.	.3	745.1	1		1655	204	389.	.0	746.5
1		0020	5	0.	.3	745.1	1		0840	105	0.	.3	745.1	1		1700	205	362.	.0	746.4
1		0025	6	0.	.3	745.1	1		0845	106	0.	.3	745.1	1		1705	206	337.	.0	746.3
1		0030	7	0.	.3	745.1	1		0850	107	0.	.3	745.1	1		1710	207	312.	.0	746.2
1		0035	8	0.	.3	745.1	1		0855	108	0.	.3	745.1	1		1715	208	288.	.0	746.1
1		0040	9	0.	.3	745.1	1		0900	109	0.	.3	745.1	1		1720	209	265.	.0	746.1
1		0045	10	0.	.3	745.1	1		0905	110	0.	.3	745.1	1		1725	210	244.	.0	745.9
1		0050	11	0.	.3	745.1	1		0910	111	0.	.3	745.1	1		1730	211	225.	.0	745.8
1		0055	12	0.	.3	745.1	1		0915	112	0.	.3	745.1	1		1735	212	212.	.0	745.8
1		0100	13	0.	.3	745.1	1		0920	113	0.	.3	745.1	1		1740	213	202.	.0	745.7
1		0105	14	0.	.3	745.1	1		0925	114	0.	.3	745.1	1		1745	214	192.	.0	745.7
1		0110	15	0.	.3	745.1	1		0930	115	0.	.3	745.1	1		1750	215	182.	.0	745.6
1		0115	16	0.	.3	745.1	1		0935	116	0.	.3	745.1	1		1755	216	172.	.0	745.6
1		0120	17	0.	.3	745.1	1		0940	117	0.	.3	745.1	1		1800	217	162.	.0	745.5
1		0125	18	0.	.3	745.1	1		0945	118	0.	.3	745.1	1		1805	218	153.	.0	745.5
1		0130	19	0.	.3	745.1	1		0950	119	0.	.3	745.1	1		1810	219	144.	.0	745.4
1		0135	20	0.	.3	745.1	1		0955	120	0.	.3	745.1	1		1815	220	135.	.0	745.4
1		0140	21	0.	.3	745.1	1		1000	121	0.	.3	745.1	1		1820	221	126.	.0	745.4
1		0145	22	0.	.3	745.1	1		1005	122	0.	.3	745.1	1		1825	222	118.	.0	745.3
1		0150	23	0.	.3	745.1	1		1010	123	0.	.3	745.1	1		1830	223	110.	.0	745.3
1		0155	24	0.	.3	745.1	1		1015	124	0.	.3	745.1	1		1835	224	102.	.0	745.2
1		0200	25	0.	.3	745.1	1		1020	125	0.	.3	745.1	1		1840	225	94.	.0	745.2
1		0205	26	0.	.3	745.1	1		1025	126	0.	.3	745.1	1		1845	226	86.	.0	745.2
1		0210	27	0.	.3	745.1	1		1030	127	0.	.3	745.1	1		1850	227	79.	.0	745.1
1		0215	28	0.	.3	745.1	1		1035	128	0.	.3	745.1	1		1855	228	72.	.0	745.1
1		0220	29	0.	.3	745.1	1		1040	129	0.	.3	745.1	1		1900	229	65.	.0	745.0
1		0225	30	0.	.3	745.1	1		1045	130	0.	.3	745.1	1		1905	230	58.	.0	744.9
1		0230	31	0.	.3	745.1	1		1050	131	0.	.3	745.1	1		1910	231	52.	.0	744.9
1		0235	32	0.	.3	745.1	1		1055	132	0.	.3	745.1	1		1915	232	45.	.0	744.8
1		0240	33	0.	.3	745.1	1		1100	133	0.	.3	745.1	1		1920	233	40.	.0	744.7
1		0245	34	0.	.3	745.1	1		1105	134	0.	.3	745.1	1		1925	234	40.	.0	744.7
1		0250	35	0.	.3	745.1	1		1110	135	0.	.3	745.1	1		1930	235	39.	.0	744.7
1		0255	36	0.	.3	745.1	1		1115	136	0.	.3	745.1	1		1935	236	38.	.0	744.7
1		0300	37	0.	.3	745.1	1		1120	137	0.	.3	745.1	1		1940	237	38.	.0	744.7
1		0305	38	0.	.3	745.1	1		1125	138	0.	.3	745.1	1		1945	238	37.	.0	744.7
1		0310	39	0.	.3	745.1	1		1130	139	0.	.3	745.1	1		1950	239	37.	.0	744.7
1		0315	40	0.	.3	745.1	1		1135	140	5.	.3	745.1	1		1955	240	36.	.0	744.7
1		0320	41	0.	.3	745.1	1		1140	141	18.	.3	745.2	1		2000	241	36.	.0	744.7
1		0325	42	0.	.3	745.1	1		1145	142	47.	.3	745.3	1		2005	242	35.	.0	744.7
1		0330	43	0.	.3	745.1	1		1150	143	104.	.3	745.6	1		2010	243	35.	.0	744.7
1		0335	44	0.	.3	745.1	1		1155	144	205.	.3	746.1	1		2015	244	34.	.0	744.7
1		0340	45	0.	.3	745.1	1		1200	145	363.	.3	746.7	1		2020	245	34.	.0	744.7
1		0345	46	0.	.3	745.1	1		1205	146	551.	.3	747.3	1		2025	246	33.	.0	744.7
1		0350	47	0.	.3	745.1	1		1210	147	724.	.3	747.8	1		2030	247	33.	.0	744.7
1		0355	48	0.	.3	745.1	1		1215	148	894.	.1	748.0	1		2035	248	32.	.0	744.7
1		0400	49	0.	.3	745.1	1		1220	149	882.	-.1	747.9	1		2040	249	32.	.0	744.7
1		0405	50	0.	.3	745.1	1		1225	150	842.	-.1	747.8	1		2045	250	31.	.0	744.6
1		0410	51	0.	.3	745.1	1		1230	151	735.	-.1	747.5	1		2050	251	31.	.0	744.6
1		0415	52	0.	.3	745.1	1		1235	152	580.	-.1	747.1	1		2055	252	30.	.0	744.6
1		0420	53	0.	.3	745.1	1		1240	153	474.	-.1	746.7	1		2100	253	30.	.0	744.6
1		0425	54	0.	.3	745.1	1		1245	154	396.	-.1	746.4	1		2105	254	29.	.0	744.6
1		0430	55	0.	.3	745.1	1		1250	155	340.	-.1	746.2	1		2110	255	29.	.0	744.6
1		0435	56	0.	.3	745.1	1		1255	156	303.	-.1	746.1	1		2115	256	28.	.0	744.6
1		0440	57	0.	.3	745.1	1		1300	157	300.	-.1	746.0	1		2120	257	28.	.0	744.6
1		0445	58	0.	.3	745.1	1		1305	158	310.	-.1	746.1	1		2125	258	28.	.0	744.6
1		0450	59	0.	.3	745.1	1		1310	159	333.	-.1	746.2	1		2130	259	27.	.0	744.6
1		0455	60	0.	.3	745.1	1		1315	160	378.	-.1	746.3	1		2135	260	27.	.0	744.6
1		0500	61	0.	.3	745.1	1		1320	161	424.	-.1	746.5	1		2140	261	26.	.0	744.6
1		0505	62	0.	.3	745.1	1		1325	162	452.	-.1	746.6	1		2145	262	26.	.0	744.6
1		0510	63	0.	.3	745.1	1		1330	163	468.	-.1	746.7	1		2150	263	26.	.0	744.6
1		0515	64	0.	.3	745.1	1		1335	164	473.	-.1	746.7	1		2155	264	25.	.0	744.6
1		0520	65	0.	.3	745.1	1		1340	165	475.	-.1	746.7	1		2200	265	25.	.0	744.6
1		0525	66	0.	.3	745.1	1		1345	166	472.	-.1	746.7	1		2205	266	24.	.0	744.6
1		0530	67	0.	.3	745.1	1		1350	167	467.	-.1	746.7	1		2210	267	24.	.0	744.6
1		0535	68	0.	.3	745.1	1		1355	168	464.	-.1	746.6	1		2215	268	24.	.0	744.6
1		0540	69	0.	.3	745.1	1		1400	169	466.	-.1	746.6	1		2220	269	23.	.0	744.6
1		0545	70	0.	.3	745.1	1		1405	170	473.	-.1	746.7	1		2225	270	23.	.0	744.6
1		0550	71	0.	.3	745.1	1		1410	171	489.	-.1	746.7	1		2230	271	23.	.0	744.6
1		0555	72	0.	.3	745.1	1		1415	172	513.	-.1	746.8	1		2235	272	22.	.0	744.6
1		0600	73	0.	.3	745.1	1		1420	173	545.	-.1	746.9	1		2240	273	22.	.0	744.6
1		0605	74	0.	.3	745.1	1		1425	174	583.	-.1	747.1	1		2245	274	22.	.0	744.6
1		0610	75	0.	.3	745.1	1		1430	175	625.	-.1	747.2	1		2250	275	22.	.0	744.6
1		0615	76	0.	.3	745.1	1		1435	176	670.	-.1	747.3	1		2255	276	21.	.0	744.5
1		0620	77	0.	.3	745.1	1		1440	177	717.	-.1	747.4	1		2300	277	21.	.0	744.5
1		0625	78	0.	.3	745.1	1		1445	178	765.	-.1	747.6	1		2305	278	21.	.0	744.5
1		0630	79	0.	.3	745.1	1		1450	179	809.	-.1	747.7	1		2310	279	21.	.0	744.5
1		0635	80	0.	.3	745.1	1		1455	180	848.	-.1	747.8	1		2315	280	20.	.0	744.5
1		0640	81	0.	.3	745.1	1		1500	181	883.	-.1	747.9	1		2320	281	20.	.0	744.5
1		0645	82	0.	.3	745.1	1		1505	182	915.	-.1	748.0	1		2325	282	20.	.0	744.5
1		0650	83	0.	.3	745.1	1		1510	183	893.	.0	748.0	1		2330	283	20.	.0	744.5
1		0655	84	0.	.3	745.1	1		1515	184	899.	.3	748.0	1		2335	284	20.	.0	744.5

1	0700	85	0.	.3	745.1	*	1	1520	185	905.	.6	748.0	*	1	2340	285	20.	.0	744.5
1	0705	86	0.	.3	745.1	*	1	1525	186	909.	.8	748.0	*	1	2345	286	19.	.0	744.5
1	0710	87	0.	.3	745.1	*	1	1530	187	911.	.9	748.1	*	1	2350	287	19.	.0	744.5
1	0715	88	0.	.3	745.1	*	1	1535	188	910.	.8	748.0	*	1	2355	288	19.	.0	744.5
1	0720	89	0.	.3	745.1	*	1	1540	189	905.	.6	748.0	*	2	0000	289	19.	.0	744.5
1	0725	90	0.	.3	745.1	*	1	1545	190	897.	.2	748.0	*	2	0005	290	19.	.0	744.5
1	0730	91	0.	.3	745.1	*	1	1550	191	805.	.0	747.8	*	2	0010	291	19.	.0	744.5
1	0735	92	0.	.3	745.1	*	1	1555	192	776.	.0	747.7	*	2	0015	292	18.	.0	744.5
1	0740	93	0.	.3	745.1	*	1	1600	193	744.	.0	747.6	*	2	0020	293	18.	.0	744.5
1	0745	94	0.	.3	745.1	*	1	1605	194	710.	.0	747.5	*	2	0025	294	18.	.0	744.5
1	0750	95	0.	.3	745.1	*	1	1610	195	676.	.0	747.4	*	2	0030	295	18.	.0	744.5
1	0755	96	0.	.3	745.1	*	1	1615	196	641.	.0	747.3	*	2	0035	296	18.	.0	744.5
1	0800	97	0.	.3	745.1	*	1	1620	197	606.	.0	747.2	*	2	0040	297	17.	.0	744.5
1	0805	98	0.	.3	745.1	*	1	1625	198	572.	.0	747.1	*	2	0045	298	17.	.0	744.5
1	0810	99	0.	.3	745.1	*	1	1630	199	539.	.0	747.0	*	2	0050	299	17.	.0	744.5
1	0815	100	0.	.3	745.1	*	1	1635	200	507.	.0	746.9	*	2	0055	300	17.	.0	744.5
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 915.	15.08		555.	152.	146.	146.
		(INCHES)	.137	.149	.149	.149
		(AC-FT)	275.	301.	301.	301.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	15.50	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
748.05	15.50	746.96	745.48	745.44	745.44

CUMULATIVE AREA = 37.74 SQ MI

1 STATION RES6&7

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                    (I) INFLOW,   (O) OUTFLOW
        0.     200.     400.     600.     800.    1000.       0.       0.       0.       0.       0.       0.       0.
                                                                                  (S) STORAGE
        .0       .0       .0       .0       .0       .0     -.4       .0       .4       .8     1.2       .0       .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  .         .         .         .         .
 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 27I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10215 28I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10220 29I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10225 30I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10230 31I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . .
 10235 32I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10240 33I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10245 34I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10250 35I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10255 36I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10300 37I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10305 38I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10310 39I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10315 40I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10320 41I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . .
 10325 42I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10330 43I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10335 44I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10340 45I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10345 46I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10350 47I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10355 48I         .         .         .         .         .         .         .      S  .         .         .         .         .
 10400 49I         .         .         .         .         .         .         .      S  .         .         .         .         .
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10405  50I
10410  51I
10415  52I
10420  53I
10425  54I
10430  55I
10435  56I
10440  57I
10445  58I
10450  59I
10455  60I
10500  61I
10505  62I
10510  63I
10515  64I
10520  65I
10525  66I
10530  67I
10535  68I
10540  69I
10545  70I
10550  71I
10555  72I
10600  73I
10605  74I
10610  75I
10615  76I
10620  77I
10625  78I
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10645  82I
10650  83I
10655  84I
10700  85I
10705  86I
10710  87I
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10745  94I
10750  95I
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10800  97I
10805  98I
10810  99I
10815 100I
10820 101I
10825 102I
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10920 113I
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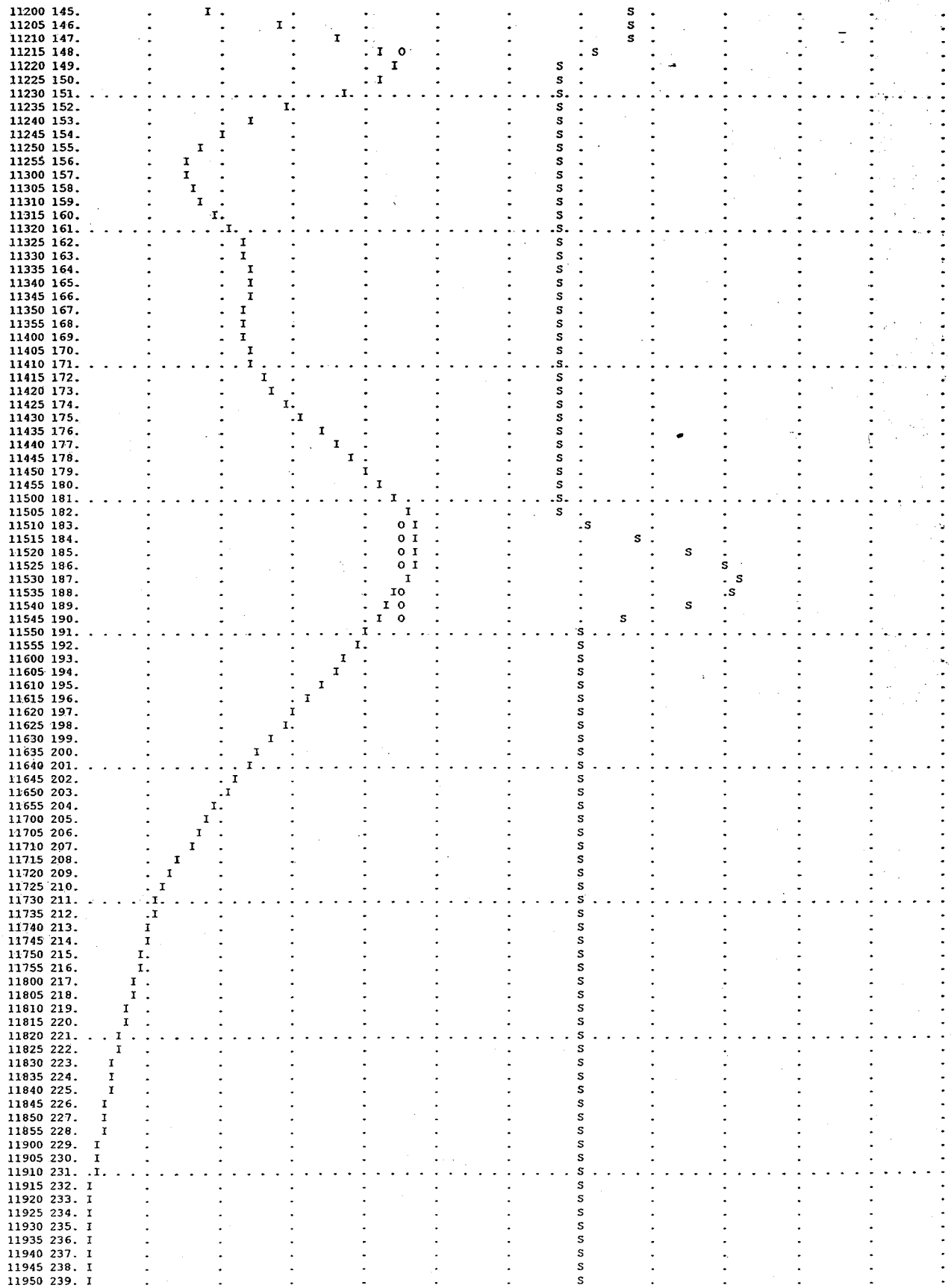

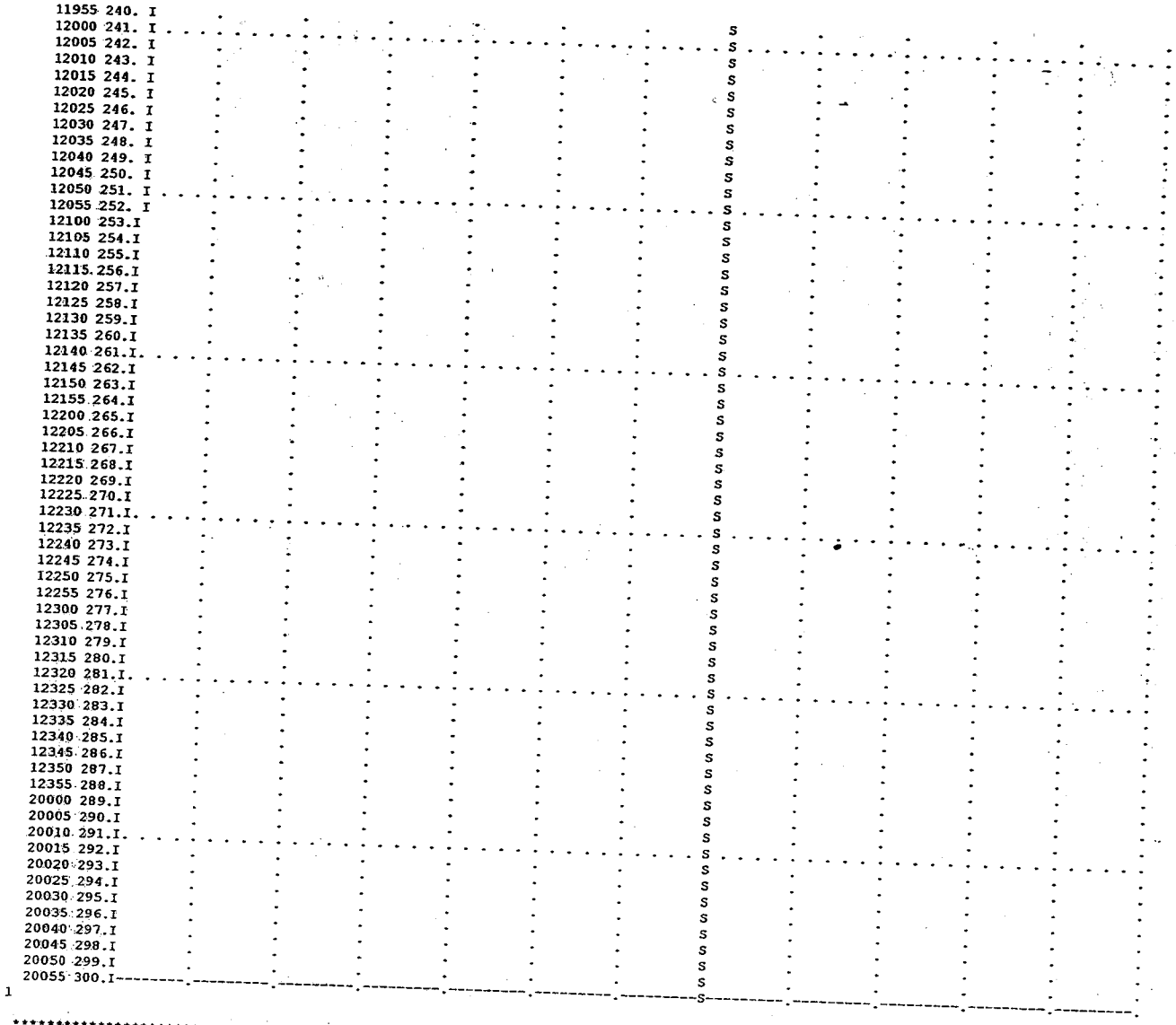

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HYDROGRAPH AT STATION RES6&7
PLAN 1, RATIO = 1.00

