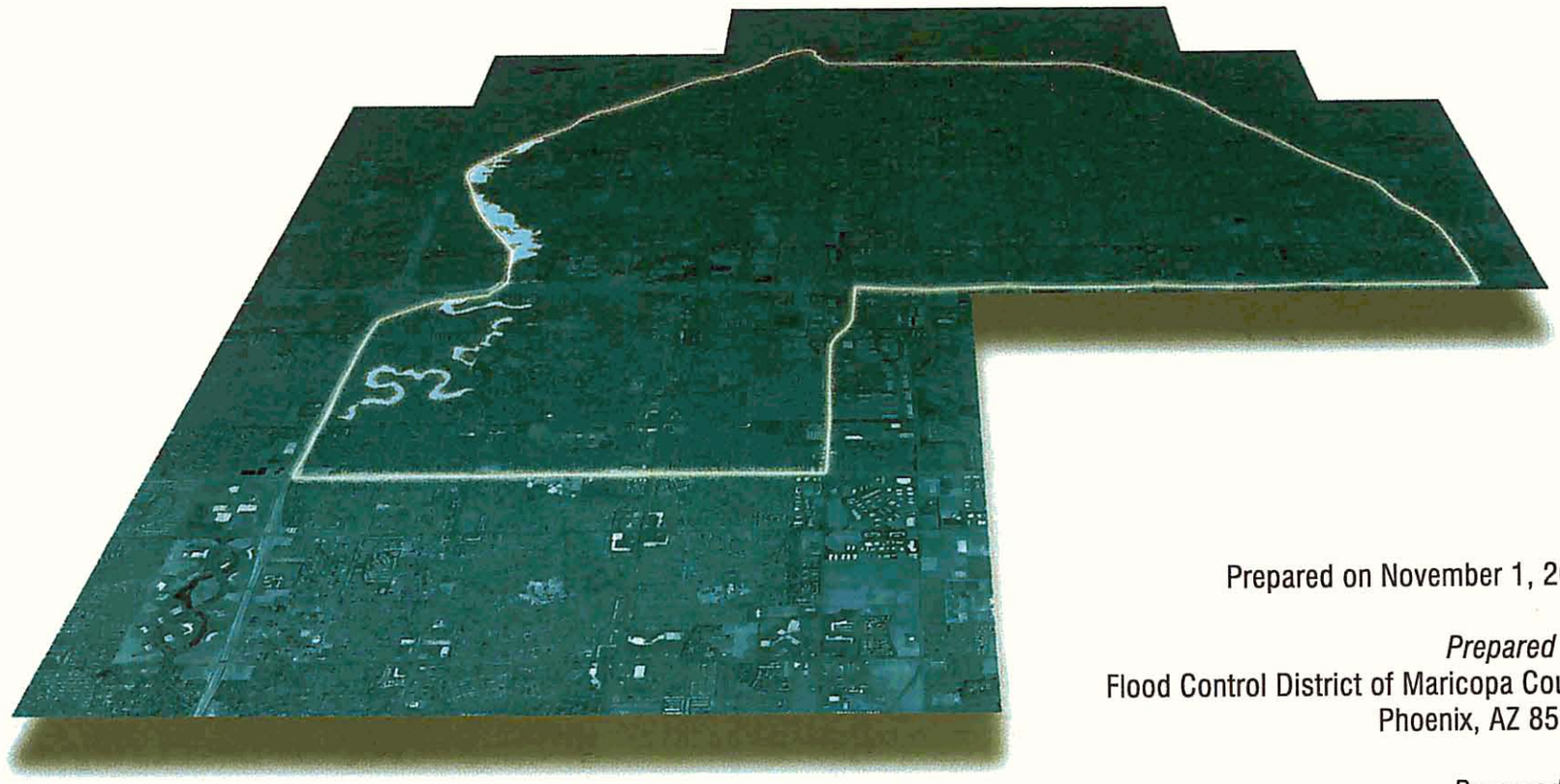
TEMPE CANAL FLOODPLAIN DELINEATION STUDY (FCD 2002-22)

TECHNICAL DATA NOTEBOOK - VOLUME 2 OF 2



Prepared on November 1, 2006

Prepared for:
Flood Control District of Maricopa County
Phoenix, AZ 85009

Prepared by:
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201 West Indian School Road
Phoenix, AZ 85013
(602) 252.8384

In association with:
Coe & Van Loo Consultants, Inc.
4550 North 12th Street
Phoenix, AZ 85014
(602) 264.6831

Flood Control District of Maricopa County

Hoskin • Ryan Consultants
creative engineering solutions

CVL

TEMPE CANAL
FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

TECHNICAL DATA NOTEBOOK
VOLUME 2 OF 2

November 1, 2006

Prepared for:

Flood Control District of Maricopa County
2801 West Durango Street
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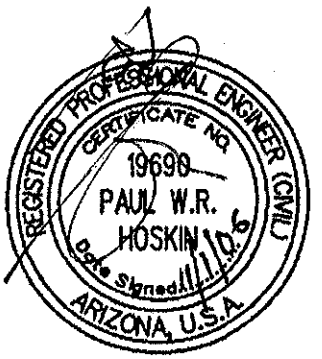
(602) 506-1501



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TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

TECHNICAL DATA NOTEBOOK – VOLUME 2 OF 2
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Note: Erosion and sediment transport analysis is not covered by the scope of this study, therefore Appendix F is not included in the Technical Data Notebook.

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1 Introduction

Hoskin•Ryan Consultants, Inc. (HRC), in association with Coe and Van Loo Consultants, Inc. (CVL), has been contracted by the Flood Control District of Maricopa County (FCDMC) to conduct a floodplain delineation re-study of the existing FEMA Zone A floodplain delineation along the Tempe Canal, from approximately Main Street to the Western Canal. The purpose of the re-study is to determine, by detailed methods, the extent of potential flooding along the east side of the Tempe Canal. This flooding results from the concentration of runoff along the eastern side of the canal. The resulting floodplain delineation will be submitted to the Federal Emergency Management Agency (FEMA) for the purpose of obtaining a Letter of Map Revision (LOMR).