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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.	.3	745.1	*	1		0820	101	0.	.3	745.1	*	1		1640	201	1651.	28.8	749.6
1		0005	2	0.	.3	745.1	*	1		0825	102	0.	.3	745.1	*	1		1645	202	1512.	24.2	749.4
1		0010	3	0.	.3	745.1	*	1		0830	103	0.	.3	745.1	*	1		1650	203	1404.	20.2	749.2
1		0015	4	0.	.3	745.1	*	1		0835	104	0.	.3	745.1	*	1		1655	204	1305.	16.5	748.9
1		0020	5	0.	.3	745.1	*	1		0840	105	0.	.3	745.1	*	1		1700	205	1214.	13.1	748.7
1		0025	6	0.	.3	745.1	*	1		0845	106	0.	.3	745.1	*	1		1705	206	1131.	10.0	748.6
1		0030	7	0.	.3	745.1	*	1		0850	107	0.	.3	745.1	*	1		1710	207	1054.	7.2	748.4
1		0035	8	0.	.3	745.1	*	1		0855	108	0.	.3	745.1	*	1		1715	208	987.	4.5	748.3
1		0040	9	0.	.3	745.1	*	1		0900	109	0.	.3	745.1	*	1		1720	209	933.	1.9	748.1
1		0045	10	0.	.3	745.1	*	1		0905	110	0.	.3	745.1	*	1		1725	210	531.	.7	747.6
1		0050	11	0.	.3	745.1	*	1		0910	111	0.	.3	745.1	*	1		1730	211	494.	.7	747.5
1		0055	12	0.	.3	745.1	*	1		0915	112	0.	.3	745.1	*	1		1735	212	459.	.7	747.4
1		0100	13	0.	.3	745.1	*	1		0920	113	0.	.3	745.1	*	1		1740	213	426.	.7	747.3
1		0105	14	0.	.3	745.1	*	1		0925	114	0.	.3	745.1	*	1		1745	214	394.	.7	747.2
1		0110	15	0.	.3	745.1	*	1		0930	115	0.	.3	745.1	*	1		1750	215	365.	.7	747.1
1		0115	16	0.	.3	745.1	*	1		0935	116	0.	.3	745.1	*	1		1755	216	338.	.7	747.0
1		0120	17	0.	.3	745.1	*	1		0940	117	0.	.3	745.1	*	1		1800	217	314.	.7	746.9
1		0125	18	0.	.3	745.1	*	1		0945	118	0.	.3	745.1	*	1		1805	218	293.	.7	746.9
1		0130	19	0.	.3	745.1	*	1		0950	119	0.	.3	745.1	*	1		1810	219	281.	.7	746.8
1		0135	20	0.	.3	745.1	*	1		0955	120	0.	.3	745.1	*	1		1815	220	269.	.7	746.8
1		0140	21	0.	.3	745.1	*	1		1000	121	0.	.3	745.1	*	1		1820	221	257.	.7	746.7
1		0145	22	0.	.3	745.1	*	1		1005	122	0.	.3	745.1	*	1		1825	222	245.	.7	746.7
1		0150	23	0.	.3	745.1	*	1		1010	123	0.	.3	745.1	*	1		1830	223	234.	.7	746.7

1	0155	24	0.	.3	745.1	*	1	1015	124	0.	.3	745.1	*	1	1835	224	222.	.7	746.6
1	0200	25	0.	.3	745.1	*	1	1020	125	0.	.3	745.1	*	1	1840	225	211.	.7	746.6
1	0205	26	0.	.3	745.1	*	1	1025	126	0.	.3	745.1	*	1	1845	226	200.	.7	746.5
1	0210	27	0.	.3	745.1	*	1	1030	127	0.	.3	745.1	*	1	1850	227	189.	.7	746.5
1	0215	28	0.	.3	745.1	*	1	1035	128	0.	.3	745.1	*	1	1855	228	178.	.7	746.5
1	0220	29	0.	.3	745.1	*	1	1040	129	0.	.3	745.1	*	1	1900	229	168.	.7	746.4
1	0225	30	0.	.3	745.1	*	1	1045	130	0.	.3	745.1	*	1	1905	230	158.	.7	746.4
1	0230	31	0.	.3	745.1	*	1	1050	131	0.	.3	745.1	*	1	1910	231	148.	.7	746.4
1	0235	32	0.	.3	745.1	*	1	1055	132	0.	.3	745.1	*	1	1915	232	138.	.7	746.3
1	0240	33	0.	.3	745.1	*	1	1100	133	0.	.3	745.1	*	1	1920	233	129.	.7	746.3
1	0245	34	0.	.3	745.1	*	1	1105	134	0.	.3	745.1	*	1	1925	234	120.	.7	746.3
1	0250	35	0.	.3	745.1	*	1	1110	135	0.	.3	745.1	*	1	1930	235	111.	.7	746.2
1	0255	36	0.	.3	745.1	*	1	1115	136	0.	.3	745.1	*	1	1935	236	103.	.7	746.2
1	0300	37	0.	.3	745.1	*	1	1120	137	0.	.3	745.1	*	1	1940	237	94.	.7	746.2
1	0305	38	0.	.3	745.1	*	1	1125	138	0.	.3	745.1	*	1	1945	238	86.	.7	746.1
1	0310	39	0.	.3	745.1	*	1	1130	139	1.	.3	745.1	*	1	1950	239	79.	.7	746.1
1	0315	40	0.	.3	745.1	*	1	1135	140	53.	.3	745.4	*	1	1955	240	75.	.7	746.1
1	0320	41	0.	.3	745.1	*	1	1140	141	197.	.3	746.1	*	1	2000	241	73.	.7	746.1
1	0325	42	0.	.3	745.1	*	1	1145	142	463.	.3	747.0	*	1	2005	242	71.	.7	746.1
1	0330	43	0.	.3	745.1	*	1	1150	143	897.	.2	748.0	*	1	2010	243	70.	.7	746.1
1	0335	44	0.	.3	745.1	*	1	1155	144	933.	1.9	748.1	*	1	2015	244	69.	.7	746.1
1	0340	45	0.	.3	745.1	*	1	1200	145	1066.	7.6	748.4	*	1	2020	245	67.	.7	746.1
1	0345	46	0.	.3	745.1	*	1	1205	146	1324.	17.2	749.0	*	1	2025	246	66.	.7	746.0
1	0350	47	0.	.3	745.1	*	1	1210	147	1669.	29.4	749.7	*	1	2030	247	64.	.7	746.0
1	0355	48	0.	.3	745.1	*	1	1215	148	1929.	42.1	750.1	*	1	2035	248	63.	.7	746.0
1	0400	49	0.	.3	745.1	*	1	1220	149	2098.	53.7	750.4	*	1	2040	249	61.	.7	746.0
1	0405	50	0.	.3	745.1	*	1	1225	150	2224.	62.3	750.5	*	1	2045	250	60.	.7	746.0
1	0410	51	0.	.3	745.1	*	1	1230	151	2294.	67.0	750.6	*	1	2050	251	58.	.7	746.0
1	0415	52	0.	.3	745.1	*	1	1235	152	2313.	68.3	750.7	*	1	2055	252	57.	.7	746.0
1	0420	53	0.	.3	745.1	*	1	1240	153	2304.	67.7	750.6	*	1	2100	253	55.	.7	746.0
1	0425	54	0.	.3	745.1	*	1	1245	154	2291.	66.8	750.6	*	1	2105	254	54.	.7	746.0
1	0430	55	0.	.3	745.1	*	1	1250	155	2292.	66.9	750.6	*	1	2110	255	52.	.7	746.0
1	0435	56	0.	.3	745.1	*	1	1255	156	2317.	68.6	750.7	*	1	2115	256	51.	.7	746.0
1	0440	57	0.	.3	745.1	*	1	1300	157	2369.	72.2	750.7	*	1	2120	257	50.	.7	746.0
1	0445	58	0.	.3	745.1	*	1	1305	158	2434.	76.6	750.8	*	1	2125	258	49.	.7	746.0
1	0450	59	0.	.3	745.1	*	1	1310	159	2495.	80.8	750.9	*	1	2130	259	48.	.7	746.0
1	0455	60	0.	.3	745.1	*	1	1315	160	2546.	84.3	751.0	*	1	2135	260	47.	.7	746.0
1	0500	61	0.	.3	745.1	*	1	1320	161	2596.	87.8	751.0	*	1	2140	261	46.	.7	746.0
1	0505	62	0.	.3	745.1	*	1	1325	162	2726.	91.3	751.1	*	1	2145	262	46.	.7	745.9
1	0510	63	0.	.3	745.1	*	1	1330	163	3038.	93.7	751.2	*	1	2150	263	45.	.7	745.9
1	0515	64	0.	.3	745.1	*	1	1335	164	3139.	94.5	751.2	*	1	2155	264	44.	.7	745.9
1	0520	65	0.	.3	745.1	*	1	1340	165	3137.	94.5	751.2	*	1	2200	265	43.	.7	745.9
1	0525	66	0.	.3	745.1	*	1	1345	166	3113.	94.3	751.2	*	1	2205	266	43.	.7	745.9
1	0530	67	0.	.3	745.1	*	1	1350	167	3115.	94.3	751.2	*	1	2210	267	42.	.7	745.9
1	0535	68	0.	.3	745.1	*	1	1355	168	3158.	94.6	751.2	*	1	2215	268	41.	.7	745.9
1	0540	69	0.	.3	745.1	*	1	1400	169	3231.	95.2	751.2	*	1	2220	269	41.	.7	745.9
1	0545	70	0.	.3	745.1	*	1	1405	170	3317.	95.9	751.2	*	1	2225	270	40.	.7	745.9
1	0550	71	0.	.3	745.1	*	1	1410	171	3405.	96.5	751.2	*	1	2230	271	40.	.7	745.9
1	0555	72	0.	.3	745.1	*	1	1415	172	3489.	97.2	751.2	*	1	2235	272	39.	.7	745.9
1	0600	73	0.	.3	745.1	*	1	1420	173	3563.	97.8	751.2	*	1	2240	273	39.	.7	745.9
1	0605	74	0.	.3	745.1	*	1	1425	174	3624.	98.2	751.3	*	1	2245	274	38.	.7	745.9
1	0610	75	0.	.3	745.1	*	1	1430	175	3665.	98.6	751.3	*	1	2250	275	37.	.7	745.9
1	0615	76	0.	.3	745.1	*	1	1435	176	3682.	98.7	751.3	*	1	2255	276	37.	.7	745.9
1	0620	77	0.	.3	745.1	*	1	1440	177	3674.	98.6	751.3	*	1	2300	277	36.	.7	745.9
1	0625	78	0.	.3	745.1	*	1	1445	178	3643.	98.4	751.3	*	1	2305	278	36.	.7	745.9
1	0630	79	0.	.3	745.1	*	1	1450	179	3590.	98.0	751.2	*	1	2310	279	35.	.7	745.9
1	0635	80	0.	.3	745.1	*	1	1455	180	3518.	97.4	751.2	*	1	2315	280	35.	.7	745.9
1	0640	81	0.	.3	745.1	*	1	1500	181	3429.	96.7	751.2	*	1	2320	281	34.	.7	745.9
1	0645	82	0.	.3	745.1	*	1	1505	182	3326.	95.9	751.2	*	1	2325	282	34.	.7	745.9
1	0650	83	0.	.3	745.1	*	1	1510	183	3208.	95.0	751.2	*	1	2330	283	33.	.7	745.9
1	0655	84	0.	.3	745.1	*	1	1515	184	3077.	94.0	751.2	*	1	2335	284	33.	.7	745.9
1	0700	85	0.	.3	745.1	*	1	1520	185	2935.	92.9	751.1	*	1	2340	285	32.	.7	745.9
1	0705	86	0.	.3	745.1	*	1	1525	186	2787.	91.7	751.1	*	1	2345	286	32.	.7	745.9
1	0710	87	0.	.3	745.1	*	1	1530	187	2637.	90.6	751.1	*	1	2350	287	31.	.7	745.9
1	0715	88	0.	.3	745.1	*	1	1535	188	2613.	88.9	751.1	*	1	2355	288	31.	.7	745.9
1	0720	89	0.	.3	745.1	*	1	1540	189	2577.	86.4	751.0	*	2	0000	289	30.	.7	745.9
1	0725	90	0.	.3	745.1	*	1	1545	190	2531.	83.3	751.0	*	2	0005	290	30.	.7	745.9
1	0730	91	0.	.3	745.1	*	1	1550	191	2477.	79.6	750.9	*	2	0010	291	30.	.7	745.9
1	0735	92	0.	.3	745.1	*	1	1555	192	2417.	75.5	750.8	*	2	0015	292	29.	.7	745.9
1	0740	93	0.	.3	745.1	*	1	1600	193	2351.	71.0	750.7	*	2	0020	293	29.	.7	745.9
1	0745	94	0.	.3	745.1	*	1	1605	194	2281.	66.2	750.6	*	2	0025	294	28.	.7	745.9
1	0750	95	0.	.3	745.1	*	1	1610	195	2207.	61.1	750.5	*	2	0030	295	28.	.7	745.9
1	0755	96	0.	.3	745.1	*	1	1615	196	2131.	55.9	750.4	*	2	0035	296	27.	.7	745.9
1	0800	97	0.	.3	745.1	*	1	1620	197	2052.	50.5	750.3	*	2	0040	297	27.	.7	745.9
1	0805	98	0.	.3	745.1	*	1	1625	198	1972.	45.0	750.2	*	2	0045	298	27.	.7	745.9
1	0810	99	0.	.3	745.1	*	1	1630	199	1894.	39.5	750.1	*	2	0050	299	26.	.7	745.8
1	0815	100	0.	.3	745.1	*	1	1635	200	1811.	33.9	749.9	*	2	0055	300	26.	.7	745.8
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 3682.	14.58		2312.	607.	584.	584.
		(INCHES)	.570	.598	.598	.598
		(AC-FT)	1146.	1203.	1203.	1203.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
99.	14.58	62.	16.	15.	15.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR

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+  (FEET)    (HR)
   751.26    14.58            750.24      746.70      746.64      746.64