1.1 Authority for Study

The Flood Control District of Maricopa County's contract number is FCD 2002 C022. The official Notice to Proceed date is March 6, 2003. The FCDMC project manager is Michael Duncan, PE, CFM.

1.2 Location of Study

The study area encompasses approximately twenty-six (26) square miles of the City of Mesa, within Maricopa County, and is located within Township 1 North, Range 5 East and 6 East, and Township 1 South, Range 5 East, of the Gila River Base and Meridian. See Figures 1 and 2.

The Tempe Canal is located along the border between the cities of Tempe and Mesa. The current FEMA Zone A floodplain delineation extends along the eastern side of the Tempe Canal, from approximately Main Street to the Western Canal (Figure 3).

1.3 Methodology Summary

Hydrology for the approximately 26 square-mile watershed contributing to the Tempe Canal floodplain was developed using the U.S. Army Corps of Engineers *HEC-1 Version 4.1* software, dated June 1998. Based upon topography and physical barriers, the study area was divided into three watersheds; the 100, 200, and 300 Watersheds (Figure 4). The 400 Watershed was created outside of the study boundary in order to correctly model inflows to the 300 Watershed from the east.

Each watershed was then divided into sub-basins based on existing topographic mapping and field observations. Sub-basin parameters were gathered from a combination of field observation and existing land use and soils maps. The FCDMC *Drainage Design Management System Version 2.1.0* software, dated October 11, 2002, was then used to generate the sub-basin HEC-1 data. Field observation and gathered reference materials were used to quantify retention storage, and street and pipe flow routing and diversions. One HEC-1 model, covering the entire study area, was created for each of the 100-year, 6-hour and 100-year, 24-hour rainfall events. Refer to *Technical Data Notebook, Volume 1 of 2,* Section 4 for descriptions of the hydrologic modeling methods.

Since the study area is predominantly urban, the drainage patterns are influenced by both topography and the gridded street network. The downstream intersection of north-south and east-west streets was assumed to be a point of flow concentration. At the intersecting streets, flow was split according to the general street gradient in each direction. Normal depth computations were performed using Manning's Equation, and a rating curve was established for both streets based upon a balanced water surface elevation.

The current Zone A delineation along the Tempe Canal, shown in Figure 3, is based on the alignment of the canal prior to construction of the Loop 101 (Price) Freeway. Constuction of the Loop 101 Freeway and its interchange with the Superstition Freeway (U.S. 60) resulted in the Tempe Canal being placed underground from just north of U.S. 60, south to the Western Canal. As a result, the poding shown on the current Flood Insurance Rate Map (FIRM) in this area is no longer valid. At significant ponding areas along the Tempe Canal or within the Dobson Ranch development, retention stage-storage-discharge relationships were developed and added to the HEC-1 models to determine 100-year peak event ponding elevations. Topographic mapping was produced at a 2-foot contour interval for the floodplain area of this study. This mapping, in conjunction with additional field survey, was used to determine the stage-storage-discharge relationships. The resulting peak stage elevations were used to delineate the 100-year floodplains.

1.4 Acknowledgements

Hoskin-Ryan Consultants, Inc. (HRC) is the prime consultant for the Tempe Canal Floodplain Delineation Study. Individuals responsible for the completion of this project include Paul Hoskin, PE, Project Manager; Kristyn Van Meter, PE, Project Engineer; and Matthew Graham, RLS, Field Survey Manager.

Coe and Van Loo Consultants, Inc. (CVL) is the sub-consultant firm assisting with the project. Individuals contributing to the completion of the project include: Doug Both, CFM, Project Engineer, and Brent Emmerton, PE, Project Engineer. Additional sub-consultant firms contributing to the project are: Cooper Aerial Surveys Co. for aerial mapping, and Project Engineering Consultants, Ltd. for field survey.

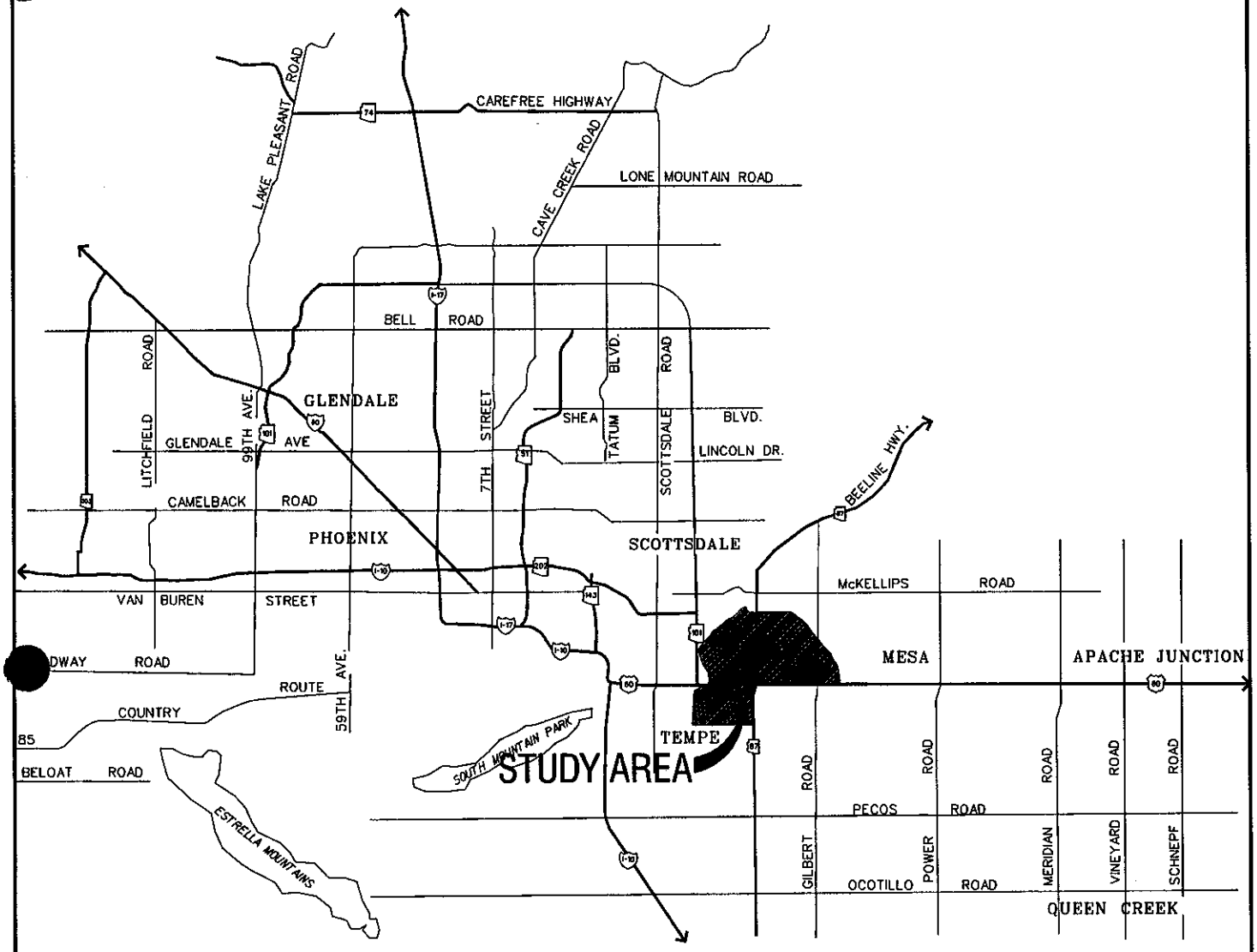
Flood Control District of Maricopa County personnel assigned to the project include Michael Duncan, PE, CFM, Project Manager; Julie Cox, Hydrology; John Stock, RLS, Mapping and Survey; Sally Stewart, Public Information; and Jim Smith, GIS Review.

All referenced materials, including manuals, report, as-builts, maps, and computer applications are documented in Appendix A, References, located in the *Technical Data Notebook, Volume 1 of 2.*

1.5 Summary of Study Results

Stormwater runoff throughout the study area is predominantly conveyed south and west within the streets. Major areas of flow concentration within the study area are: along the Tempe Canal, north of the Southern Pacific Railroad, within large retention basins north and south of the U.S. 60 channel, within large retention basins along the Western Canal, and within the Dobson Ranch development.

Method description and summary tables for the hydrologic and hydraulic analysis portions of the study are included in the *Technical Data Notebook, Volume 1 of 2*. The 100-year peak event floodplains are delineated on the 100-Year Floodplain Maps Sheets 1-8), which are included at a reduced scale following this text, and at full size bound separately from this report.



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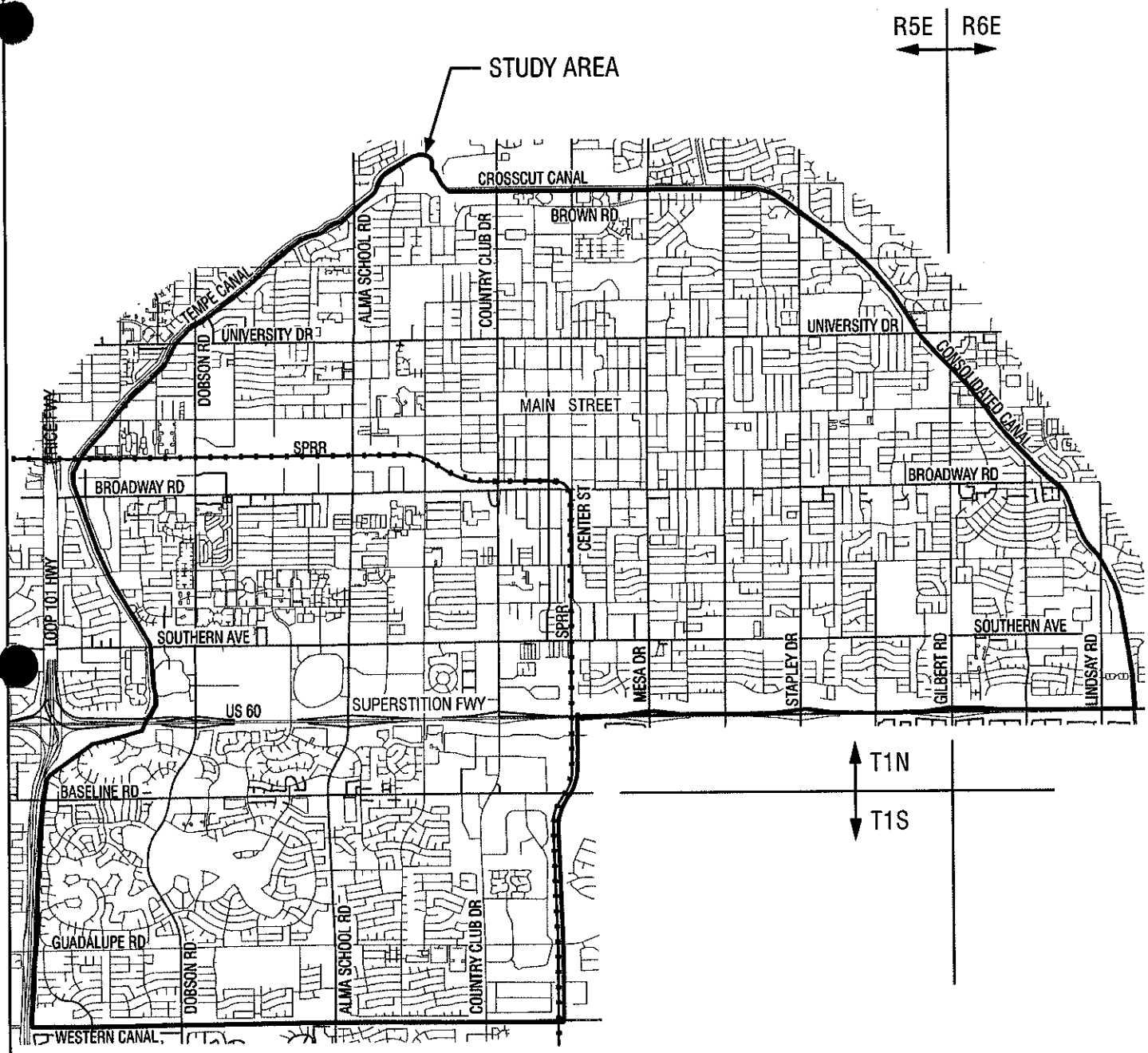
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