                    CUMULATIVE AREA =   37.74 SQ MI
1
                                                   STATION   RES6&7

                      (I) INFLOW,   (O) OUTFLOW
          0.       500.      1000.     1500.     2000.     2500.     3000.     3500.     4000.        0.        0.        0.        0.
                                                                                  (S) STORAGE
          0.         0.        0.        0.        0.        0.        0.       40.       80.      120.        0.        0.        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         .         .         .         .         .         .
 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  27I         .         .         .         .         .         S         .         .         .         .         .         .
 10215  28I         .         .         .         .         .         S         .         .         .         .         .         .
 10220  29I         .         .         .         .         .         S         .         .         .         .         .         .
 10225  30I         .         .         .         .         .         S         .         .         .         .         .         .
 10230  31I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10235  32I         .         .         .         .         .         S         .         .         .         .         .         .
 10240  33I         .         .         .         .         .         S         .         .         .         .         .         .
 10245  34I         .         .         .         .         .         S         .         .         .         .         .         .
 10250  35I         .         .         .         .         .         S         .         .         .         .         .         .
 10255  36I         .         .         .         .         .         S         .         .         .         .         .         .
 10300  37I         .         .         .         .         .         S         .         .         .         .         .         .
 10305  38I         .         .         .         .         .         S         .         .         .         .         .         .
 10310  39I         .         .         .         .         .         S         .         .         .         .         .         .
 10315  40I         .         .         .         .         .         S         .         .         .         .         .         .
 10320  41I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10325  42I         .         .         .         .         .         S         .         .         .         .         .         .
 10330  43I         .         .         .         .         .         S         .         .         .         .         .         .
 10335  44I         .         .         .         .         .         S         .         .         .         .         .         .
 10340  45I         .         .         .         .         .         S         .         .         .         .         .         .
 10345  46I         .         .         .         .         .         S         .         .         .         .         .         .
 10350  47I         .         .         .         .         .         S         .         .         .         .         .         .
 10355  48I         .         .         .         .         .         S         .         .         .         .         .         .
 10400  49I         .         .         .         .         .         S         .         .         .         .         .         .
 10405  50I         .         .         .         .         .         S         .         .         .         .         .         .
 10410  51I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10415  52I         .         .         .         .         .         S         .         .         .         .         .         .
 10420  53I         .         .         .         .         .         S         .         .         .         .         .         .
 10425  54I         .         .         .         .         .         S         .         .         .         .         .         .
 10430  55I         .         .         .         .         .         S         .         .         .         .         .         .
 10435  56I         .         .         .         .         .         S         .         .         .         .         .         .
 10440  57I         .         .         .         .         .         S         .         .         .         .         .         .
 10445  58I         .         .         .         .         .         S         .         .         .         .         .         .
 10450  59I         .         .         .         .         .         S         .         .         .         .         .         .
 10455  60I         .         .         .         .         .         S         .         .         .         .         .         .
 10500  61I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10505  62I         .         .         .         .         .         S         .         .         .         .         .         .
 10510  63I         .         .         .         .         .         S         .         .         .         .         .         .
 10515  64I         .         .         .         .         .         S         .         .         .         .         .         .
 10520  65I         .         .         .         .         .         S         .         .         .         .         .         .
 10525  66I         .         .         .         .         .         S         .         .         .         .         .         .
 10530  67I         .         .         .         .         .         S         .         .         .         .         .         .
 10535  68I         .         .         .         .         .         S         .         .         .         .         .         .
 10540  69I         .         .         .         .         .         S         .         .         .         .         .         .
 10545  70I         .         .         .         .         .         S         .         .         .         .         .         .
 10550  71I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10555  72I         .         .         .         .         .         S         .         .         .         .         .         .
 10600  73I         .         .         .         .         .         S         .         .         .         .         .         .
 10605  74I         .         .         .         .         .         S         .         .         .         .         .         .
 10610  75I         .         .         .         .         .         S         .         .         .         .         .         .
 10615  76I         .         .         .         .         .         S         .         .         .         .         .         .
 10620  77I         .         .         .         .         .         S         .         .         .         .         .         .
 10625  78I         .         .         .         .         .         S         .         .         .         .         .         .
 10630  79I         .         .         .         .         .         S         .         .         .         .         .         .
 10635  80I         .         .         .         .         .         S         .         .         .         .         .         .
 10640  81I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 10645  82I         .         .         .         .         .         S         .         .         .         .         .         .
 10650  83I         .         .         .         .         .         S         .         .         .         .         .         .
                    .         .         .         .         .         S         .         .         .         .         .         .
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10655  84I         .         .         .         .         .         S         .         .         .         .         .         .
10700  85I         .         .         .         .         .         S         .         .         .         .         .         .
10705  86I         .         .         .         .         .         S         .         .         .         .         .         .
10710  87I         .         .         .         .         .         S         .         .         .         .         .         .
10715  88I         .         .         .         .         .         S         .         .         .         .         .         .
10720  89I         .         .         .         .         .         S         .         .         .         .         .         .
10725  90I         .         .         .         .         .         S         .         .         .         .         .         .
10730  91I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735  92I         .         .         .         .         .         S         .         .         .         .         .         .
10740  93I         .         .         .         .         .         S         .         .         .         .         .         .
10745  94I         .         .         .         .         .         S         .         .         .         .         .         .
10750  95I         .         .         .         .         .         S         .         .         .         .         .         .
10755  96I         .         .         .         .         .         S         .         .         .         .         .         .
10800  97I         .         .         .         .         .         S         .         .         .         .         .         .
10805  98I         .         .         .         .         .         S         .         .         .         .         .         .
10810  99I         .         .         .         .         .         S         .         .         .         .         .         .
10815 100I         .         .         .         .         .         S         .         .         .         .         .         .
10820 101I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10825 102I         .         .         .         .         .         S         .         .         .         .         .         .
10830 103I         .         .         .         .         .         S         .         .         .         .         .         .
10835 104I         .         .         .         .         .         S         .         .         .         .         .         .
10840 105I         .         .         .         .         .         S         .         .         .         .         .         .
10845 106I         .         .         .         .         .         S         .         .         .         .         .         .
10850 107I         .         .         .         .         .         S         .         .         .         .         .         .
10855 108I         .         .         .         .         .         S         .         .         .         .         .         .
10900 109I         .         .         .         .         .         S         .         .         .         .         .         .
10905 110I         .         .         .         .         .         S         .         .         .         .         .         .
10910 111I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10915 112I         .         .         .         .         .         S         .         .         .         .         .         .
10920 113I         .         .         .         .         .         S         .         .         .         .         .         .
10925 114I         .         .         .         .         .         S         .         .         .         .         .         .
10930 115I         .         .         .         .         .         S         .         .         .         .         .         .
10935 116I         .         .         .         .         .         S         .         .         .         .         .         .
10940 117I         .         .         .         .         .         S         .         .         .         .         .         .
10945 118I         .         .         .         .         .         S         .         .         .         .         .         .
10950 119I         .         .         .         .         .         S         .         .         .         .         .         .
10955 120I         .         .         .         .         .         S         .         .         .         .         .         .
11000 121I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11005 122I         .         .         .         .         .         S         .         .         .         .         .         .
11010 123I         .         .         .         .         .         S         .         .         .         .         .         .
11015 124I         .         .         .         .         .         S         .         .         .         .         .         .
11020 125I         .         .         .         .         .         S         .         .         .         .         .         .
11025 126I         .         .         .         .         .         S         .         .         .         .         .         .
11030 127I         .         .         .         .         .         S         .         .         .         .         .         .
11035 128I         .         .         .         .         .         S         .         .         .         .         .         .
11040 129I         .         .         .         .         .         S         .         .         .         .         .         .
11045 130I         .         .         .         .         .         S         .         .         .         .         .         .
11050 131I . . . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11055 132I         .         .         .         .         .         S         .         .         .         .         .         .
11100 133I         .         .         .         .         .         S         .         .         .         .         .         .
11105 134I         .         .         .         .         .         S         .         .         .         .         .         .
11110 135I         .         .         .         .         .         S         .         .         .         .         .         .
11115 136I         .         .         .         .         .         S         .         .         .         .         .         .
11120 137I         .         .         .         .         .         S         .         .         .         .         .         .
11125 138I         .         .         .         .         .         S         .         .         .         .         .         .
11130 139I         .         .         .         .         .         S         .         .         .         .         .         .
11135 140.I        .         .         .         .         .         S         .         .         .         .         .         .
11140 141. . I . . . . . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11145 142.        I.         .         .         .         .         S         .         .         .         .         .         .
11150 143.         .       I .         .         .         .         S         .         .         .         .         .         .
11155 144.         .        O.        I.         .         .         S         .         .         .         .         .         .
11200 145.         .         .O        .         .   I     .         . S       .         .         .         .         .         .
11205 146.         .         .     O   .         .         .         I   S     .         .         .         .         .         .
11210 147.         .         .         .  O      .         .         .      S  .I        .         .         .         .         .
11215 148.         .         .         .        O.         .         .         .S   I    .         .         .         .         .
11220 149.         .         .         .         . O       .         .         .  S      .         .         .         .         .
11225 150.         .         .         .         .   O     .         .   I     .     S   .         .         .         .         .
11230 151. . . . . . . . . . . . . . . . . . . . . . . O . . . I . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . .
11235 152.         .         .         .         .     I   .         .         .      S  .         .         .         .         .
11240 153.         .         .         .         .  I  O   .         .         .      S  .         .         .         .         .
11245 154.         .         .         .         .   I O   .         .         .      S  .         .         .         .         .
11250 155.         .         .         .         .     O I .         .         .      S  .         .         .         .         .
11255 156.         .         .         .         .     O   .   I     .         .      S  .         .         .         .         .
11300 157.         .         .         .         .      O  .         I         .       S .         .         .         .         .
11305 158.         .         .         .         .        O.         . I       .        S.         .         .         .         .
11310 159.         .         .         .         .         O         .I        .         S         .         .         .         .
11315 160.         .         .         .         .         O        I         .         .S        .         .         .         .
11320 161. . . . . . . . . . . . . . . . . . . . . . . . . . O . . . . I . . . . . . . . . S . . . . . . . . . . . . . . . . . . .
11325 162.         .         .         .         .         .    O    .    I    .         .  S      .         .         .         .
11330 163.         .         .         .         .         .         .O   I    .         .  S      .         .         .         .
11335 164.         .         .         .         .         .         .  I      .         .   S     .         .         .         .
11340 165.         .         .         .         .         .         . IO      .         .   S     .         .         .         .
11345 166.         .         .         .         .         .         . I       .         .   S     .         .         .         .
11350 167.         .         .         .         .         .         . OI      .         .   S     .         .         .         .
11355 168.         .         .         .         .         .         .  O I    .         .   S     .         .         .         .
11400 169.         .         .         .         .         .         .    OI   .         .   S     .         .         .         .
11405 170.         .         .         .         .         .         .     O I .         .   S     .         .         .         .
11410 171. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . O I . . . . . . S . . . . . . . . . . . . . . . . . .
11415 172.         .         .         .         .         .         .         O I       .   S     .         .         .         .
11420 173.         .         .         .         .         .         .         .O I      .   S     .         .         .         .
11425 174.         .         .         .         .         .         .         . O I     .    S    .         .         .         .
11430 175.         .         .         .         .         .         .         .  OI     .    S    .         .         .         .
11435 176.         .         .         .         .         .         .         .   I     .    S    .         .         .         .
11440 177.         .         .         .         .         .         .         .  I      .    S    .         .         .         .
11445 178.         .         .         .         .         .         .         . IO      .    S    .         .         .         .
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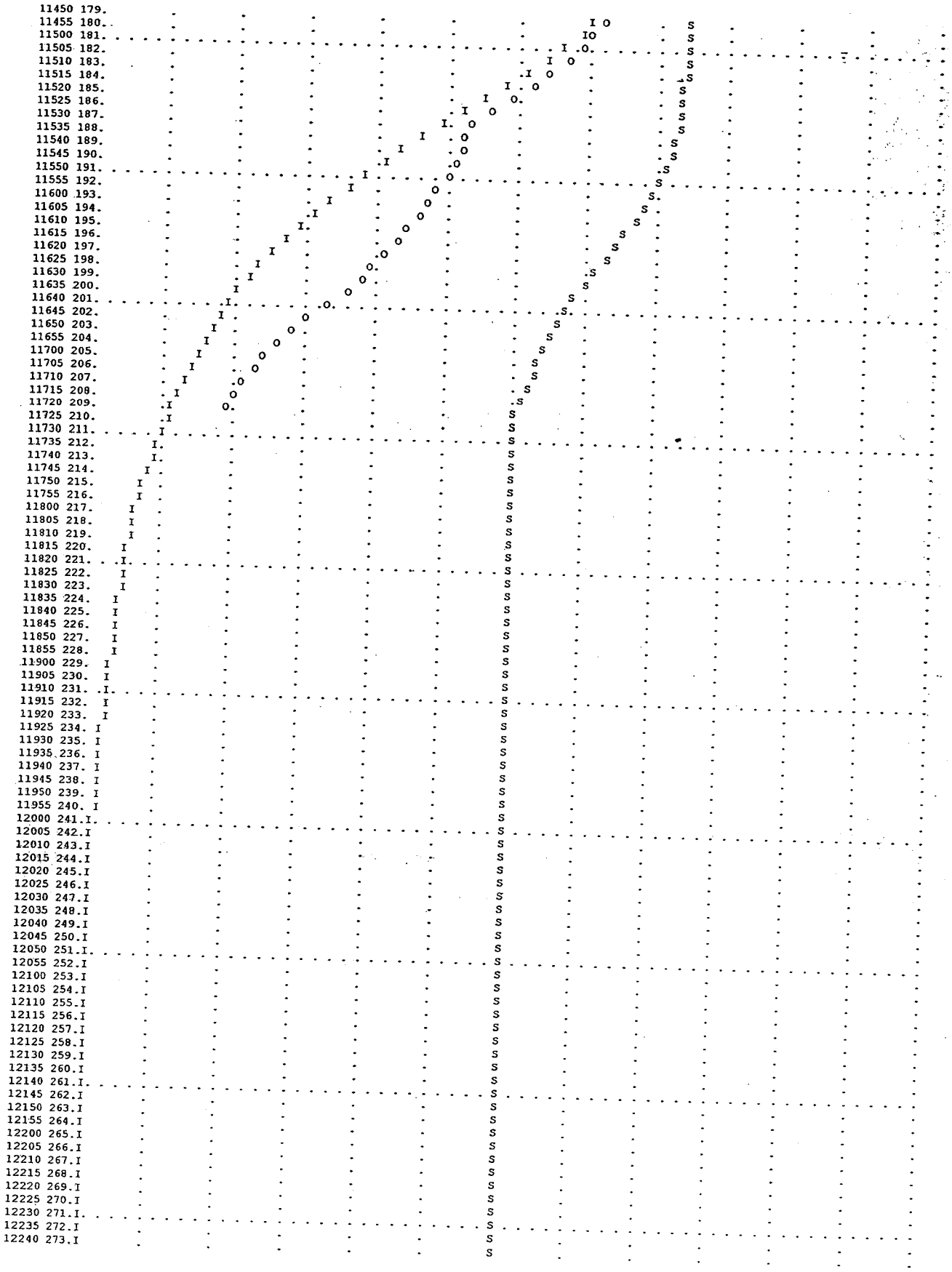
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20000 289.I        .         .         .         .         .         S         .         .         .         .         .         .
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20015 292.I        .         .         .         .         .         S         .         .         .         .         .         .
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20040 297.I        .         .         .         .         .         S         .         .         .         .         .         .
20045 298.I        .         .         .         .         .         S         .         .         .         .         .         .
20050 299.I        .         .         .         .         .         S         .         .         .         .         .         .
20055 300.I--------.---------.---------.---------.---------.---------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 PRECIPITATION RATIO 1 .34	RATIO 2 .50	RATIO 3 .61	RATIO 4 1.00
HYDROGRAPH AT								
+	CP4.1	.66	1	FLOW	0.	82.	160.	439.
				TIME	.00	12.17	12.08	12.08
ROUTED TO								
+	4R1	.66	1	FLOW	0.	0.	0.	0.
				TIME	.00	.00	.00	.00
			** PEAK STAGES IN FEET **					
			1	STAGE	792.00	792.00	792.00	792.54
				TIME	.00	.00	.00	13.17
HYDROGRAPH AT								
+	4.2	1.35	1	FLOW	0.	70.	190.	661.
				TIME	.00	12.42	12.33	12.25
2 COMBINED AT								
+	CP4.2	2.01	1	FLOW	0.	70.	190.	661.
				TIME	.00	12.42	12.33	12.25
HYDROGRAPH AT								
+	5.4	1.28	1	FLOW	0.	0.	136.	825.
				TIME	.00	12.25	12.17	12.08
HYDROGRAPH AT								
+	5.1	.91	1	FLOW	0.	98.	225.	[illegible]
				TIME	.00	12.25	12.17	12.08
ROUTED TO								
+	5R1	.91	1	FLOW	0.	17.	88.	474.
				TIME	.00	13.08	12.75	12.42
			** PEAK STAGES IN FEET **					
			1	STAGE	811.50	811.89	812.54	814.19
				TIME	.00	13.08	12.75	12.42
HYDROGRAPH AT								
+	5.3	.54	1	FLOW	0.	98.	225.	659.
				TIME	.00	12.25	12.17	12.08
2 COMBINED AT								
+	CP5.3	1.45	1	FLOW	0.	98.	225.	[illegible]
				TIME	.00	12.25	12.17	12.25
ROUTED TO								
+	5R3	1.45	1	FLOW	0.	38.	140.	369.
				TIME	.00	12.92	12.67	12.50
			** PEAK STAGES IN FEET **					
			1	STAGE	797.50	798.11	798.82	799.81
				TIME	.00	12.92	12.67	12.50
HYDROGRAPH AT								
+	6.5	.70	1	FLOW	0.	0.	124.	758.
				TIME	.00	12.25	12.25	12.17

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HYDROGRAPH AT
+                    6.1       3.91    1   FLOW        62.     382.     716.    1872.
                                           TIME      12.33    12.42    12.42    12.33

ROUTED TO
+                    6R1       3.91    1   FLOW        41.     333.     660.    1630.
                                           TIME      12.50    12.50    12.50    12.50

                                       ** PEAK STAGES IN FEET **
                                       1   STAGE    862.85   864.24   865.00   866.44
                                           TIME      12.50    12.50    12.50    12.50

HYDROGRAPH AT
+                    6.2        .31    1   FLOW         0.      38.      92.     270.
                                           TIME        .00    12.17    12.08    12.08

2 COMBINED AT
+                  CP6.2       4.22    1   FLOW        41.     335.     664.    1639.
                                           TIME      12.50    12.50    12.50    12.50

ROUTED TO
+                    6R2       4.22    1   FLOW        15.     226.     536.    1563.
                                           TIME      13.42    12.92    12.75    12.67

                                       ** PEAK STAGES IN FEET **
                                       1   STAGE    810.20   811.14   811.91   813.59
                                           TIME      13.42    12.92    12.75    12.67

HYDROGRAPH AT
+                   6.10        .38    1   FLOW         0.      38.      92.     270.
                                           TIME        .00    12.17    12.08    12.08

2 COMBINED AT
+                  CP6.10       4.60    1   FLOW        15.     226.     536.    [redacted]
                                           TIME      13.42    12.92    12.75    12.67

ROUTED TO
+                   6R10       4.60    1   FLOW         0.     180.     486.    1512.
                                           TIME      22.92    13.08    12.83    12.75

                                       ** PEAK STAGES IN FEET **
                                       1   STAGE    810.00   811.04   811.83   813.54
                                           TIME        .00    13.08    12.83    12.75

HYDROGRAPH AT
+                    6.3       2.53    1   FLOW        12.     361.     781.    2299.
                                           TIME      12.25    12.33    12.33    12.25

ROUTED TO
+                    6R3       2.53    1   FLOW         6.     307.     716.    1849.
                                           TIME      12.50    12.42    12.42    12.42

                                       ** PEAK STAGES IN FEET **
                                       1   STAGE    836.22   838.19   839.42   841.31
                                           TIME      12.50    12.42    12.42    12.42

HYDROGRAPH AT
+                   6.12        .51    1   FLOW         0.       5.      60.     287.
                                           TIME        .00    12.25    12.17    12.08

3 COMBINED AT
+                  CP6.12       7.64    1   FLOW         6.     308.     824.    3162.
                                           TIME      12.50    12.42    12.42    12.50

ROUTED TO
+                   6R12       7.64    1   FLOW         1.     195.     727.    3070.
                                           TIME      13.08    12.67    12.58    12.58

                                       ** PEAK STAGES IN FEET **
                                       1   STAGE    820.51   821.30   822.19   824.42
                                           TIME      13.08    12.67    12.58    12.58

HYDROGRAPH AT
+                   6.11       2.17    1   FLOW        12.     361.     781.    2299.
                                           TIME      12.25    12.33    12.33    12.25

ROUTED TO
+                   6R11       2.17    1   FLOW         8.     320.     729.    1908.
                                           TIME      12.50    12.42    12.42    12.42

                                       ** PEAK STAGES IN FEET **
                                       1   STAGE    836.22   838.17   839.36   841.29
                                           TIME      12.50    12.42    12.42    12.42

HYDROGRAPH AT
+                    6.4        .37    1   FLOW         0.       5.      60.     287.
                                           TIME        .00    12.25    12.17    12.08

3 COMBINED AT
+                  CP6.4      10.18    1   FLOW         9.     433.    1342.    [redacted]
                                           TIME      12.50    12.58    12.50    12.50

ROUTED TO
+                   6R4       10.18    1   FLOW         4.     394.    1296.    4807.
                                           TIME      12.83    12.67    12.50    12.58
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                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      815.54   816.67   817.85   820.58
                                        TIME        12.83    12.67    12.50    12.58

 HYDROGRAPH AT
+                   6.13      .44   1   FLOW           0.       0.      65.     450.
                                        TIME         .00      .00    12.33    12.25

  2 COMBINED AT
+                     B1    10.62   1   FLOW           4.     394.    1333.    4989.
                                        TIME        12.83    12.67    12.50    12.50

 ROUTED TO
+                   RES1    10.62   1   FLOW           0.       9.     172.    1968.
                                        TIME         .00    15.00    13.75    13.25

                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      789.03   790.15   792.07   798.20
                                        TIME        24.75    15.00    13.75    13.08

 ROUTED TO
+                    RB1    10.62   1   FLOW           0.       8.     172.    1920.
                                        TIME         .00    15.58    13.83    13.33

                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      760.00   760.09   760.85   763.56
                                        TIME         .00    15.58    13.83    13.33

  3 COMBINED AT
+                  CP6.5    12.77   1   FLOW           0.      38.     219.     [illegible]
                                        TIME         .00    12.92    13.58    12.92

 ROUTED TO
+                    6R5    12.77   1   FLOW           0.      19.     201.    2060.
                                        TIME         .00    13.67    13.75    13.08

                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      760.00   760.23   760.95   763.73
                                        TIME         .00    13.67    13.75    13.08

 HYDROGRAPH AT
+                    6.9      .60   1   FLOW           0.       0.     124.     758.
                                        TIME         .00    12.25    12.25    12.17

 HYDROGRAPH AT
+                    6.6     1.05   1   FLOW          91.     272.     394.     802.
                                        TIME        12.17    12.17    12.08    12.08

 ROUTED TO
+                    6R6     1.05   1   FLOW           0.       0.       0.      25.
                                        TIME         .00      .00      .00    13.42

                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      784.00   784.00   784.15   784.92
                                        TIME         .00      .00    13.25    13.42

 HYDROGRAPH AT
+                    6.7      .45   1   FLOW           0.       6.      97.     509.
                                        TIME         .00    12.33    12.33    12.25

 HYDROGRAPH AT
+                    6.8      .29   1   FLOW           1.      39.      70.     173.
                                        TIME        12.33    12.25    12.25    12.17

  5 COMBINED AT
+                     CP6    15.16   1   FLOW           1.      44.     302.    2152.
                                        TIME        12.33    12.33    12.25    12.25

 HYDROGRAPH AT
+                    7.1     6.36   1   FLOW         156.     930.    1603.    3883.
                                        TIME        12.92    12.92    12.83    12.83

 ROUTED TO
+                    7R1     6.36   1   FLOW         116.     842.    1523.    3759.
                                        TIME        13.17    13.08    13.00    12.92

                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      100.25   100.66   100.90   101.42
                                        TIME        13.17    13.08    13.00    12.92

 HYDROGRAPH AT
+                    7.2     4.32   1   FLOW         150.     796.    1364.    3284.
                                        TIME        12.58    12.67    12.58    12.58

  2 COMBINED AT
+                  CP7.2    10.68   1   FLOW         216.    1343.    2465.    6237.
                                        TIME        12.67    12.75    12.75    12.67

 ROUTED TO
+                    7R2    10.68   1   FLOW         139.    1081.    2064.    5191.
                                        TIME        13.58    13.25    13.17    13.17

                                    ** PEAK STAGES IN FEET **
                                    1   STAGE      100.62   101.72   102.27   103.15
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                                        TIME        13.58     13.25     13.17     13.17
 HYDROGRAPH AT
+                 7.3      2.84    1   FLOW         99.      422.      685.     1570.
                                        TIME        13.08     13.08     13.08     13.08
  2 COMBINED AT
+               CP7.3     13.52    1   FLOW        216.     1465.     2726.     6726.
                                        TIME        13.25     13.17     13.17     13.08
 DIVERSION TO
+               DIV1      13.52    1   FLOW         42.      221.      528.     1354.
                                        TIME        13.25     13.17     13.17     13.08
 HYDROGRAPH AT
+                 D1      13.52    1   FLOW        173.     1245.     2198.     5372.
                                        TIME        13.25     13.17     13.17     13.08
 ROUTED TO
+                7R3      13.52    1   FLOW        122.     1063.     1965.     4801.
                                        TIME        14.17     13.58     13.50     13.50
                                   ** PEAK STAGES IN FEET **
                                   1   STAGE       100.47    101.39    101.86    102.63
                                        TIME        14.17     13.58     13.50     13.50
 HYDROGRAPH AT
+                 7.4       3.25    1   FLOW        165.      708.     1152.     2658.
                                        TIME        12.58     12.58     12.58     12.50
  2 COMBINED AT
+               CP7.4     16.77    1   FLOW        166.     1130.     2105.     5093.
                                        TIME        12.58     13.58     13.42     13.42
 ROUTED TO
+                7R4      16.77    1   FLOW          0.      555.     1353.     4218.
                                        TIME        24.25     15.25     14.75     14.33
                                   ** PEAK STAGES IN FEET **
                                   1   STAGE       100.00    100.51    100.79    101.39
                                        TIME          .00     15.25     14.75     14.33
 HYDROGRAPH AT
+                 7.5       3.89    1   FLOW         23.      385.      760.     2048.
                                        TIME        12.92     13.00     13.00     12.92
  2 COMBINED AT
+               CP7.5     20.66    1   FLOW         23.      565.     1380.     4393.
                                        TIME        12.92     15.17     14.75     14.25
 DIVERSION TO
+               DIV5      20.66    1   FLOW          6.      153.      374.     1195.
                                        TIME        12.92     15.17     14.75     14.25
 HYDROGRAPH AT
+                 D5      20.66    1   FLOW         17.      413.     1006.     3198.
                                        TIME        12.92     15.17     14.75     14.25
 ROUTED TO
+                7R5      20.66    1   FLOW          0.      270.      811.     2913.
                                        TIME          .00     16.00     15.33     14.67
                                   ** PEAK STAGES IN FEET **
                                   1   STAGE       100.00    100.32    100.55    101.04
                                        TIME          .00     16.00     15.33     14.67
 HYDROGRAPH AT
+                 7.6       1.92    1   FLOW          0.      296.      605.     1679.
                                        TIME          .00     12.42     12.42     12.33
  2 COMBINED AT
+               CP7.6     22.58    1   FLOW          0.      296.      811.     2913.
                                        TIME          .00     12.42     15.33     14.67
  2 COMBINED AT
+               CP6&7     37.74    1   FLOW          1.      331.      943.     3760.
                                        TIME        12.33     12.42     15.25     12.25
 ROUTED TO
+               RES6&7    37.74    1   FLOW          1.      331.      915.     3682.
                                        TIME        12.33     12.42     15.08     14.58
                                   ** PEAK STAGES IN FEET **
                                   1   STAGE       745.11    746.57    748.05    751.26
                                        TIME        12.33     12.42     15.50     14.58