LOCATION AND VICINITY MAP
FIGURE 1



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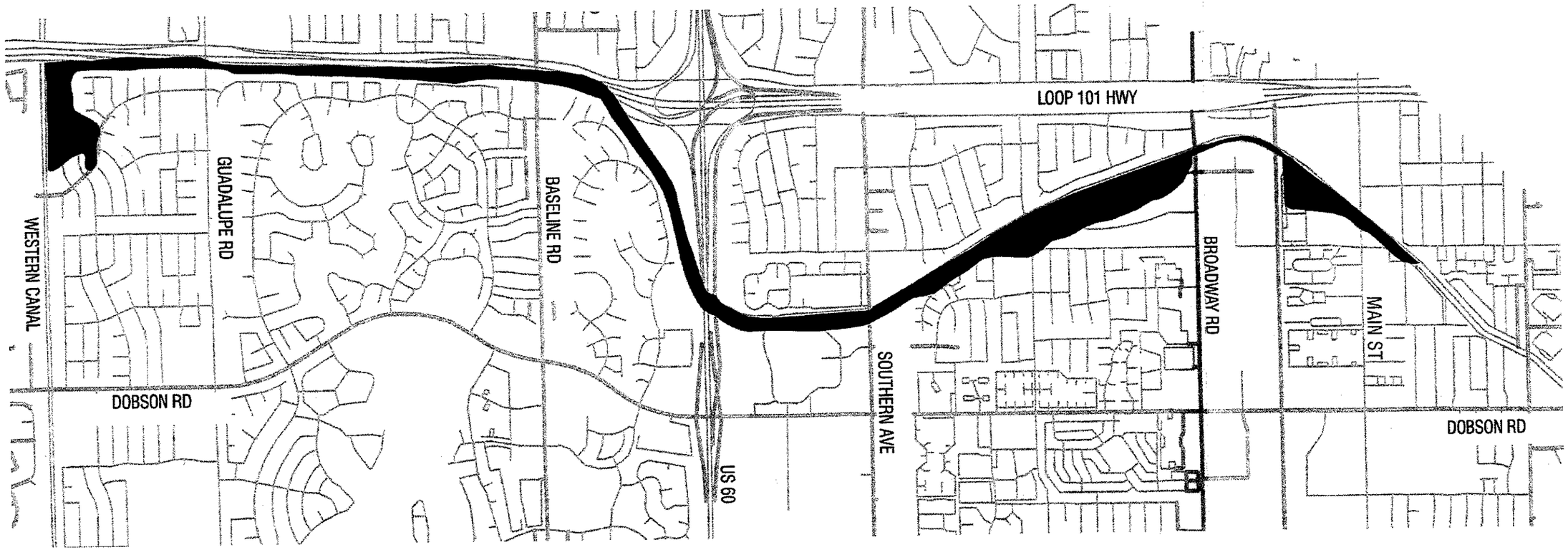
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

STUDY AREA MAP
FIGURE 2



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Phoenix, Arizona 85012

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LEGEND

EXISTING ZONE A FLOODPLAIN

TEMPE CANAL EXISTING FEMA 100-YEAR FLOODPLAIN

FIGURE 3

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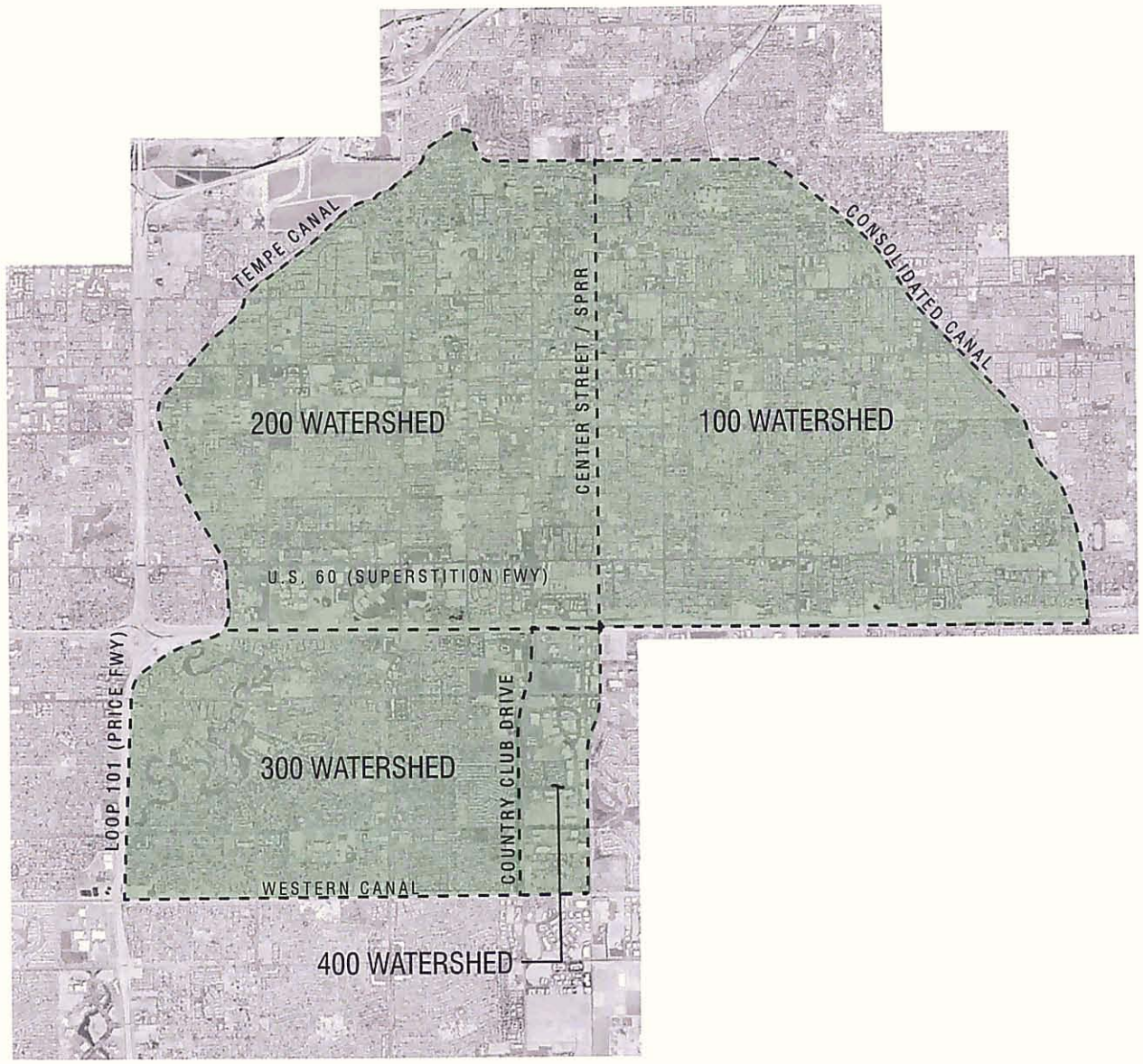

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TEMPE CANAL FLOODPLAIN DELINEATION STUDY

WATERSHED BOUNDARY MAP
FIGURE 4

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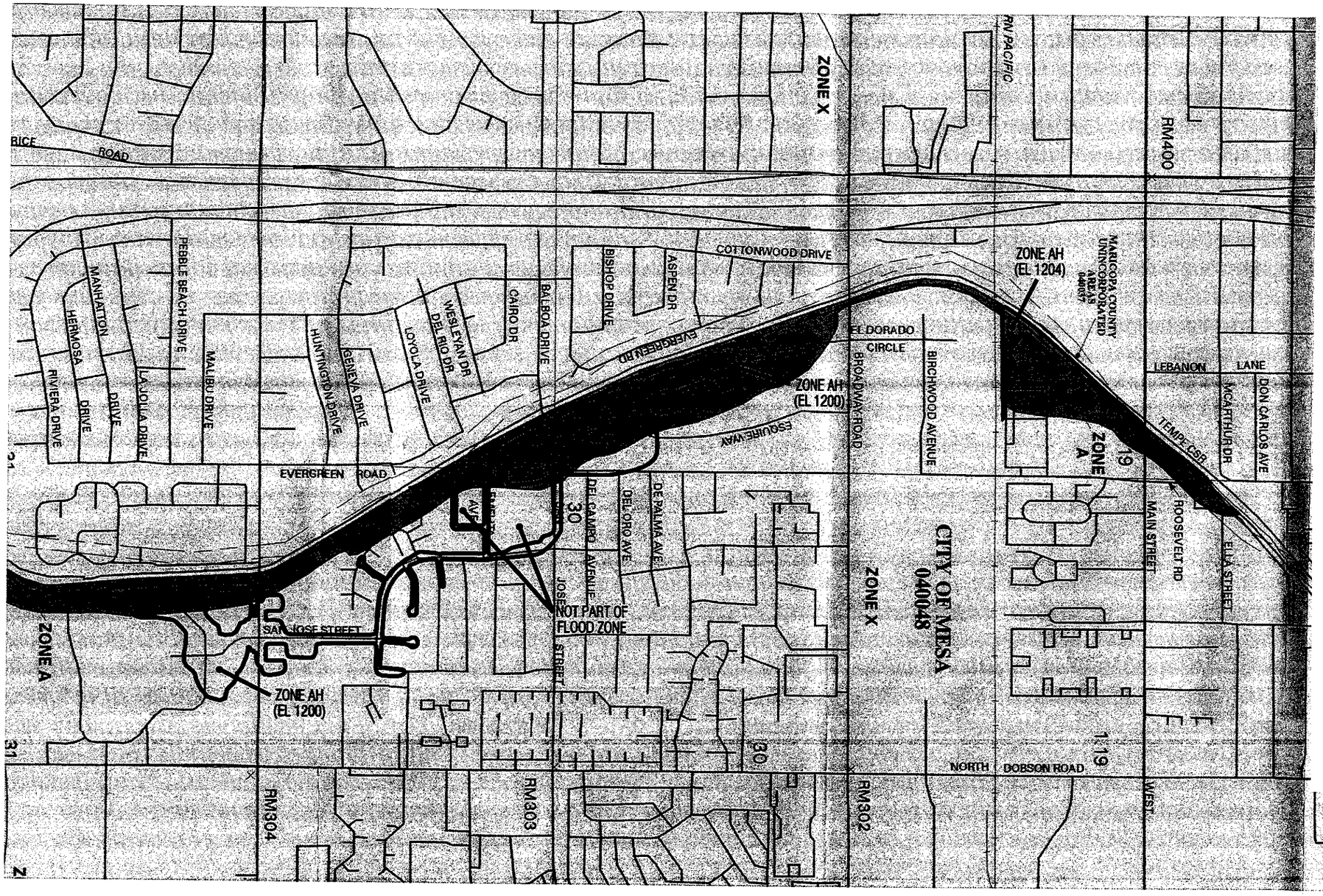

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2190 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL 2170 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GILBERT, TOWN OF	040044	2190	F
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2190	F
MESA, CITY OF	040048	2190	F

MAP NUMBER 04013C2190 F

MAP NUMBER 04013C2170 F

MAPS REVISED: JULY 19, 2001

Federal Emergency Management Agency

SCALE: 1" = 1000'

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creative engineering solutions
201 W. Indian School Road
Phoenix, Arizona 85013-3203
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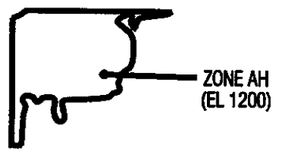
LEGEND



REVISED DELINEATION

TEMPE CANAL ANNOTATED FIRM MAP (PART 1)