*** NORMAL END OF HEC-1 ***
```

Channel Properties – Flow Master

Worksheet for East Channel 1 s=.0015

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00150	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	80.00	ft
Discharge	1563.00	ft^3/s

Results

Normal Depth	3.76	ft
Flow Area	342.81	ft^2
Wetted Perimeter	103.76	ft
Top Width	102.54	ft
Critical Depth	2.22	ft
Critical Slope	0.00907	ft/ft
Velocity	4.56	ft/s
Velocity Head	0.32	ft
Specific Energy	4.08	ft
Froude Number	0.44	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.76	ft
Critical Depth	2.22	ft
Channel Slope	0.00150	ft/ft
Critical Slope	0.00907	ft/ft

Worksheet for East Channel 1 s=.0021

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00210	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	80.00	ft
Discharge	1563.00	ft^3/s

Results

Normal Depth	3.41	ft
Flow Area	307.23	ft^2
Wetted Perimeter	101.54	ft
Top Width	100.43	ft
Critical Depth	2.22	ft
Critical Slope	0.00907	ft/ft
Velocity	5.09	ft/s
Velocity Head	0.40	ft
Specific Energy	3.81	ft
Froude Number	0.51	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.41	ft
Critical Depth	2.22	ft
Channel Slope	0.00210	ft/ft
Critical Slope	0.00907	ft/ft

Worksheet for East Channel 1 s=.0024

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00240	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	80.00	ft
Discharge	1563.00	ft^3/s

Results

Normal Depth	3.28	ft
Flow Area	294.20	ft^2
Wetted Perimeter	100.71	ft
Top Width	99.65	ft
Critical Depth	2.22	ft
Critical Slope	0.00907	ft/ft
Velocity	5.31	ft/s
Velocity Head	0.44	ft
Specific Energy	3.71	ft
Froude Number	0.55	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.28	ft
Critical Depth	2.22	ft
Channel Slope	0.00240	ft/ft
Critical Slope	0.00907	ft/ft

Worksheet for East Channel 1 s=.0029

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00290	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	80.00	ft
Discharge	1563.00	ft^3/s

Results

Normal Depth	3.10	ft
Flow Area	276.73	ft^2
Wetted Perimeter	99.60	ft
Top Width	98.59	ft
Critical Depth	2.22	ft
Critical Slope	0.00907	ft/ft
Velocity	5.65	ft/s
Velocity Head	0.50	ft
Specific Energy	3.59	ft
Froude Number	0.59	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.10	ft
Critical Depth	2.22	ft
Channel Slope	0.00290	ft/ft
Critical Slope	0.00907	ft/ft

Worksheet for East Channel 1 s=.0027

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00270	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	80.00	ft
Discharge	1563.00	ft^3/s

Results

Normal Depth	3.16	ft
Flow Area	283.20	ft^2
Wetted Perimeter	100.01	ft
Top Width	98.99	ft
Critical Depth	2.22	ft
Critical Slope	0.00907	ft/ft
Velocity	5.52	ft/s
Velocity Head	0.47	ft
Specific Energy	3.64	ft
Froude Number	0.58	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.16	ft
Critical Depth	2.22	ft
Channel Slope	0.00270	ft/ft
Critical Slope	0.00907	ft/ft

Worksheet for East Channel 1 s=.0037

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00370	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	80.00	ft
Discharge	1563.00	ft^3/s

Results

Normal Depth	2.89	ft
Flow Area	255.83	ft^2
Wetted Perimeter	98.25	ft
Top Width	97.31	ft
Critical Depth	2.22	ft
Critical Slope	0.00907	ft/ft
Velocity	6.11	ft/s
Velocity Head	0.58	ft
Specific Energy	3.47	ft
Froude Number	0.66	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.89	ft
Critical Depth	2.22	ft
Channel Slope	0.00370	ft/ft
Critical Slope	0.00907	ft/ft

Worksheet for East Channel 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00130	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	200.00	ft
Discharge	4857.00	ft^3/s

Results

Normal Depth	4.54	ft
Flow Area	969.26	ft^2
Wetted Perimeter	228.70	ft
Top Width	227.22	ft
Critical Depth	2.60	ft
Critical Slope	0.00845	ft/ft
Velocity	5.01	ft/s
Velocity Head	0.39	ft
Specific Energy	4.93	ft
Froude Number	0.43	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.54	ft
Critical Depth	2.60	ft
Channel Slope	0.00130	ft/ft
Critical Slope	0.00845	ft/ft

Worksheet for North Channel 1A s=.0026

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00260	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	659.00	ft^3/s

Results

Normal Depth	3.27	ft
Flow Area	129.95	ft^2
Wetted Perimeter	50.65	ft
Top Width	49.59	ft
Critical Depth	2.28	ft
Critical Slope	0.00940	ft/ft
Velocity	5.07	ft/s
Velocity Head	0.40	ft
Specific Energy	3.67	ft
Froude Number	0.55	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.27	ft
Critical Depth	2.28	ft
Channel Slope	0.00260	ft/ft
Critical Slope	0.00940	ft/ft

Worksheet for North Channel 1A s=.0029

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00290	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	659.00	ft^3/s

Results

Normal Depth	3.17	ft
Flow Area	125.15	ft^2
Wetted Perimeter	50.04	ft
Top Width	49.01	ft
Critical Depth	2.28	ft
Critical Slope	0.00940	ft/ft
Velocity	5.27	ft/s
Velocity Head	0.43	ft
Specific Energy	3.60	ft
Froude Number	0.58	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.17	ft
Critical Depth	2.28	ft
Channel Slope	0.00290	ft/ft
Critical Slope	0.00940	ft/ft

Worksheet for North Channel 1A s=.0030

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00300	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	659.00	ft^3/s

Results

Normal Depth	3.14	ft
Flow Area	123.69	ft^2
Wetted Perimeter	49.85	ft
Top Width	48.83	ft
Critical Depth	2.28	ft
Critical Slope	0.00940	ft/ft
Velocity	5.33	ft/s
Velocity Head	0.44	ft
Specific Energy	3.58	ft
Froude Number	0.59	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.14	ft
Critical Depth	2.28	ft
Channel Slope	0.00300	ft/ft
Critical Slope	0.00940	ft/ft

Worksheet for North Channel 1B s=.0030

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00300	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	659.00	ft^3/s

Results

Normal Depth	3.14	ft
Flow Area	123.69	ft^2
Wetted Perimeter	49.85	ft
Top Width	48.83	ft
Critical Depth	2.28	ft
Critical Slope	0.00940	ft/ft
Velocity	5.33	ft/s
Velocity Head	0.44	ft
Specific Energy	3.58	ft
Froude Number	0.59	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.14	ft
Critical Depth	2.28	ft
Channel Slope	0.00300	ft/ft
Critical Slope	0.00940	ft/ft

Worksheet for North Channel 2A s=.003

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00300	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	659.00	ft^3/s

Results

Normal Depth	3.14	ft
Flow Area	123.69	ft^2
Wetted Perimeter	49.85	ft
Top Width	48.83	ft
Critical Depth	2.28	ft
Critical Slope	0.00940	ft/ft
Velocity	5.33	ft/s
Velocity Head	0.44	ft
Specific Energy	3.58	ft
Froude Number	0.59	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.14	ft
Critical Depth	2.28	ft
Channel Slope	0.00300	ft/ft
Critical Slope	0.00940	ft/ft

Worksheet for North Channel 2A s=.0034

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00340	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	659.00	ft^3/s

Results

Normal Depth	3.03	ft
Flow Area	118.49	ft^2
Wetted Perimeter	49.17	ft
Top Width	48.19	ft
Critical Depth	2.28	ft
Critical Slope	0.00940	ft/ft
Velocity	5.56	ft/s
Velocity Head	0.48	ft
Specific Energy	3.51	ft
Froude Number	0.63	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.03	ft
Critical Depth	2.28	ft
Channel Slope	0.00340	ft/ft
Critical Slope	0.00940	ft/ft

Worksheet for Interim Channel 1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00340	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	788.00	ft^3/s

Results

Normal Depth	3.35	ft
Flow Area	134.02	ft^2
Wetted Perimeter	51.17	ft
Top Width	50.08	ft
Critical Depth	2.54	ft
Critical Slope	0.00912	ft/ft
Velocity	5.88	ft/s
Velocity Head	0.54	ft
Specific Energy	3.88	ft
Froude Number	0.63	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.35	ft
Critical Depth	2.54	ft
Channel Slope	0.00340	ft/ft
Critical Slope	0.00912	ft/ft

Worksheet for Interim Channel 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00340	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	30.00	ft
Discharge	788.00	ft^3/s

Results

Normal Depth	3.35	ft
Flow Area	134.02	ft^2
Wetted Perimeter	51.17	ft
Top Width	50.08	ft
Critical Depth	2.54	ft
Critical Slope	0.00912	ft/ft
Velocity	5.88	ft/s
Velocity Head	0.54	ft
Specific Energy	3.88	ft
Froude Number	0.63	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.35	ft
Critical Depth	2.54	ft
Channel Slope	0.00340	ft/ft
Critical Slope	0.00912	ft/ft

Worksheet for South Channel s=.0044

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00440	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	100.00	ft
Discharge	2179.00	ft^3/s

Results

Normal Depth	2.94	ft
Flow Area	319.61	ft^2
Wetted Perimeter	118.58	ft
Top Width	117.62	ft
Critical Depth	2.39	ft
Critical Slope	0.00881	ft/ft
Velocity	6.82	ft/s
Velocity Head	0.72	ft
Specific Energy	3.66	ft
Froude Number	0.73	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.94	ft
Critical Depth	2.39	ft
Channel Slope	0.00440	ft/ft
Critical Slope	0.00881	ft/ft

Worksheet for South Channel s=.0052

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00520	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	100.00	ft
Discharge	2179.00	ft^3/s

Results

Normal Depth	2.80	ft
Flow Area	303.09	ft^2
Wetted Perimeter	117.69	ft
Top Width	116.78	ft
Critical Depth	2.39	ft
Critical Slope	0.00881	ft/ft
Velocity	7.19	ft/s
Velocity Head	0.80	ft
Specific Energy	3.60	ft
Froude Number	0.79	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.80	ft
Critical Depth	2.39	ft
Channel Slope	0.00520	ft/ft
Critical Slope	0.00881	ft/ft

Worksheet for South Channel s=.0021

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00210	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	100.00	ft
Discharge	2179.00	ft^3/s

Results

Normal Depth	3.65	ft
Flow Area	404.99	ft^2
Wetted Perimeter	123.09	ft
Top Width	121.90	ft
Critical Depth	2.39	ft
Critical Slope	0.00881	ft/ft
Velocity	5.38	ft/s
Velocity Head	0.45	ft
Specific Energy	4.10	ft
Froude Number	0.52	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.65	ft
Critical Depth	2.39	ft
Channel Slope	0.00210	ft/ft
Critical Slope	0.00881	ft/ft

Worksheet for South Channel s=.002

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00200	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	100.00	ft
Discharge	2179.00	ft^3/s

Results

Normal Depth	3.70	ft
Flow Area	411.43	ft^2
Wetted Perimeter	123.42	ft
Top Width	122.22	ft
Critical Depth	2.39	ft
Critical Slope	0.00881	ft/ft
Velocity	5.30	ft/s
Velocity Head	0.44	ft
Specific Energy	4.14	ft
Froude Number	0.51	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.70	ft
Critical Depth	2.39	ft
Channel Slope	0.00200	ft/ft
Critical Slope	0.00881	ft/ft

Worksheet for South Channel s=.0026

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00260	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	100.00	ft
Discharge	2179.00	ft^3/s

Results

Normal Depth	3.43	ft
Flow Area	378.13	ft^2
Wetted Perimeter	121.68	ft
Top Width	120.57	ft
Critical Depth	2.39	ft
Critical Slope	0.00881	ft/ft
Velocity	5.76	ft/s
Velocity Head	0.52	ft
Specific Energy	3.94	ft
Froude Number	0.57	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.43	ft
Critical Depth	2.39	ft
Channel Slope	0.00260	ft/ft
Critical Slope	0.00881	ft/ft

Worksheet for South Channel s=.0037

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.028	
Channel Slope	0.00370	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	100.00	ft
Discharge	2179.00	ft^3/s

Results

Normal Depth	3.09	ft
Flow Area	337.76	ft^2
Wetted Perimeter	119.55	ft
Top Width	118.55	ft
Critical Depth	2.39	ft
Critical Slope	0.00881	ft/ft
Velocity	6.45	ft/s
Velocity Head	0.65	ft
Specific Energy	3.74	ft
Froude Number	0.67	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.09	ft
Critical Depth	2.39	ft
Channel Slope	0.00370	ft/ft
Critical Slope	0.00881	ft/ft

Channel Transition Calculation

Channel Transition Calculation for Expansion

(Calculations are based on Surface Mining Water Diversion Design Manual)

Channel: East Channel 1 to East Channel 2

Location: Transition from East Channel 1 to East Channel 2

Upstream Channel Section		Downstream Channel Section	
Riprap Lined		Riprap Lined	
D_{50}	0.5 ft	D_{50}	0.5 ft
Slope S =	0.0013	S =	0.0013
Bottom Width b =	80 ft	Bottom Width b =	200 ft
Flow rate Q=	1563 cfs	Flow rate Q=	4857 cfs
Velocity V1 =	4.35 ft/sec	Velocity V2 =	5.01 ft/sec
Normal depth d =	3.92 ft	Normal depth d =	4.54 ft
Accelaration due to Gravity g =	32.2 ft/sec^2		
Top Width T_w =	103.49 ft	Top Width T_w =	227.22 ft

a) Computing Change in water surface profile (Equation 7.5a)

Δ B.E. = $1.15 (V_2^2/2g - V_1^2/2g)$

0.110 ft

b) Computing necessary change in elevation (Delta Z) between transition entrance and exit (Equation 7.6a)

Δ B.E = $d_1 - d_2 + \Delta$ W.S 3.45 - 4.54 + 11.4

0.73 ft

c) Compute length of transition using maximum angle of convergence equal to 25° between the water surface

tan (12.5) = ((227/2) - 80) /L

0.2217 = 33.5 /L

Minimum length of Transition (L)= 151 ft

Drop Structure Design

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	1	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563	cfs
Crest width =	80.0	ft
g =	32.2	ft/s^2
TW =	3.45	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	19.54	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.09

Calculation of Drop Length

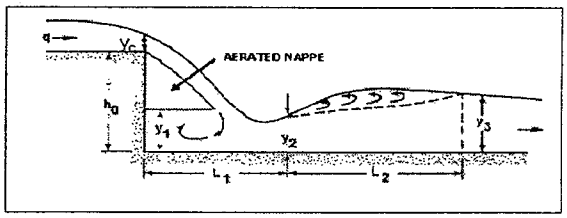

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_c N_d^{0.27}$$

$$y_1 = 1.0h_o N_d^{0.22}$$

$$y_2 = 0.54h_o N_d^{0.425}$$

$$y_3 = 1.66h_o N_d^{0.27}$$

Hence,	y_1 =	2.98 ft	
	y_2 =	0.99 ft	
	y_3 =	4.39 ft	(y3>TW, hence no submerged jump)
	L_1 =	11.38 ft	
	L_1 (Rounded) =	12 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2} =$ 4.4

$t = \frac{b}{zy_2} =$ 26.9

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3} =$ 5.4

Hence,	L_j =	23.71 ft	(Length of jump)
	L_j (Rounded) =	24	

Total apron length = (L_1+L_j) = 36 ft

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**
Design Flood Frequency:	100 -yr
Design Channel Drop:	5.00 ft
Drop Structure #	2

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_0 =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563 cfs
Crest width =	80.0 ft
g =	32.2 ft/s^2
TW =	3.45 ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00 (H:V)
h_0 =	5.00 ft
q =	19.54 $ft^3/s/ft$

Hence, Drop Number,

N_d = 0.09

Calculation of Drop Length

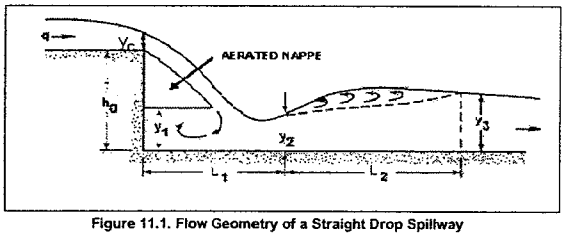

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 4.30h_cN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	2.98 ft	
y_2 =	0.99 ft	
y_3 =	4.39 ft	(y3>TW, hence no submerged jump)
L_1 =	11.38 ft	
L_1 (Rounded) =	12 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2} =$ 4.4

$t = \frac{b}{zy_2} =$ 26.9

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3} =$ 5.4

Hence,

L_j =	23.71 ft	(Length of jump)
L_j (Rounded) =	24	

Total apron length = (L_1+L_j) = 36 ft

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	3	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563	cfs