FIGURE 5A

Office: (602) 252-8384 Fax: (602) 252-8385 www.hoskinryan.com

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2190 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL 2635 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

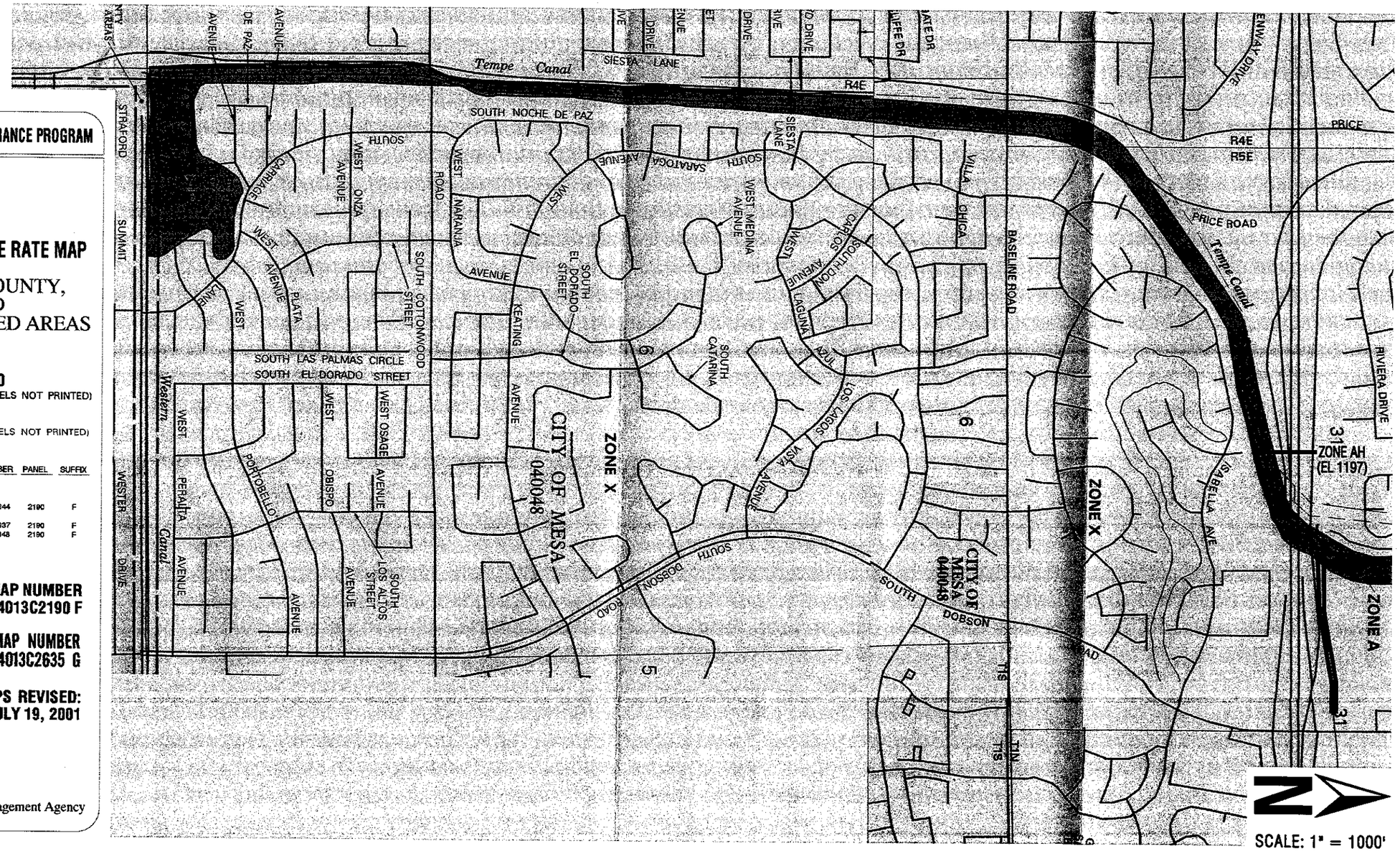
COMMUNITY	NUMBER	PANEL	SUFFIX
GILBERT, TOWN OF	040044	2190	F
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2190	F
MESA, CITY OF	040048	2190	F

MAP NUMBER 04013C2190 F

MAP NUMBER 04013C2635 G

MAPS REVISED: JULY 19, 2001

Federal Emergency Management Agency



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Phoenix, Arizona 85013-3203
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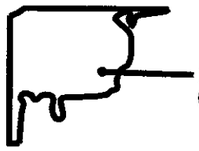
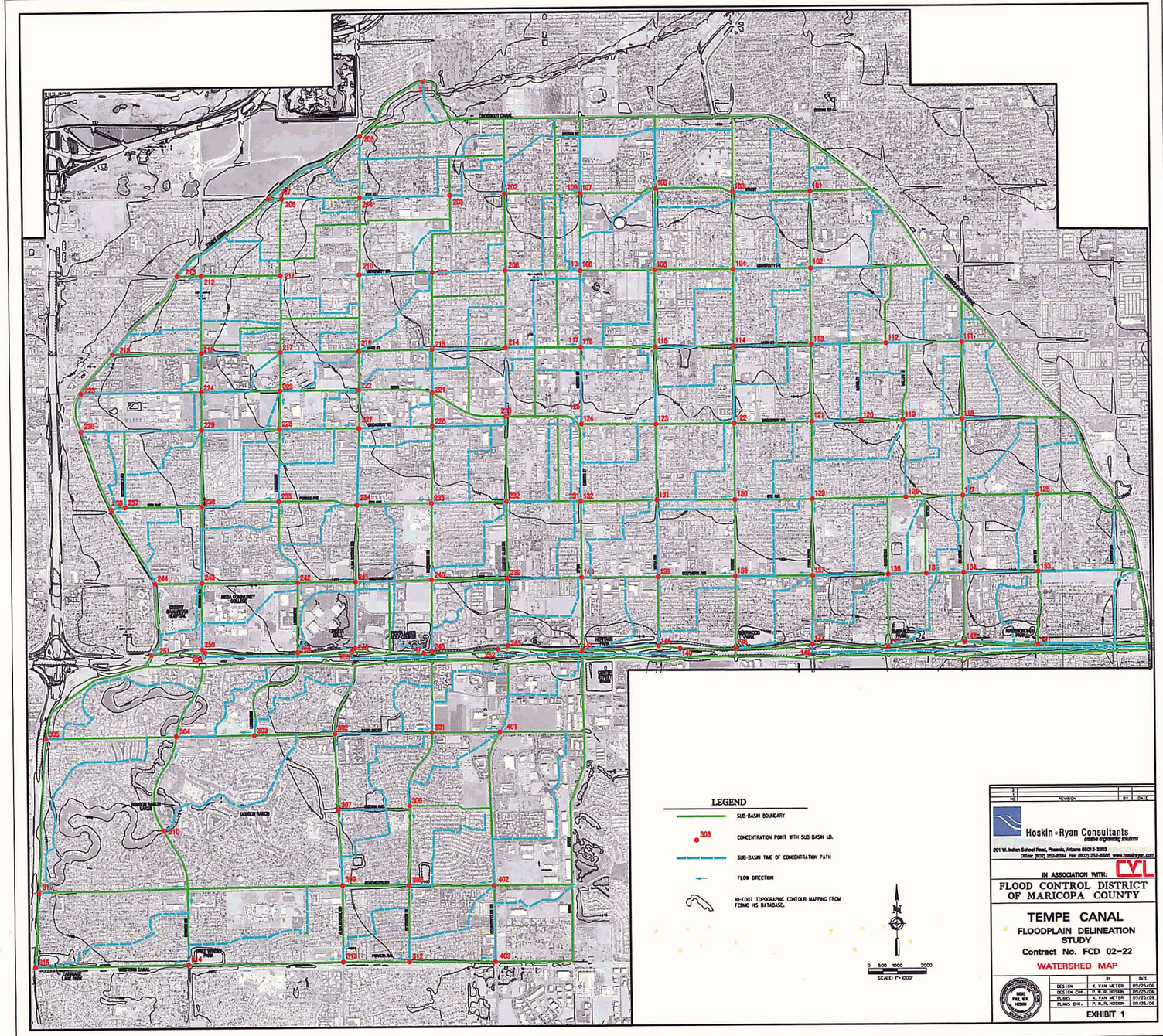
LEGEND



REVISED DELINEATION

TEMPE CANAL
ANNOTATED FIRM MAP
(PART 2)

FIGURE 5B


LEGEND
SUB-BASIN BOUNDARY
308
CONCENTRATION POINT WITH SUB-BASIN I.D.
SUB-BASIN TIME OF CONCENTRATION PATH
FLOW DIRECTION
10-FOOT TOPOGRAPHIC CONTOUR MAPPING FROM FCDMC HIS DATABASE.
N
0 500 1000 2000
SCALE: 1"=1000'
NO. REVISION BY DATE
Hoskin • Ryan Consultants
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201 W. Indian School Road, Phoenix, Arizona 85013-3033
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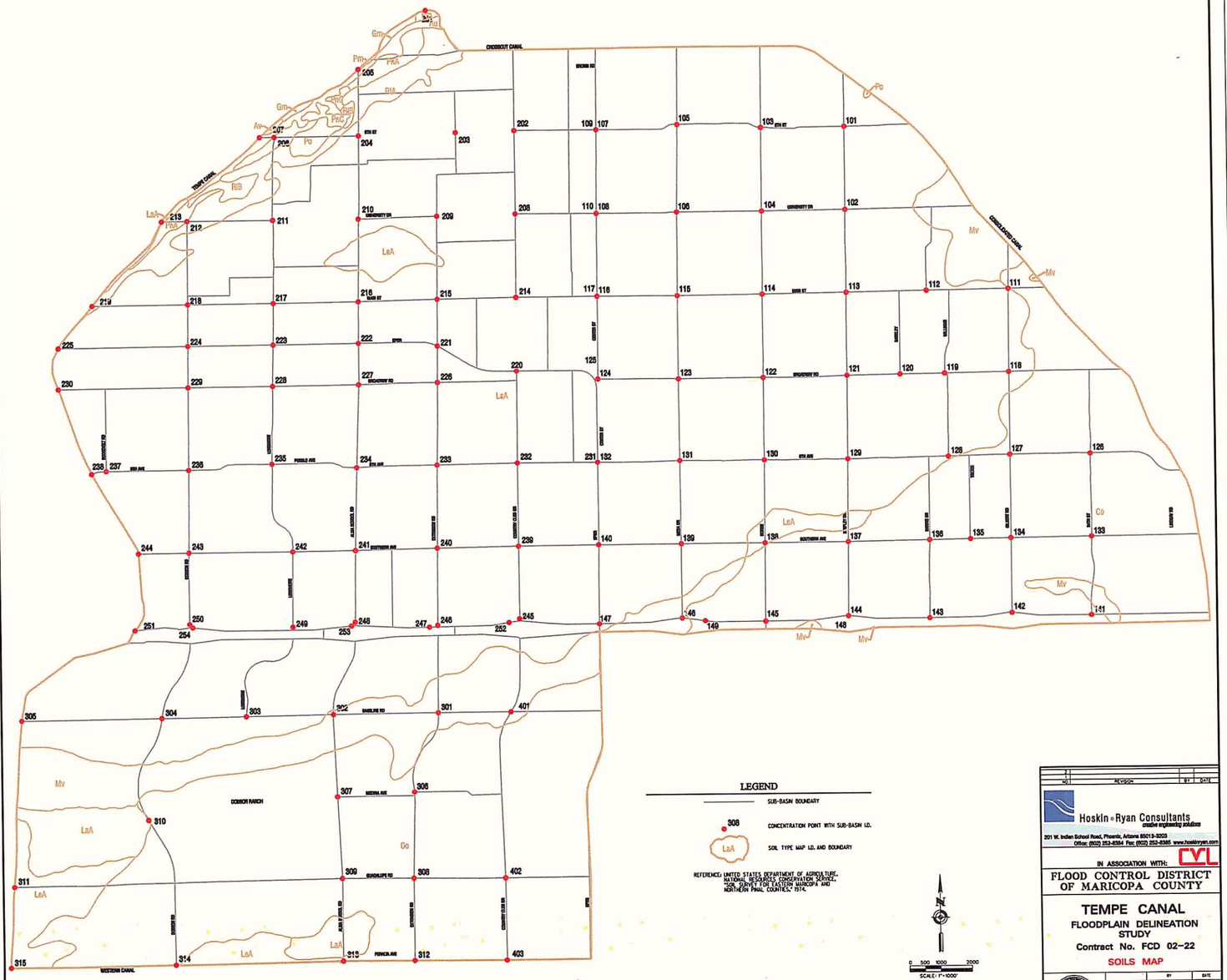
IN ASSOCIATION WITH: CVL
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
TEMPE CANAL
FLOODPLAIN DELINEATION STUDY
Contract No. FCD 02-22
WATERSHED MAP
DESIGN K. VAN METER 09/25/06
DESIGN CHK. P. W. R. HOSKIN 09/25/06
PLANS K. VAN METER 09/25/06
PLANS CHK. P. W. R. HOSKIN 09/25/06
EXHIBIT 1