Crest width =	80.0	ft
g =	32.2	ft/s^2
TW =	3.45	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	19.54	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.09

Calculation of Drop Length

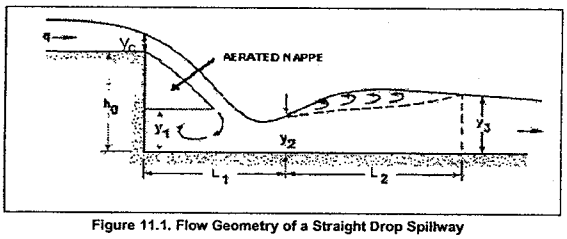

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 4.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	2.98 ft	
y_2 =	0.99 ft	
y_3 =	4.39 ft	(y3>TW, hence no submerged jump)
L_1 =	11.38 ft	
L_1 (Rounded) =	12 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = \quad 4.4$$

$$t = \frac{b}{zy_2} = \quad 26.9$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.6

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.4

Hence,

L_j =	23.71 ft	(Length of jump)
L_j (Rounded) =	24	

Total apron length = (L_1+L_j) = 36 ft

Date:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	4	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563	cfs
Crest width =	80.0	ft
g =	32.2	ft/s^2
TW =	3.45	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	19.54	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.09

Calculation of Drop Length

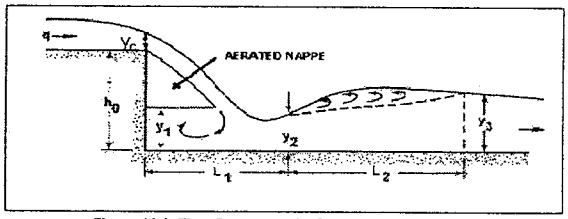

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_c N_d^{0.27}$$

$$y_1 = 1.0h_o N_d^{0.22}$$

$$y_2 = 0.54h_o N_d^{0.425}$$

$$y_3 = 1.66h_o N_d^{0.27}$$

Hence,	y_1 =	2.98 ft	
	y_2 =	0.99 ft	
	y_3 =	4.39 ft	(y3>TW, hence no submerged jump)
	L_1 =	11.38 ft	
	L_1 (Rounded) =	12 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2}$ = 4.4

$t = \frac{b}{zy_2}$ = 26.9

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.4

Hence,	L_j =	23.71 ft	(Length of jump)
	L_j (Rounded) =	24	

Total apron length = (L_1+L_j) = 36 ft

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	5	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563	cfs
Crest width =	80.0	ft
g =	32.2	ft/s^2
TW =	3.45	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	19.54	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.09

Calculation of Drop Length

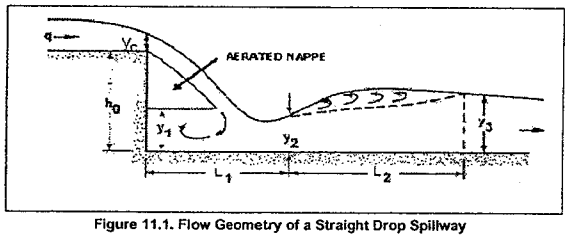

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30 h_c N_d^{0.27}$$

$$y_1 = 1.01 h_o N_d^{0.22}$$

$$y_2 = 0.54 h_o N_d^{0.425}$$

$$y_3 = 1.66 h_o N_d^{0.27}$$

Hence,	y_1 =	2.98 ft	
	y_2 =	0.99 ft	
	y_3 =	4.39 ft	(y3>TW, hence no submerged jump)
	L_1 =	11.38 ft	
	L_1 (Rounded) =	12 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2}$ = 4.4

$t = \frac{b}{zy_2}$ = 26.9

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.6

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.4

Hence,	L_j =	23.71 ft	(Length of jump)
	L_j (Rounded) =	24	

Total apron length = (L_1+L_j) = 36 ft

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	6	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration ($32.2\ ft^2/s$)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563	cfs
Crest width =	80.0	ft
g =	32.2	ft/s^2
TW =	3.45	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	19.54	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.09

Calculation of Drop Length

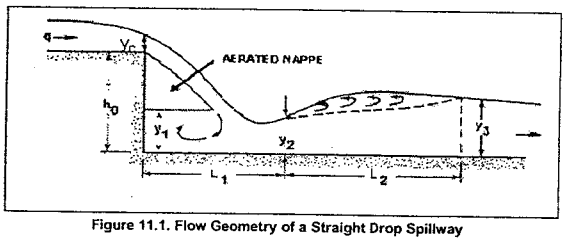

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 4.30 h_c N_d^{0.27}$$

$$y_1 = 1.0 h_o N_d^{0.22}$$

$$y_2 = 0.54 h_o N_d^{0.425}$$

$$y_3 = 1.66 h_o N_d^{0.27}$$

Hence,

y_1 =	2.98 ft	
y_2 =	0.99 ft	
y_3 =	4.39 ft	(y3>TW, hence no submerged jump)
L_1 =	11.38 ft	
L_1 (Rounded) =	12 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2} =$ 4.4

$t = \frac{b}{zy_2} =$ 26.9

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3} =$ 5.4

Hence,

L_j =	23.71 ft	(Length of jump)
L_j (Rounded) =	24	

Total apron length = (L_1+L_j) = 36 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 1**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	4.00	ft
Drop Structure #	7	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	1563	cfs
Crest width =	80.0	ft
g =	32.2	ft/s^2
TW =	3.45	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	4.00	ft
q =	19.54	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.19

Calculation of Drop Length

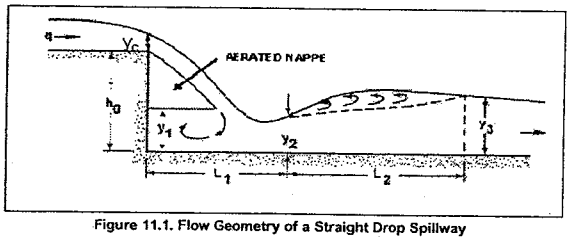

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_3 = 0.54h_oN_d^{0.425}$$

$$y_2 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	2.76 ft	
y_2 =	1.05 ft	
y_3 =	4.21 ft	(y3>TW, hence no submerged jump)
L_1 =	10.91 ft	
L_1 (Rounded) =	11 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2} =$ 4.0

$t = \frac{b}{zy_2} =$ 25.3

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.3

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3} =$ 5.45

Hence,

L_j =	22.94 ft	(Length of jump)
L_j (Rounded) =	23	

Total apron length = (L_1+L_j) = 34 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**South Channel**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	8	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	2479	cfs
Crest width =	100.0	ft
g =	32.2	ft/s^2
TW =	3.70	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.79	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

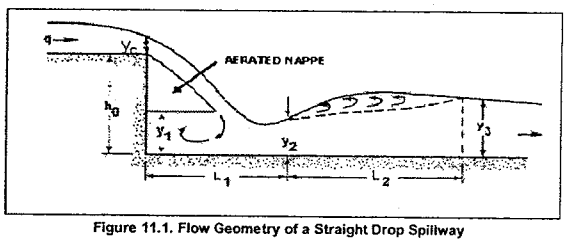

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	3.12	ft
y_2 =	1.09	ft
y_3 =	4.66	ft (y3>TW, hence no submerged jump)
L_1 =	12.07	ft
L_1 (Rounded) =	13	ft

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = 4.3$$

$$t = \frac{b}{zy_2} = 30.6$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$$\frac{L_j}{y_3} = 5.5$$

Hence,

L_j =	25.63	ft (Length of jump)
L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**South Channel**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	9	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	217.9	cfs
Crest width =	100.0	ft
g =	32.2	ft/s^2
TW =	3.70	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.79	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

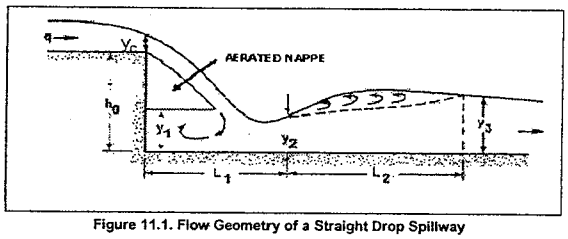

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_c N_d^{0.27}$$

$$y_1 = 1.0h_o N_d^{0.22}$$

$$y_2 = 0.54h_o N_d^{0.425}$$

$$y_3 = 1.66h_o N_d^{0.27}$$

Hence,	y_1 =	3.12 ft	
	y_2 =	1.09 ft	
	y_3 =	4.66 ft	(y3>TW, hence no submerged jump)
	L_1 =	12.07 ft	
	L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = \quad 4.3$$

$$t = \frac{b}{zy_2} = \quad 30.6$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_d = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.5

Hence,	L_j =	25.63 ft	(Length of jump)
	L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**South Channel**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	10	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	217.9	cfs
Crest width =	100.0	ft
g =	32.2	ft/s^2
TW =	3.70	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.79	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

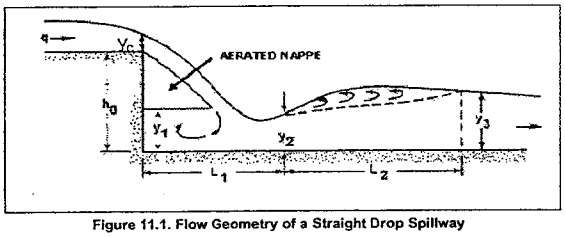

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	3.12 ft	
y_2 =	1.09 ft	
y_3 =	4.66 ft	(y3>TW, hence no submerged jump)
L_1 =	12.07 ft	
L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2}$ = 4.3

$t = \frac{b}{zy_2}$ = 30.6

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.5

Hence,

L_j =	25.63 ft	(Length of jump)
L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**South Channel**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	11	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	2179	cfs
Crest width =	100.0	ft
g =	32.2	ft/s^2
TW =	3.70	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.79	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

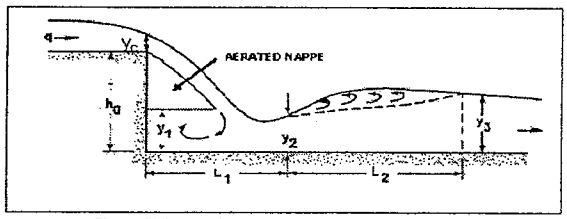

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 4.30h_cN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	3.12 ft	
y_2 =	1.09 ft	
y_3 =	4.66 ft	(y3>TW, hence no submerged jump)
L_1 =	12.07 ft	
L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = 4.3$$

$$t = \frac{b}{zy_2} = 30.6$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.5

Hence,

L_j =	25.63 ft	(Length of jump)
L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**South Channel**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	12	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	2179	cfs
Crest width =	100.0	ft
g =	32.2	ft/s^2
TW =	3.70	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.79	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

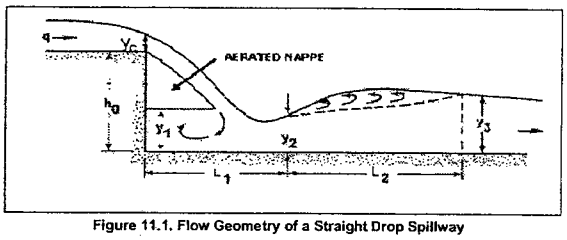

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,	y_1 =	3.12 ft	
	y_2 =	1.09 ft	
	y_3 =	4.66 ft	(y3>TW, hence no submerged jump)
	L_1 =	12.07 ft	
	L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = \quad 4.3$$

$$t = \frac{b}{zy_2} = \quad 30.6$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.5

Hence,	L_j =	25.63 ft	(Length of jump)
	L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**South Channel**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	2.00	ft
Drop Structure #	13	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	2179	cfs
Crest width =	100.0	ft
g =	32.2	ft/s^2
TW =	3.70	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	2.00	ft
q =	21.79	$ft^3/s/ft$

Hence, Drop Number,

N_d = 1.84 (Low-drop since Nd>1.0; Check for submerged jump)

Calculation of Drop Length

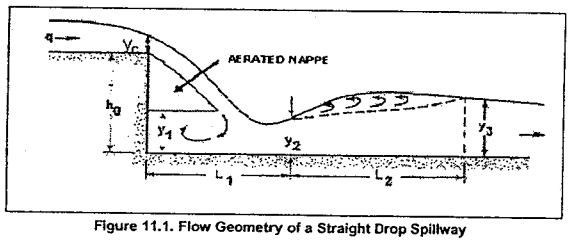

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_cN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	2.29 ft	
y_2 =	1.40 ft	
y_3 =	3.92 ft	(y3>TW, hence no submerged jump)
L_1 =	10.14 ft	
L_1 (Rounded) =	11 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2} =$ 2.8

$t = \frac{b}{zy_2} =$ 23.8

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 2.2

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3} =$ 4.7

Hence,

L_j =	18.42 ft	(Length of jump)
L_j (Rounded) =	19	

Total apron length = (L_1+L_j) = 30 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**North Channel-1A**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	14	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	659	cfs
Crest width =	30.0	ft
g =	32.2	ft/s^2
TW =	3.51	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.97	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

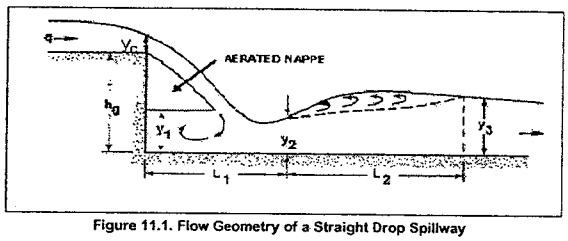

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_cN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,	y_1 =	3.14 ft	
	y_2 =	1.10 ft	
	y_3 =	4.68 ft	(y3>TW, hence no submerged jump)
	L_1 =	12.13 ft	
	L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = \quad 4.3$$

$$t = \frac{b}{zy_2} = \quad 9.1$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3}$ = 5.45

Hence,	L_j =	25.51 ft	(Length of jump)
	L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**North Channel-1A**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	15	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_o =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	659	cfs
Crest width =	30.0	ft
g =	32.2	ft/s^2
TW =	3.51	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_o =	5.00	ft
q =	21.97	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

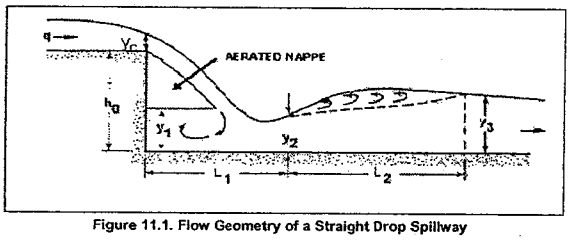

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 4.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	3.14 ft	
y_2 =	1.10 ft	
y_3 =	4.68 ft	(y3>TW, hence no submerged jump)
L_1 =	12.13 ft	
L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$$J = \frac{y_3}{y_2} = 4.3$$

$$t = \frac{b}{zy_2} = 9.1$$

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$$\frac{L_j}{y_3} = 5.45$$

Hence,

L_j =	25.51 ft	(Length of jump)
L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

By:_____
Checked:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**North Channel-1A**	
Design Flood Frequency:	100	-yr
Design Channel Drop:	5.00	ft
Drop Structure #	16	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_0 =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	659	cfs
Crest width =	30.0	ft
g =	32.2	ft/s^2
TW =	3.51	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_0 =	5.00	ft
q =	21.97	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.12

Calculation of Drop Length

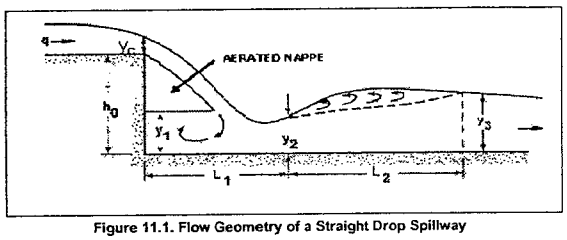

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft

Relevant equations,

$$L_1 = 2.30h_cN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,	y_1 =	3.14 ft	
	y_2 =	1.10 ft	
	y_3 =	4.68 ft	(y3>TW, hence no submerged jump)
	L_1 =	12.13 ft	
	L_1 (Rounded) =	13 ft	

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_3}{y_2} =$ 4.3

$t = \frac{b}{zy_2} =$ 9.1

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_3} =$ 5.45

Hence,	L_j =	25.51 ft	(Length of jump)
	L_j (Rounded) =	26	

Total apron length = (L_1+L_j) = 39 ft

Date:_____

Calculation of Hydraulic Jump and Apron Length for Vertical Drop

Calculations are based on HEC-14 & Drainage Design Manual Hydraulics, (2003) for Maricopa County

Channel Name:	**East Channel 2 @ South Basin**	
Design Flood Frequency:	100	-yr
Drop Location/Station:	10+00	
Design Channel Drop:	6.50	ft
Drop Structure #	17	

Drop Number Calculation

Drop Number, $N_d = \frac{q^2}{gh_o^3}$

Where,

N_d =	Drop Number
q =	Discharge per unit width of crest overfall, $ft^3/s/ft$
g =	Gravitational accleration (32.2 ft^2/s)
h_0 =	Drop height (design channel drop), ft

Drop Structure Geometry and Output from HEC-RAS/FlowMaster

Channel Q =	4857	cfs
Crest width =	200.0	ft
g =	32.2	ft/s^2
TW =	4.54	ft (tailwater depth as calculated in FlowMaster as 'Normal Depth')
z =	3.00	(H:V)
h_0 =	6.50	ft
q =	24.29	$ft^3/s/ft$

Hence, Drop Number,

N_d = 0.07

Calculation of Drop Length

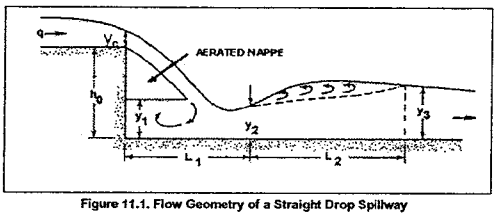

Figure 11.1. Flow Geometry of a Straight Drop Spillway

From Figure 11.1 (Chapter 11) of HEC-14,

y_1 =	Pool depth under the nappe, ft
y_2 =	Depth of flow at the toe of the nappe or at the beginning of the jump, ft
y_3 =	Sequent depth (sequent to y_2), ft
L_1 =	Drop length, ft
D_o =	Upstream channel bottom width

Relevant equations,

$$L_1 = 4.30h_oN_d^{0.27}$$

$$y_1 = 1.0h_oN_d^{0.22}$$

$$y_2 = 0.54h_oN_d^{0.425}$$

$$y_3 = 1.66h_oN_d^{0.27}$$

Hence,

y_1 =	3.58	ft
y_2 =	1.11	ft
y_3 =	5.19	ft (y3>TW, hence no submerged jump)
L_1 =	13.45	ft
L_1 (Rounded) =	14	ft
D_o =	130	ft

Length of Jump Calculation

Based on Chapter VI of HEC-14,
Jump parameters:

$J = \frac{y_1}{y_2}$ = 4.7

$t = \frac{b}{zy_2}$ = 60.0

From Figure VI-9 of HEC-14 (considering horizontal channel for the length of the jump),

F_{r2} = 3.5

From Figure VI-18 of HEC-14 (considering horizontal channel for the length of the jump),

$\frac{L_j}{y_2}$ = 5.5

Hence,

L_j =	28.55	ft (Length of jump)
L_j (Rounded) =	29	

Total apron length $L_a = (L_1+L_j)$ = 43 ft

Width of the Apron Protection

$W = D_o + 4*L_a$

W = 302 ft

Provide Apron width = **310 ft**

Riprap Design – Channel Lining

By:_____ ____
Checked:_____ _____

Calculation of Riprap Size for Channel Lining

Calculations are based on Drainage Design Manual for Maricopa County (Manual)

Channel Name: North Channels 1A, 1B, and 2A
Design Flood Freque 100 -yr
Location/Station: Typical

Relevant Equations

$$d_{50} = \frac{0.001 V_a^3}{d_{avg}^{0.5} K_1^{1.5}}$$

$$K_1 = \left[1 - \frac{\sin^2\theta}{\sin^2\phi}\right]^{0.5}$$

Where,

d_{50} = Median diameter of the riprap materials, ft
V_a = Average velocity in the main channel, ft/s
d_{avg} = Average depth of flow in the main channel, ft
K_1 = Bank angle correction factor
θ = Bank angle with the horizontal, degree
ϕ = Riprap material's angle of repose, degree

Input Parameters

(Based on output from FlowMaster and based on the Manual)

V_a =	5.66	ft/s	*Note: There are different bed slopes for North Channels 1A, 1B, and 2A; The highest velocity was used for the calculation
d_{avg} =	3.03	ft	
D_{50} =	6	inch	Assume a D_{50} and then calculate if it is stable.
θ =	18.44	degree	[3:1 (H:V)]
ϕ =	41.0	degree	From Figure 6.14 of the Manual for rounded riprap - attached.

Hence,

K_1 =	0.88		
d_{50} =	0.12	ft	
d_{50} (inch) =	2	inch	<----D50 = 6 inches is stable.

Therefore, proposed design riprap size (d_{50}) = 6 inch

Page _____

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Date:_____

Calculation of Riprap Size for Channel Lining

Calculations are based on Drainage Design Manual for Maricopa County (Manual)

Channel Name: Interim Channel 2
Design Flood Freque 100 -yr
Location/Station: Typical

Relevant Equations

$$d_{50} = \frac{0.001 V_a^3}{d_{avg}^{0.5} K_1^{1.5}}$$

$$K_1 = \left[1 - \frac{\sin^2\theta}{\sin^2\phi}\right]^{0.5}$$

Where,

d_{50} =	Median diameter of the riprap materials, ft
V_a =	Average velocity in the main channel, ft/s
d_{avg} =	Average depth of flow in the main channel, ft
K_1 =	Bank angle correction factor
θ =	Bank angle with the horizontal, degree
ϕ =	Riprap material's angle of repose, degree

Input Parameters
(Based on output from FlowMaster and based on the Manual)

V_a =	5.76	ft/s	
d_{avg} =	3.4	ft	
D_{50} =	6	inch	Assume a D_{50} and then calculate if it is stable.
θ =	18.44	degree	[3:1 (H:V)]
ϕ =	41.0	degree	From Figure 6.14 of the Manual for rounded riprap - attached.

Hence,

K_1 =	0.88	
d_{50} =	0.13 ft	
d_{50} (inch) =	2 inch	<----D50 = 6 inches is stable.

Therefore, proposed design riprap size (d_{50}) = 6 inch

By:_____
Checked:_____

Calculation of Riprap Size for Channel Lining

Calculations are based on Drainage Design Manual for Maricopa County (Manual)

Channel Name: East Channel 1
Design Flood Freque 100 -yr
Location/Station: Typical

Relevant Equations

$$d_{50} = \frac{0.001 V_a^3}{d_{avg}^{0.5} K_1^{1.5}}$$

$$K_1 = \left[1 - \frac{\sin^2\theta}{\sin^2\phi}\right]^{0.5}$$

Where,

d_{50} =	Median diameter of the riprap materials, ft
V_a =	Average velocity in the main channel, ft/s
d_{avg} =	Average depth of flow in the main channel, ft
K_1 =	Bank angle correction factor
θ =	Bank angle with the horizontal, degree
ϕ =	Riprap material's angle of repose, degree

Input Parameters

(Based on output from FlowMaster and based on the Manual)

V_a =	6.11	ft/s	*Note: There are different bed slopes for North Channel 1; The highest velocity was used for the calculation
d_{avg} =	2.89	ft	
D_{50} =	6	inch	Assume a D_{50} and then calculate if it is stable.
θ =	18.44	degree	[3:1 (H:V)]
ϕ =	41.0	degree	From Figure 6.14 of the Manual for rounded riprap - attached.

Hence,

K_1 =	0.88		
d_{50} =	0.16 ft		
d_{50} (inch) =	2 Inch	<----D50 =	6 inches is stable.

Therefore, proposed design riprap size (d_{50}) = 6 inch

Page _____

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Date:_____

By:_____ ____
Checked:_____

Calculation of Riprap Size for Channel Lining

Calculations are based on Drainage Design Manual for Maricopa County (Manual)

Channel Name: East Channel 2
Design Flood Freque 100 -yr
Location/Station: Typical

Relevant Equations

$$d_{50} = \frac{0.001 V_a^3}{d_{avg}^{0.5} K_1^{1.5}}$$

$$K_1 = \left[1 - \frac{\sin^2\theta}{\sin^2\phi}\right]^{0.5}$$

Where,

d_{50} =	Median diameter of the riprap materials, ft
V_a =	Average velocity in the main channel, ft/s
d_{avg} =	Average depth of flow in the main channel, ft
K_1 =	Bank angle correction factor
θ =	Bank angle with the horizontal, degree
ϕ =	Riprap material's angle of repose, degree

Input Parameters
(Based on output from FlowMaster and based on the Manual)

V_a =	5.01	ft/s	
d_{avg} =	4.54	ft	
D_{50} =	6	inch	Assume a D_{50} and then calculate if it is stable.
θ =	18.44	degree	[3:1 (H:V)]
ϕ =	41.0	degree	From Figure 6.14 of the Manual for rounded riprap - attached.

Hence,

K_1 =	0.88	
d_{50} =	0.07 ft	
d_{50} (inch) =	1 inch	<----D50 = 6 inches is stable.

Therefore, proposed design riprap size (d_{50}) = 6 inch

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Date:_____

By:_____
Checked:_____

Calculation of Riprap Size for Channel Lining

Calculations are based on Drainage Design Manual for Maricopa County (Manual)

Channel Name: South Channel
Design Flood Freque 100 -yr
Location/Station: Typical

Relevant Equations

$$d_{50} = \frac{0.001 V_a^3}{d_{avg}^{0.5} K_1^{1.5}}$$

$$K_1 = \left[1 - \frac{\sin^2\theta}{\sin^2\phi}\right]^{0.5}$$

Where,

d_{50} =	Median diameter of the riprap materials, ft
V_a =	Average velocity in the main channel, ft/s
d_{avg} =	Average depth of flow in the main channel, ft
K_1 =	Bank angle correction factor
θ =	Bank angle with the horizontal, degree
ϕ =	Riprap material's angle of repose, degree

Input Parameters
(Based on output from FlowMaster and based on the Manual)

V_a =	6.45	ft/s	*Note: There are different bed slopes for the South Channel; The highest velocity was used for the calculation
d_{avg} =	3.09	ft	
D_{50} =	6	inch	Assume a D_{50} and then calculate if it is stable.
θ =	18.44	degree	[3:1 (H:V)]
ϕ =	41.0	degree	From Figure 6.14 of the Manual for rounded riprap - attached.

Hence,

K_1 =	0.88		(Obtained from Figure 6.13 -Attached)
d_{50} =	0.19	ft	
d_{50} (inch) =	3	inch	<----D50 = 6 inches is stable.

Therefore, proposed design riprap size (d_{50}) = **6 inch**

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Date:_____

Channel Scour for Toe-downs and Bends

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

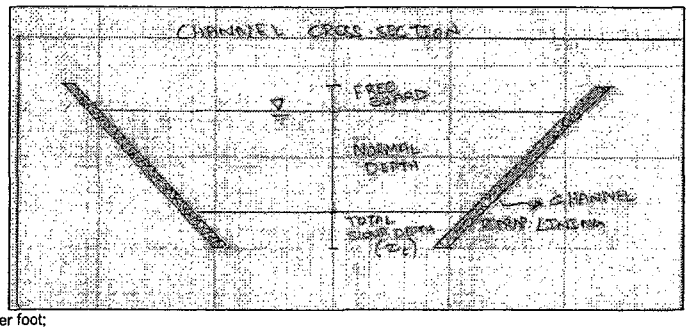
Channel: East Channel 1 Bend 1

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2$$ (Equation 6.25)

Where,

S_{eq} =	Equilibrium slope after urbanization, in feet per foot;
n =	Manning's roughness coefficient; and,
q =	Channel unit discharge, in cubic feet per second per foot;

General scour

$Z_{general}$ =

$$Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4}\ S_e^{0.3}} - 1\right]$$ Zeller Equation

Where,

Y_{max} =	Maximum depth of flow, ft
V_m =	Average velocity of flow, ft/s
Y_h =	Hydraulic depth of flow, = (flow area)/(top width)
S_e =	Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

Z_{bend} =

$$Y_{max}\ \frac{0.0685 V_m^{0.8}}{Y_h^{0.4}\ S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform}$ = $0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where,

d_h =	Dune of Antidune height, ft
Y_h =	Hydraulic depth, ft
V =	Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
1563	5.01	3.45	312.14	101.85	3.06	0.002	0.50	52	80	19.54	0.03	0.0009	853

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
0.97	0.09	0.00	2.35	0.13	1	1.3	5.90	6.00

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

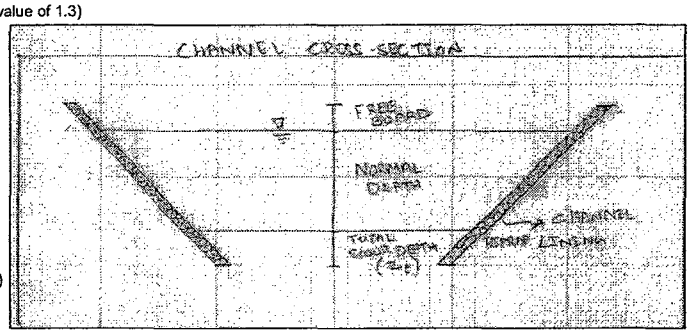
Channel: East Channel 1 Bend 2

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2 \qquad \text{(Equation 6.25)}$$

Where,

S_{eq} =	Equilibrium slope after urbanization, in feet per foot;
n =	Manning's roughness coefficient; and,
q =	Channel unit discharge, in cubic feet per second per foot;

General scour

$Z_{general}$ =

$$Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4}\ S_e^{0.3}} - 1\right] \qquad \text{Zeller Equation}$$

Where,

Y_{max} =	Maximum depth of flow, ft
V_m =	Average velocity of flow, ft/s
Y_h =	Hydraulic depth of flow, ft = (flow area)/(top width)
S_e =	Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

Z_{bend} =

$$Y_{max}\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4}\ S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform}$ = $0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where,

d_h =	Dune of Antidune height, ft
Y_h =	Hydraulic depth, ft
V =	Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
1563	5.01	3.45	312.14	101.85	3.06	0.002	0.50	45	80	19.54	0.03	0.0009	600

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
0.69	0.09	0.00	1.88	0.13	1	1.3	4.92	5.00

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

Channel: North Channels 1A Bend 3

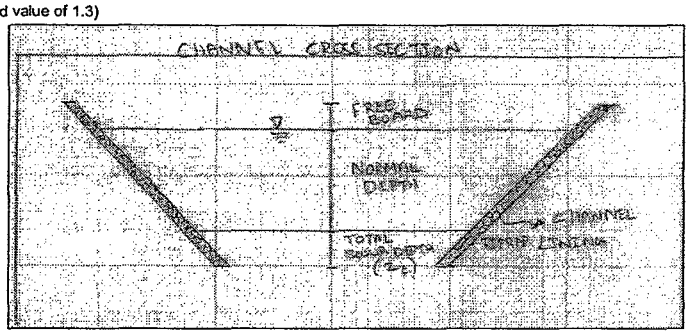
Channel: North Channels 1A, 2A, and 1B

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2 \quad \text{(Equation 6.25)}$$

Where,

S_{eq} =	Equilibrium slope after urbanization, in feet per foot;
n =	Manning's roughness coefficient; and,
q =	Channel unit discharge, in cubic feet per second per foot;

General scour

$$Z_{general} = Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}} - 1\right] \quad \text{Zeller Equation}$$

Where,

Y_{max} =	Maximum depth of flow, ft
V_m =	Average velocity of flow, ft/s
Y_h =	Hydraulic depth of flow, ft = (flow area)/(top width)
S_e =	Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

$$Z_{bend} = Y_{max}\frac{0.0685 V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform} = 0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where,

d_h =	Dune of Antidune height, ft
Y_h =	Hydraulic depth, ft
V =	Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
659	4.63	3.51	142.30	91.06	2.79	0.002	0.49	45	30	21.97	0.03	0.0008	2793

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
3.25	0.00	0.00	1.87	0.11	1	1.3	8.11	8.50

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

Channel: North Channels 1B Bend 4

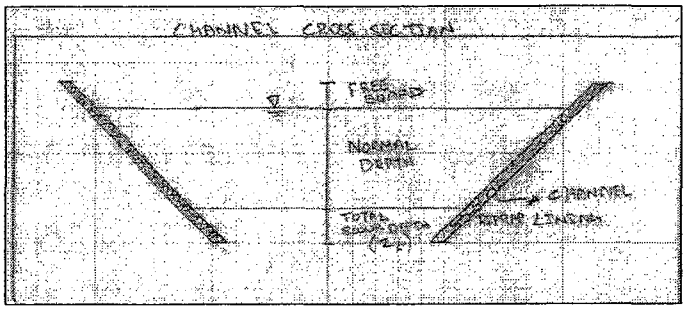
Channel: North Channels 1A, 2A, and 1B

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2$$ (Equation 6.25)

Where, S_{eq} = Equilibrium slope after urbanization, in feet per foot;
n = Manning's roughness coefficient; and,
q = Channel unit discharge, in cubic feet per second per foot;

General scour

$Z_{general}$ = $$Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}} - 1\right]$$ Zeller Equation

Where, Y_{max} = Maximum depth of flow, ft
V_m = Average velocity of flow, ft/s
Y_h = Hydraulic depth of flow, ft = (flow area)/(top width)
S_e = Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

Z_{bend} = $$Y_{max}\frac{0.0685 V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform}$ = $0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where, d_h = Dune of Antidune height, ft
Y_h = Hydraulic depth, ft
V = Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops *
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
659	4.63	3.51	142.30	51.06	2.79	0.002	0.49	33	30	21.97	0.03	0.0008	315

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
0.37	0.00	0.00	1.10	0.11	1	1.3	3.36	3.50

* The length for the long term scour was measured between starting of the channel curve and culvert inlet

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

Channel: North Channels 2A Bend 5

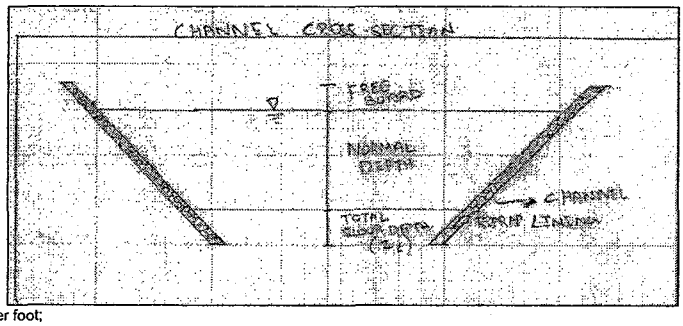
Channel: North Channels 1A, 2A, and 1B

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2$$ (Equation 6.25)

Where, S_{eq} = Equilibrium slope after urbanization, in feet per foot;
n = Manning's roughness coefficient; and,
q = Channel unit discharge, in cubic feet per second per foot;

General scour

$Z_{general}$ = $$Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}} - 1\right]$$ Zeller Equation

Where, Y_{max} = Maximum depth of flow, ft
V_m = Average velocity of flow, ft/s
Y_h = Hydraulic depth of flow, ! = (flow area)/(top width)
S_e = Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

Z_{bend} = $$Y_{max}\frac{0.0685 V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform}$ = $0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where, d_h = Dune of Antidune height, ft
Y_h = Hydraulic depth, ft
V = Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops *
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
659	4.63	3.51	142.30	51.06	2.79	0.002	0.49	43	30	21.97	0.03	0.0008	870

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
1.01	0.00	0.00	1.74	0.11	1	1.3	5.03	5.50

* The length for the long term scour was measured between culvert outlet and end of channel curve at Interim Channel 1

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

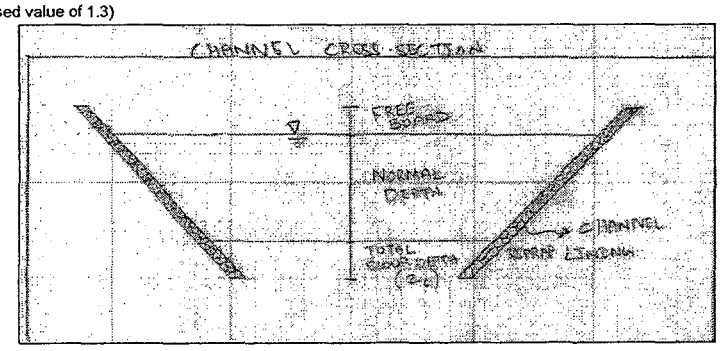
Channel: South Channel Bend 6

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\,n}{q^{0.11}}\right]^2$$ (Equation 6.25)

Where,

S_{eq} =	Equilibrium slope after urbanization, in feet per foot;
n =	Manning's roughness coefficient; and,
q =	Channel unit discharge, in cubic feet per second per foot;

General scour

$Z_{general}$ =

$$Y_{max}\left[\frac{0.0685\,V_m^{0.8}}{Y_h^{0.4}S_e^{0.3}} - 1\right]$$ Zeller Equation

Where,

Y_{max} =	Maximum depth of flow, ft
V_m =	Average velocity of flow, ft/s
Y_h =	Hydraulic depth of flow, = (flow area)/(top width)
S_e =	Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

Z_{bend} =

$$Y_{max}\frac{0.0685\,V_m^{0.8}}{Y_h^{0.4}S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform}$ = $0.5\,d_h$

$d_h = 0.066\,Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27\,V^2$ (for antidune height calculation)

Where,

d_h =	Dune of Antidune height, ft
Y_h =	Hydraulic depth, ft
V =	Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
1923	5.38	3.90	357.33	130.38	2.74	0.002	0.51	28	100	19.23	0.03	0.0009	346

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
0.39	0.53	0.00	0.98	0.11	1	1.3	3.91	4.00

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

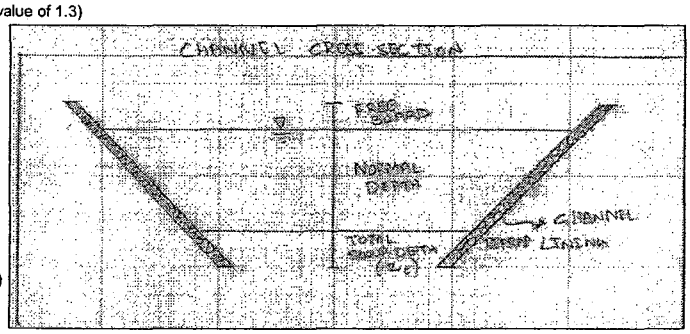
Channel: East Channel 2 Bend 7

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\,n}{q^{0.11}}\right]^2 \qquad \text{(Equation 6.25)}$$

Where,

S_{eq} =	Equilibrium slope after urbanization, in feet per foot;
n =	Manning's roughness coefficient; and,
q =	Channel unit discharge, in cubic feet per second per foot;

General scour

$$Z_{general} = Y_{max}\left[\frac{0.0685\,V_m^{0.8}}{Y_h^{0.4}\,S_e^{0.3}} - 1\right] \qquad \text{Zeller Equation}$$

Where,

Y_{max} =	Maximum depth of flow, ft
V_m =	Average velocity of flow, ft/s
Y_h =	Hydraulic depth of flow, ft = (flow area)/(top width)
S_e =	Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

$$Z_{bend} = Y_{max}\frac{0.068\,V_m^{0.8}}{Y_h^{0.4}\,S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform} = 0.5\,d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27\,V^2$ (for antidune height calculation)

Where,

d_h =	Dune of Antidune height, ft
Y_h =	Hydraulic depth, ft
V =	Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
4857	5.01	4.54	969.26	227.22	4.27	0.001	0.43	45	80	60.71	0.03	0.0007	2396

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
1.51	0.10	0.00	2.47	0.19	1	1.3	6.86	7.00

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

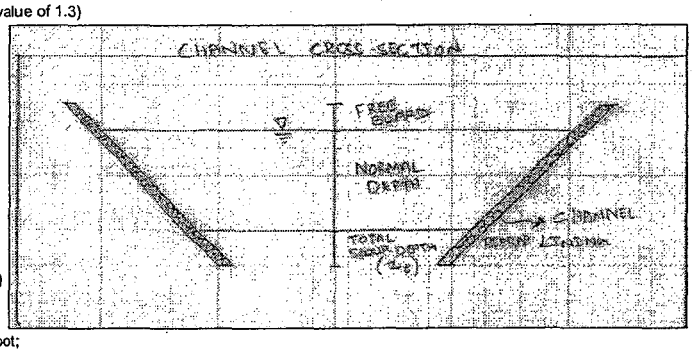
Channel: East Channel 2 Bend 8

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2$$ (Equation 6.25)

Where, S_{eq} = Equilibrium slope after urbanization, in feet per foot;
n = Manning's roughness coefficient; and,
q = Channel unit discharge, in cubic feet per second per foot;

General scour

$Z_{general}$ = $$Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4}\ S_e^{0.3}} - 1\right]$$ Zeller Equation

Where, Y_{max} = Maximum depth of flow, ft
V_m = Average velocity of flow, ft/s
Y_h = Hydraulic depth of flow, ft = (flow area)/(top width)
S_e = Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

Z_{bend} = $$Y_{max}\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4}\ S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform}$ = $0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where, d_h = Dune of Antidune height, ft
Y_h = Hydraulic depth, ft
V = Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft: of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
4857	5.01	4.54	969.26	227.22	4.27	0.001	0.43	45	200	24.29	0.03	0.0008	4179

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
2.02	0.10	0.00	2.47	0.19	1	1.3	7.51	8.00

Date:_____

By:_____
Checked:_____

Channel Scour Calculation for Toe-down Riprap Design @ Bends

(Calculations are based on Maricopa County Hydraulic Design Manual & City of Tuscon Drainage Design Manual)

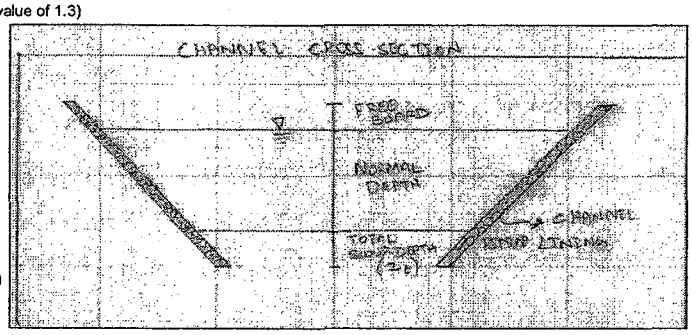
Channel: East Channel 2 Bend 9

Location: Typical

Total Scour, $Z_t = FS(Z_{long-term} + Z_{general} + Z_{local} + Z_{bend} + Z_{bedform} + Z_{low-flow})$

Where,

FS =	Factor of Safety (with the most commonly used value of 1.3)
$Z_{long-term}$ =	Long-term scour
$Z_{general}$ =	General scour
Z_{local} =	Local scour
Z_{bend} =	Bend scour
$Z_{bedform}$ =	Bedform scour
$Z_{low-flow}$ =	Low-flow scour



Equations for each scour component

Long-term scour (City of Tucson Drainage Design Manual)

$$Seq = \left[\frac{1.45\ n}{q^{0.11}}\right]^2 \qquad \text{(Equation 6.25)}$$

Where,
S_{eq} = Equilibrium slope after urbanization, in feet per foot;
n = Manning's roughness coefficient; and,
q = Channel unit discharge, in cubic feet per second per foot;

General scour

$$Z_{general} = Y_{max}\left[\frac{0.0685\ V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}} - 1\right] \qquad \text{Zeller Equation}$$

Where,
Y_{max} = Maximum depth of flow, ft
V_m = Average velocity of flow, ft/s
Y_h = Hydraulic depth of flow, ft = (flow area)/(top width)
S_e = Energey slope (equals bed slope for uniform flow condition), ft/ft

Local scour

Z_{local} = N/A (scour for bridge/culvert, calculated separately where appropriate)

Bend scour

$$Z_{bend} = Y_{max}\frac{0.0685 V_m^{0.8}}{Y_h^{0.4} S_e^{0.3}}\left(2.1\left[\frac{\sin^2(\alpha/2)}{\cos\alpha}\right]^{0.2} - 1\right)$$

Where, α = Angle between point of curvature and channel centerline
(Refer to Figure 6.3, Page 6.12 of City of Tuscon Drainage Manual)

Bedform scour

$Z_{bedform} = 0.5 d_h$

$d_h = 0.066\ Y_h^{1.21}$ (for dune height calculation)

$d_h = 0.27 V^2$ (for antidune height calculation)

Where,
d_h = Dune of Antidune height, ft
Y_h = Hydraulic depth, ft
V = Channel average velocity, ft/s

Low-flow scour

$Z_{low-flow}$ = 1 ft. of scour (based on the nature and size of the watercourse)

Input Data: (Output from FlowMaster)

Discharge Q, 100yr	Average Velocity, V_m	Maximum Depth, Y_{max}	Flow Area	Top Width	Hydraulic Depth, Y_h	Energy Slope, S_e	Froude Number	Bend Angle, α	Bottom Width	Channel Unit Discharge, q	Manning's Roughness, n	Equilibrium Slope, S_{eq}	Longest length between drops
cfs	ft./sec.	ft.	sq. ft.	ft.	ft.	ft./ft.		degrees	ft.	$ft^3/s/ft$		ft/ft	ft
4857	5.01	4.54	969.26	227.22	4.27	0.001	0.43	30	200	24.29	0.03	0.0008	2396

Scour Calculation:

$Z_{long-term}$	$Z_{general}$	Z_{local}	Z_{bend}*	$Z_{bedform}$	$Z_{low-flow}$	F.S.	Total Scour Depth, Zt	Scour depth (Rounded)
ft.	ft.	ft.	ft.	ft.	ft.		ft.	ft.
1.16	0.10	0.00	1.20	0.19	1	1.3	4.74	5.00

Date:_____

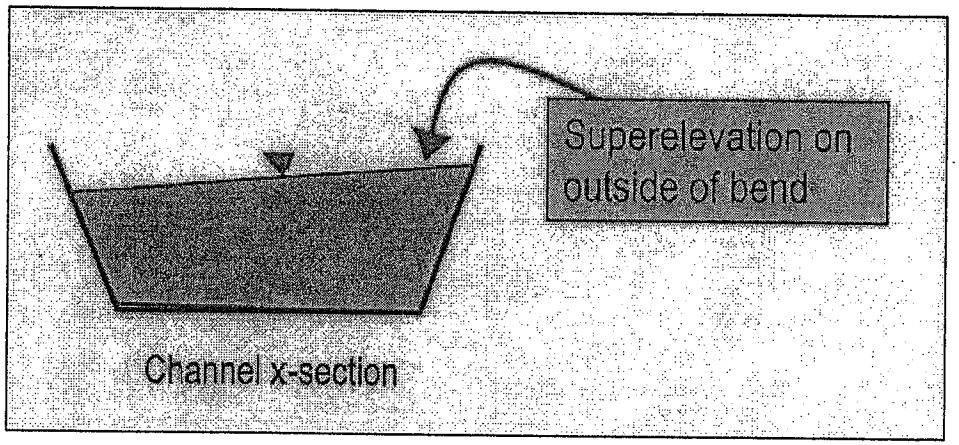
Super Elevation Calculation

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 1 East Channel 1

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.01 ft/sec
T =	100.73 ft
g =	32.2 ft/sec^2
r_c =	300 ft

Δy = 0.13 ft

Date:_____

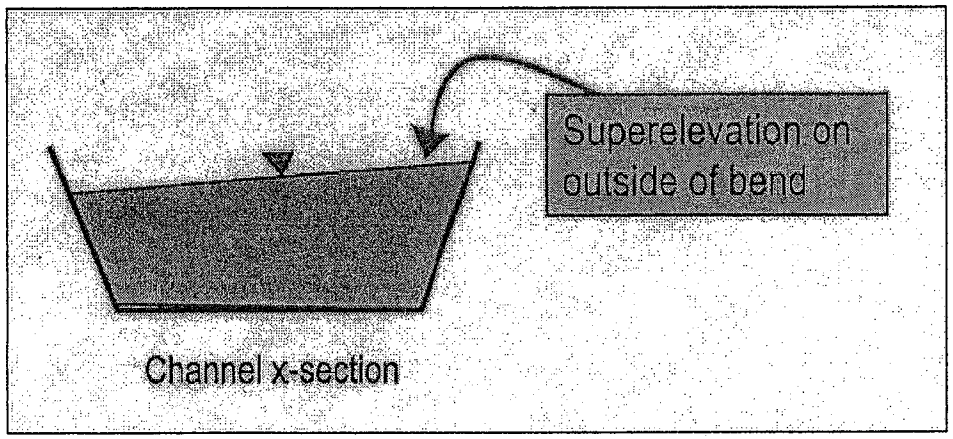
Super Elevation Calculation for Bend

(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 2 East Channel 1

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.01 ft/sec
T =	100.73 ft
g =	32.2 ft/sec^2
r_c =	300 ft

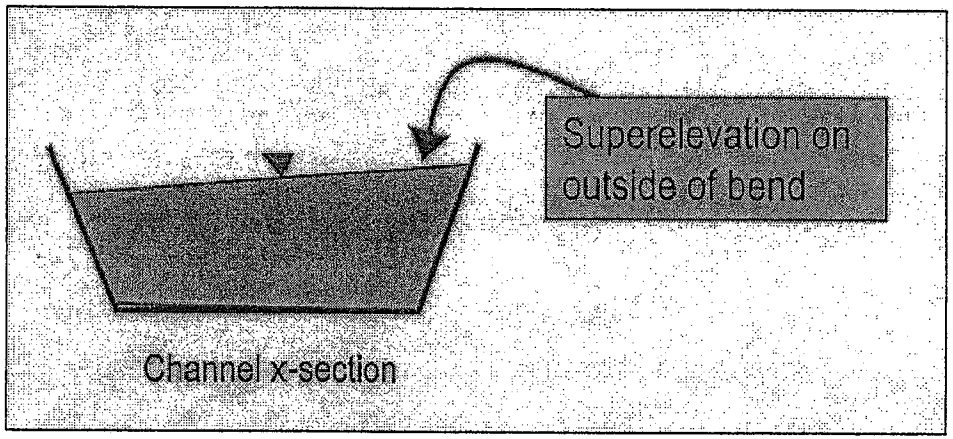
Δy = 0.13 ft

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 3 East Channel 2

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.01 ft/sec
T =	227.22 ft
g =	32.2 ft/sec^2
r_c =	300 ft

Δy = 0.30 ft

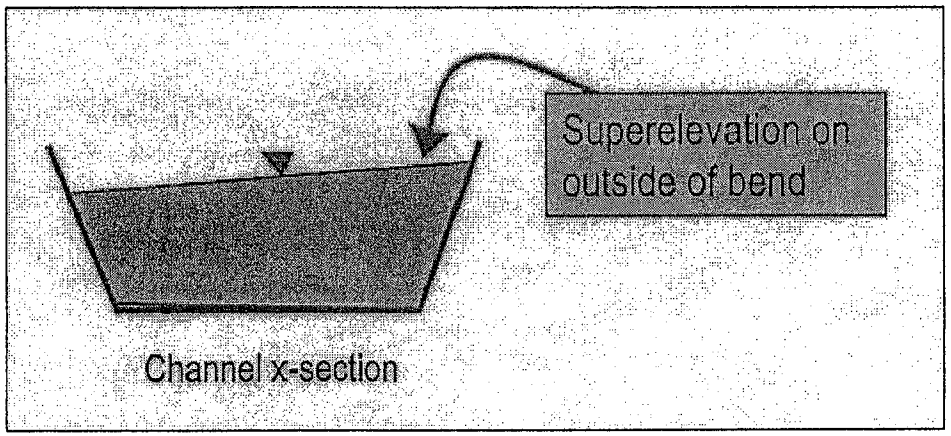
Date:_____

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 4 East Channel 2

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.01 ft/sec
T =	227.22 ft
g =	32.2 ft/sec^2
r_c =	600 ft

Δy = 0.15 ft

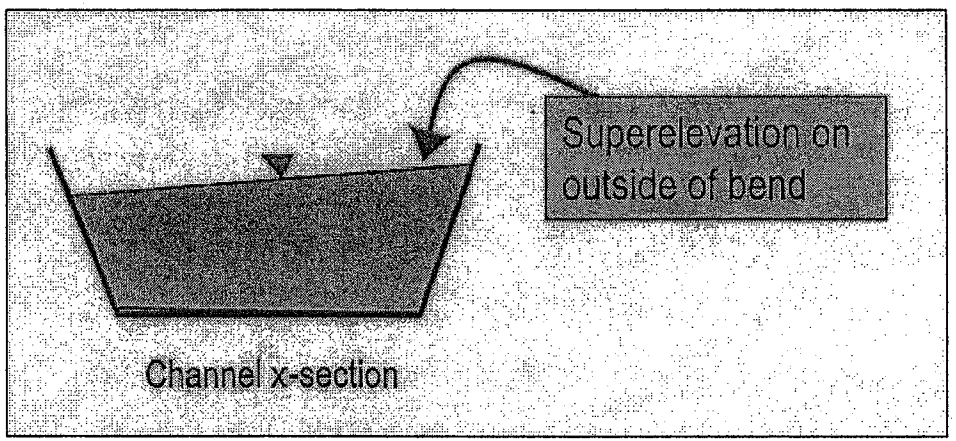
Super Elevation Calculation for Bend

(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 5 East Channel 2

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.01 ft/sec
T =	227.22 ft
g =	32.2 ft/sec^2
r_c =	600 ft

Δy = 0.15 ft

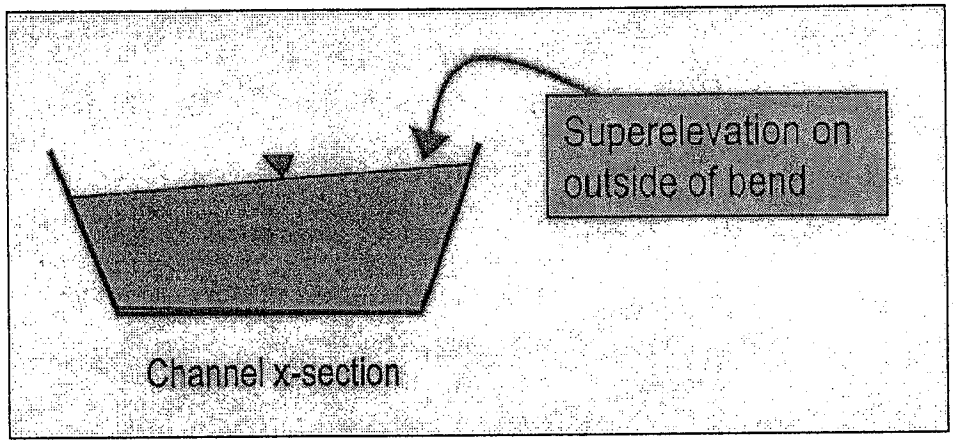
Date:_____

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 6 North Channel 1A

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.5 ft/sec
T =	48.83 ft
g =	32.2 ft/sec^2
r_c =	160 ft

Δy = 0.14 ft

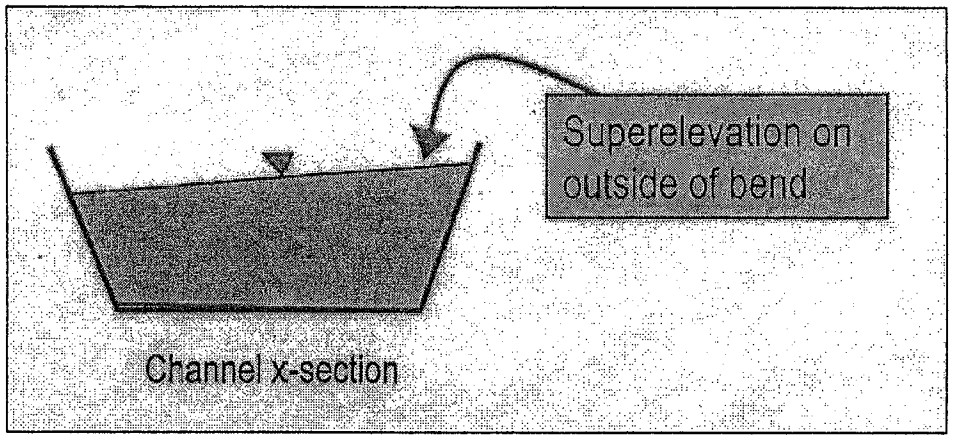
Date:_____

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 7 North Channel 2A

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.33 ft/sec
T =	48.83 ft
g =	32.2 ft/sec^2
r_c =	160 ft

Δy = 0.13 ft

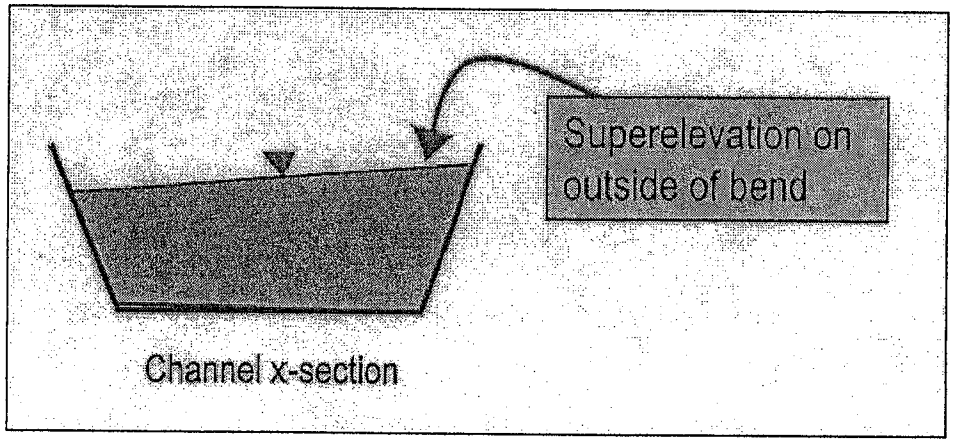
Date:_____

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 8 North Channel 2A

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.56 ft/sec
T =	48.19 ft
g =	32.2 ft/sec^2
r_c =	160 ft

Δy = 0.14 ft

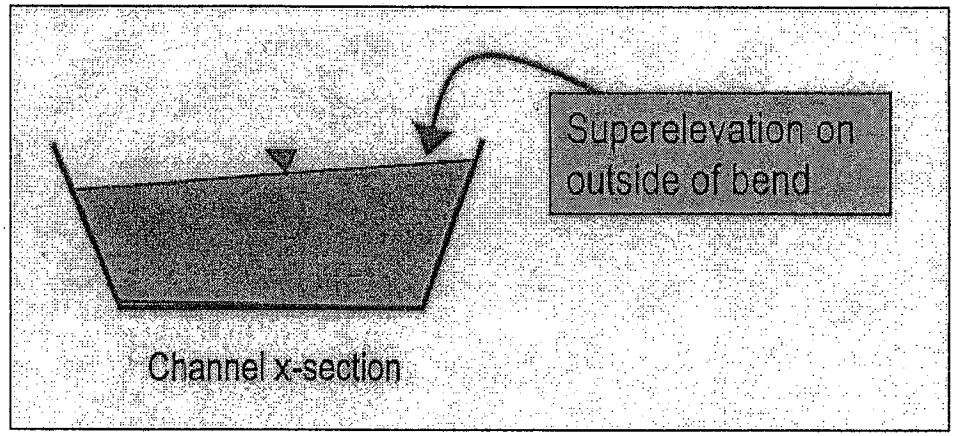
Date:_____

Super Elevation Calculation for Bend
(Calculations are based on Maricopa County Hydraulics Manual)

Channel: Bend 9 South Channel

Superelevation

$$\Delta y = \left[\frac{V^2 T}{2 g r_c} \right]$$



Where,

Δy =	Difference in water surface elevation, ft (Inside vs. outside of curve)
V =	Mean velocity, (ft/sec)
T =	Top width of the water surface (ft)
g =	gravitational constant (32.2 ft/sec^2)
r_c =	radius of curvature (ft)

Input:

V =	5.3 ft/sec
T =	122.22 ft
g =	32.2 ft/sec^2
r_c =	360 ft

Δy = 0.15 ft

Date:_____

Splash Pad Design

Riprap Calculation at Existing Culvert:

$$D_{50} = 0.2D\left(\frac{Q}{\sqrt{g}D^{2.5}}\right)^{4/3}\left(\frac{D}{TW}\right)$$

Where,

D_{50} = riprap size (ft)
Q = design discharge, 659/8 = 82 cfs
D = culvert diameter (circular), 60 in = 5 ft
TW = tailwater depth, 2.57 ft
g = acceleration due to gravity, 32.2 ft/s^2

$$D_{50} = 0.2(5)\left(\frac{82}{\sqrt{32.2}(5)^{2.5}}\right)^{4/3}\left(\frac{5}{2.57}\right)$$

$$D_{50} = (1)*(0.165)*(1.945)$$

$$D_{50} = 0.32\,ft$$

$$\boxed{D_{50} = 6in}$$

Recommended thickness of the Riprap layer : $2*D_{50}$

=2 * 6 in

$$\boxed{= 12 \text{ in}}$$

Length of the riprap required downstream of Culvert L_B= 4D

$$= 4*5\,ft$$

$$\boxed{= 20\,ft}$$

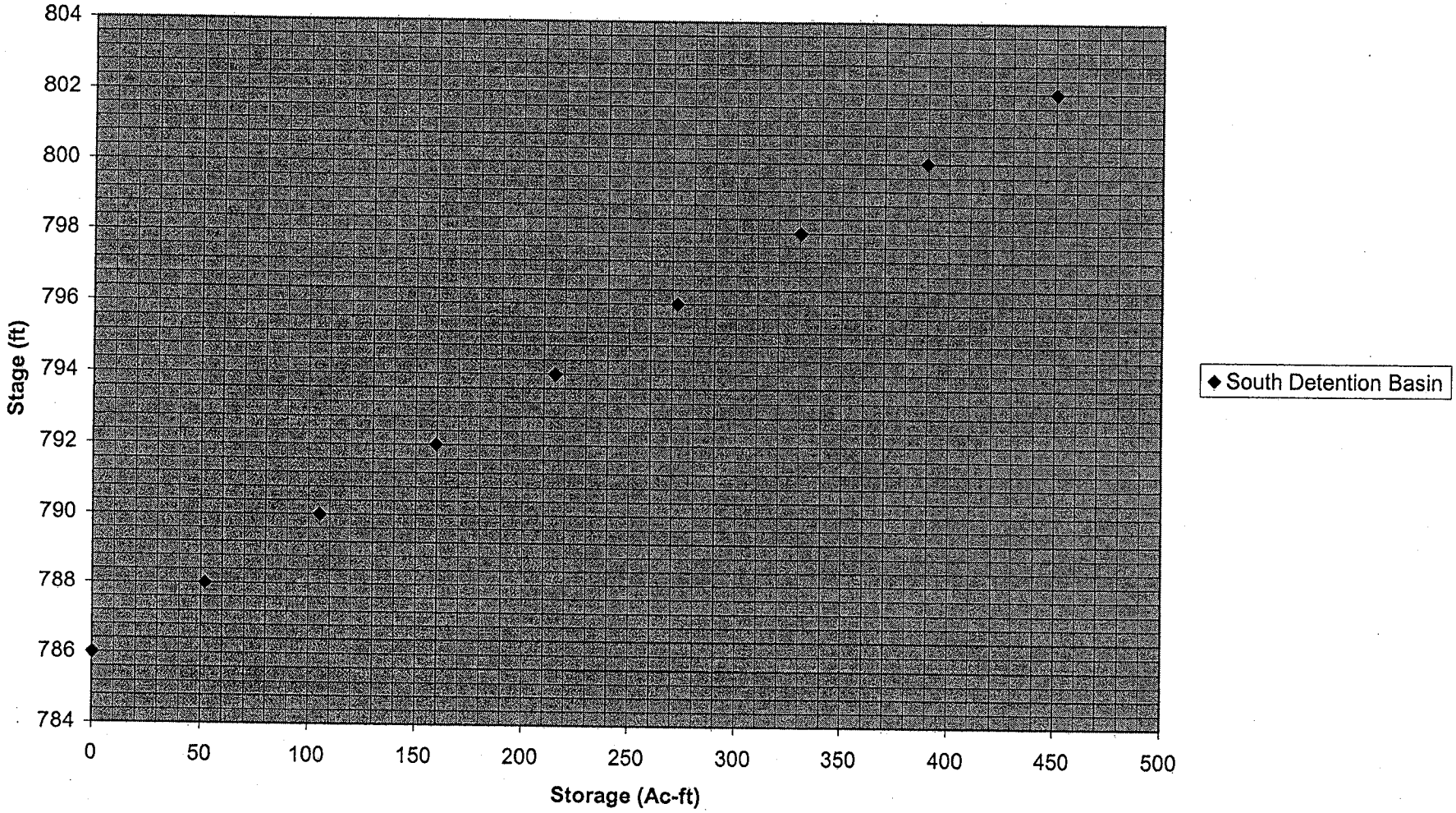
Storage Basin Calculations

South Storage Basin - Volume Calculations

Storage Basin Elevation	Basin Area (sq. ft.)	Basin Area (ac)	Basin Volume *(1) (ac-ft)	Cumaltive Volume (ac-ft)
786	1,120,079	25.71	0	0
788	1,146,126	26.31	52.0	52.0
790	1,172,409	26.91	53.2	105.2
792	1,198,929	27.52	54.4	159.7
794	1,225,686	28.14	55.7	215.3
796	1,252,680	28.76	56.9	272.2
798	1,279,911	29.38	58.1	330.4
800	1,307,379	30.01	59.4	389.8
802	1,335,083	30.65	60.7	450.4

Notes: (1) The volume was calculated using the conic equation.

South Detention Basin
Stage vs Storage

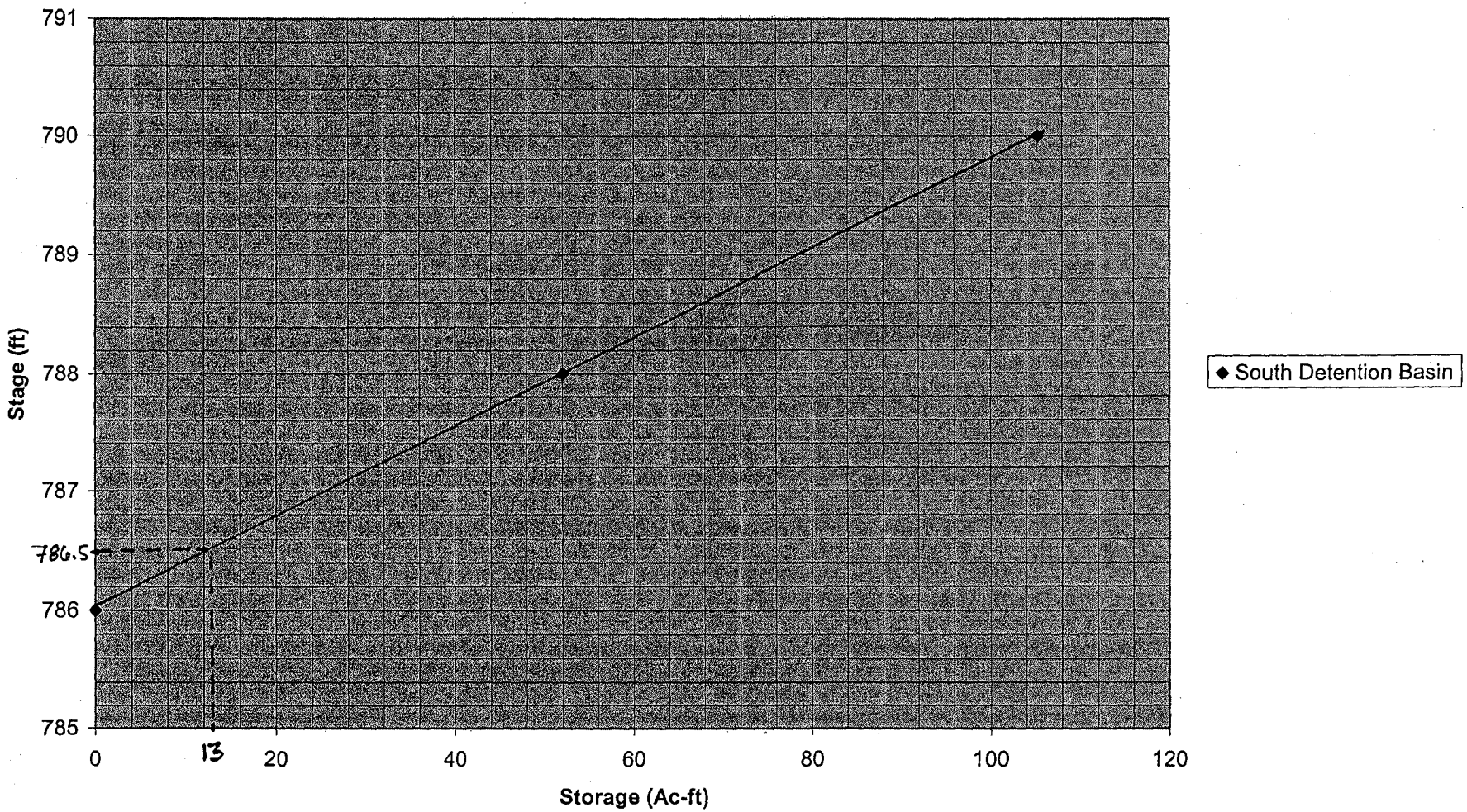


South Storage Basin
First Flush Volume Calculation

Disturbed Area from Landfill Cells = 310 Ac
First Flush Volume Required = 310 Ac * [(0.5")*1'/12"] = 12.92 Ac-ft

First Flush Volume Provided = 13 Ac-Ft (See Chart 2)

South Detention Basin
Stage vs Storage
First Flush Volume



HEC-RAS Version 3.1.3 May 2005
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: South Basin Time Calculation_070209
Project File : Southbasin.prj
Run Date and Time: 7/2/2008 11:28:09 AM

Project in English units

PLAN DATA

Plan Title: South Basin Empying Time Calculation
Plan File :
`WRES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\Hydraulics\Landfill_Alt_4\H
:AS\Southbasin.p01

Geometry Title: Soth Basin with Esat and South Channels
Geometry File :
p:\WRES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\Hydraulics\Landfill_Alt_4\H
EC-RAS\Southbasin.g01

Flow Title :
Flow File :

Plan Summary Information:

Number of:	Cross Sections =	2	Multiple Openings =	0
	Culverts =	0	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.01
Critical depth calculation tolerance =	0.01
Maximum number of iterations =	20
Maximum difference tolerance =	0.3
Flow tolerance factor =	0.001

Computation Options

Critical depth computed only where necessary	
Conveyance Calculation Method:	At breaks in n values only
Friction Slope Method:	Average Conveyance
Computational Flow Regime:	Subcritical Flow

OMETRY DATA

Geometry Title: Soth Basin with Esat and South Channels
Geometry File :
p:\WRES\City_of_Phoenix\23444155_SR85_Perimeter_Drainage\Hydraulics\Landfill_Alt_4\HEC-RAS\Southbasin.g01

CROSS SECTION

RIVER: East Channels
REACH: Main Reach RS: 2

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	800	50	795	250	790	300	786	350	786
400	790	600	795	650	800				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	250	.04	400	.06

Bank Sta: Left 250 Right 400 Lengths: Left 50 Channel 50 Right 50 Coeff Contr. .1 Expan. .3

CROSS SECTION

RIVER: East Channels
REACH: Main Reach RS: 1

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	800	50	795	250	790	300	786	350	786
400	790	600	795	650	800				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	250	.04	400	.06

Bank Sta: Left 250 Right 400 Coeff Contr. .1 Expan. .3

STORAGE AREA: South Basin
Volume Method : Rating Curve

Elevation	Volume
786	0
788	52
790	105.2
792	159.7
794	215.3
796	272.2
798	330.4
800	389.8
802	450.4

ORAGE AREA: South Channel
lume Method : Area times depth
Area : 1E+07
Min Elev : 785

CONNECTION: Low Flow Struct

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Circular	2	

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
1		110	.024	.024	0	.5	

Upstream Elevation = 786
Centerline Station = 340.5
Downstream Elevation = 785.78
Centerline Station = 340.5

SUMMARY OF MANNING'S N VALUES

River:East Channels

Reach	River Sta.	n1	n2	n3
Main Reach	2	.06	.04	.06
Main Reach	1	.06	.04	.06

SUMMARY OF REACH LENGTHS

River: East Channels

Reach	River Sta.	Left	Channel	Right
Main Reach	2	50	50	50
Main Reach	1			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: East Channels

Reach	River Sta.	Contr.	Expan.
Main Reach	2	.1	.3
Main Reach	1	.1	.3

ofile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.
E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	
			(cfs)	(ft)	(ft)	(ft)
(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		
Main Reach	2	Max WS	0.00	786.00	790.00	
790.00	0.000000	0.00	399.86	149.98	0.00	
Main Reach	1	Max WS	1.34	786.00	790.00	786.02
790.00	0.000000	0.00	400.00	150.00	0.00	

Profile Output Table - Standard Table 2

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn
Loss C & E Loss	Q Left	Q Channel	Q Right	Top Width		
			(ft)	(ft)	(ft)	
(ft) (ft)	(cfs)	(cfs)	(cfs)	(ft)		
Main Reach	2	Max WS	790.00	790.00	0.00	
0.00		0.00		149.98		
Main Reach	1	Max WS	790.00	790.00	0.00	
		1.34		150.00		

Culvert Calculator Report
South Storage Basin Low Flow Outlet

For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	802.00	ft	Headwater Depth/Height	7.92	
Computed Headwater Elev	801.85	ft	Discharge	120.00	cfs
Inlet Control HW Elev.	801.85	ft	Tailwater Elevation	785.00	ft
Outlet Control HW Elev.	797.71	ft	Control Type	Inlet Control	

Grades					
Upstream Invert	786.00	ft	Downstream Invert	785.80	ft
Length	20.00	ft	Constructed Slope	0.010000	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	1.99	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	1.99	ft
Velocity Downstream	19.11	ft/s	Critical Slope	0.066360	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	2.00	ft
tion Size	24 inch		Rise	2.00	ft
nber Sections	2				

Outlet Control Properties					
Outlet Control HW Elev.	797.71	ft	Upstream Velocity Head	5.67	ft
Ke	0.50		Entrance Loss	2.83	ft

Inlet Control Properties					
Inlet Control HW Elev.	801.85	ft	Flow Control	N/A	
Inlet Type	Square edge w/headwall		Area Full	6.3	ft^2
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Rating Table Report
South Storage Basin Low Flow Outlet

ıge Data:

	Minimum	Maximum	Increment	
Allowable HW E	786.00	802.00	1.00	ft

HW Elev. (ft)	Discharge (cfs)
786.00	0.00
787.00	6.85
788.00	23.26
789.00	40.70
790.00	51.46
791.00	60.34
792.00	68.06
793.00	74.99
794.00	81.34
795.00	87.22
796.00	92.74
797.00	97.94
798.00	102.88
799.00	107.59
800.00	112.11
801.00	116.45
802.00	120.63

APPENDIX C

404 PERMITTING

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
ARIZONA-NEVADA AREA OFFICE
3636 NORTH CENTRAL AVENUE, SUITE 900
PHOENIX, ARIZONA 85012-1939

REPLY TO
Office of the Chief
Regulatory Branch

June 30, 2003

Mr. Ron Serio
City of Phoenix
Public Works Department
101 South Central Avenue, Suite 300
Phoenix, Arizona 85004

File Number: 2003-00765-AP

Dear Mr. Serio:

Reference is made to your application and/or letter of March 17, 2003 in which you inquired as to whether or not a Section 404 permit is required from the U.S. Army Corps of Engineers regarding your proposed construction of a municipal landfill located on approximately 2,652 acres of land in Sections 8, 9, 10, 15, 16, 17, 21, and 22, T3S, R4W, Town of Buckeye, Maricopa County, Arizona. The proposed landfill site is bounded on the north by Patterson Road, on the west by the Gila Bend Canal, on the east by State Route 85, and on the south by undeveloped land.

Based on the information furnished in your application and/or letter (referenced above), we have determined that your proposed project is not subject to our jurisdiction under Section 404 of the Clean Water Act. Since there are no waters of the United States within the aforementioned proposed project area, no Section 404 permit is required from our office.

The receipt of your application and/or letter is appreciated. If you have questions, please contact Ann Palaruan at (602) 640-5385 x 227.

Sincerely,

Cindy Lester

Cindy Lester P.E.
Chief, Arizona Section
Regulatory Branch

Copy furnished:

Ms. Wendy Wonderley
City of Phoenix
101 South Central Avenue, Suite 300
Phoenix, Arizona 85004