LEGEND

SUB-BASIN BOUNDARY

308 CONCENTRATION POINT WITH SUB-BASIN I.D.

LaA SOIL TYPE MAP I.D. AND BOUNDARY

REFERENCE: UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL RESOURCES CONSERVATION SERVICE, "SOIL SURVEY FOR EASTERN MARICOPA AND NORTHERN PINAL COUNTIES," 1974.

N

0 500 1000 2000

SCALE: 1"=1000'

NO	REVISION	BY	DATE
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IN ASSOCIATION WITH: CVL Consultants

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

TEMPE CANAL

FLOODPLAIN DELINEATION STUDY

Contract No. FCD 02-22

SOILS MAP

	BY	DATE
DESIGN	K. VAN METER	09/25/06
DESIGN CHK.	P. R. H. HOGAN	09/25/06
PLANS	K. VAN METER	09/25/06
PLANS CHK.	P. R. H. HOGAN	09/25/06

EXHIBIT 2

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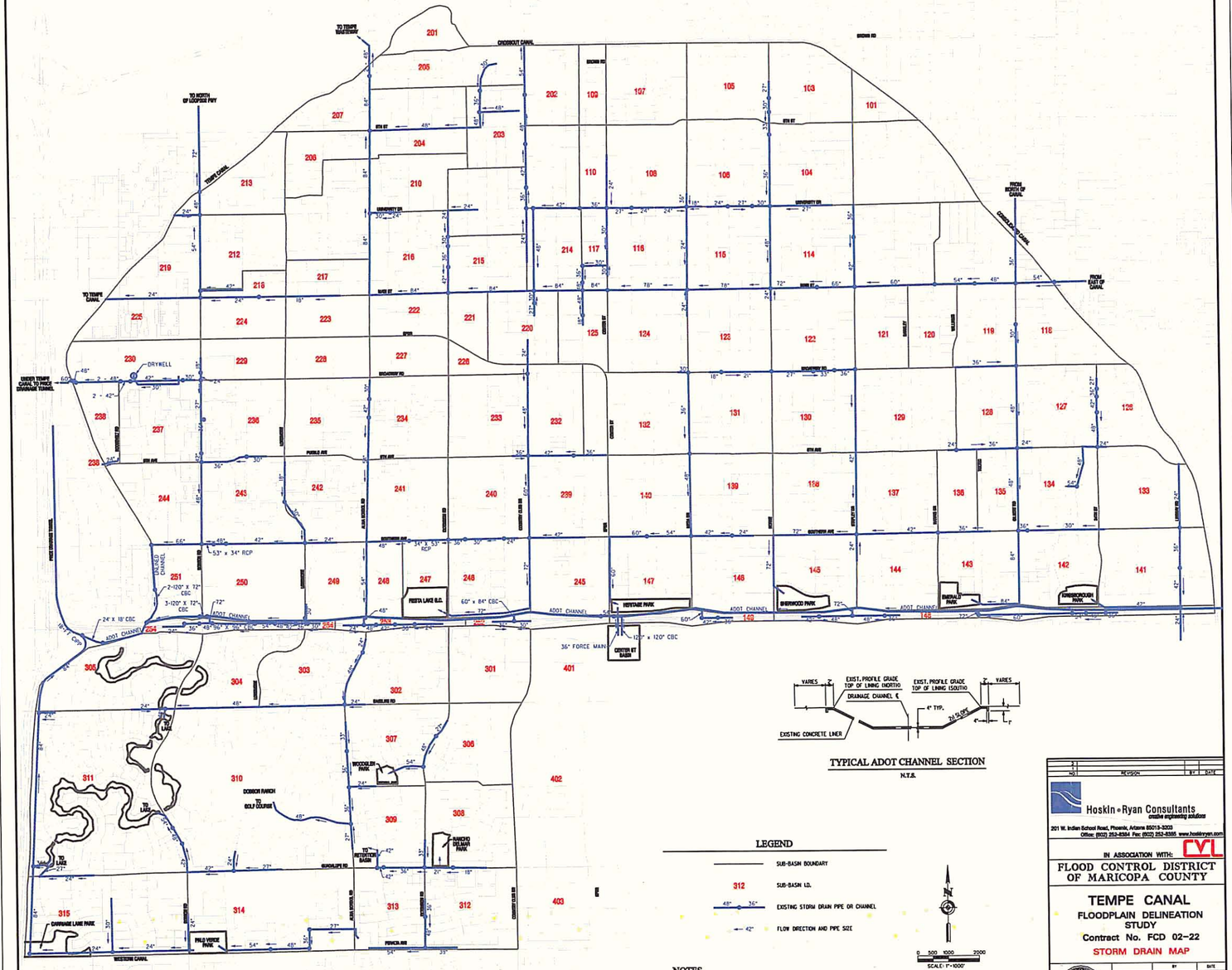
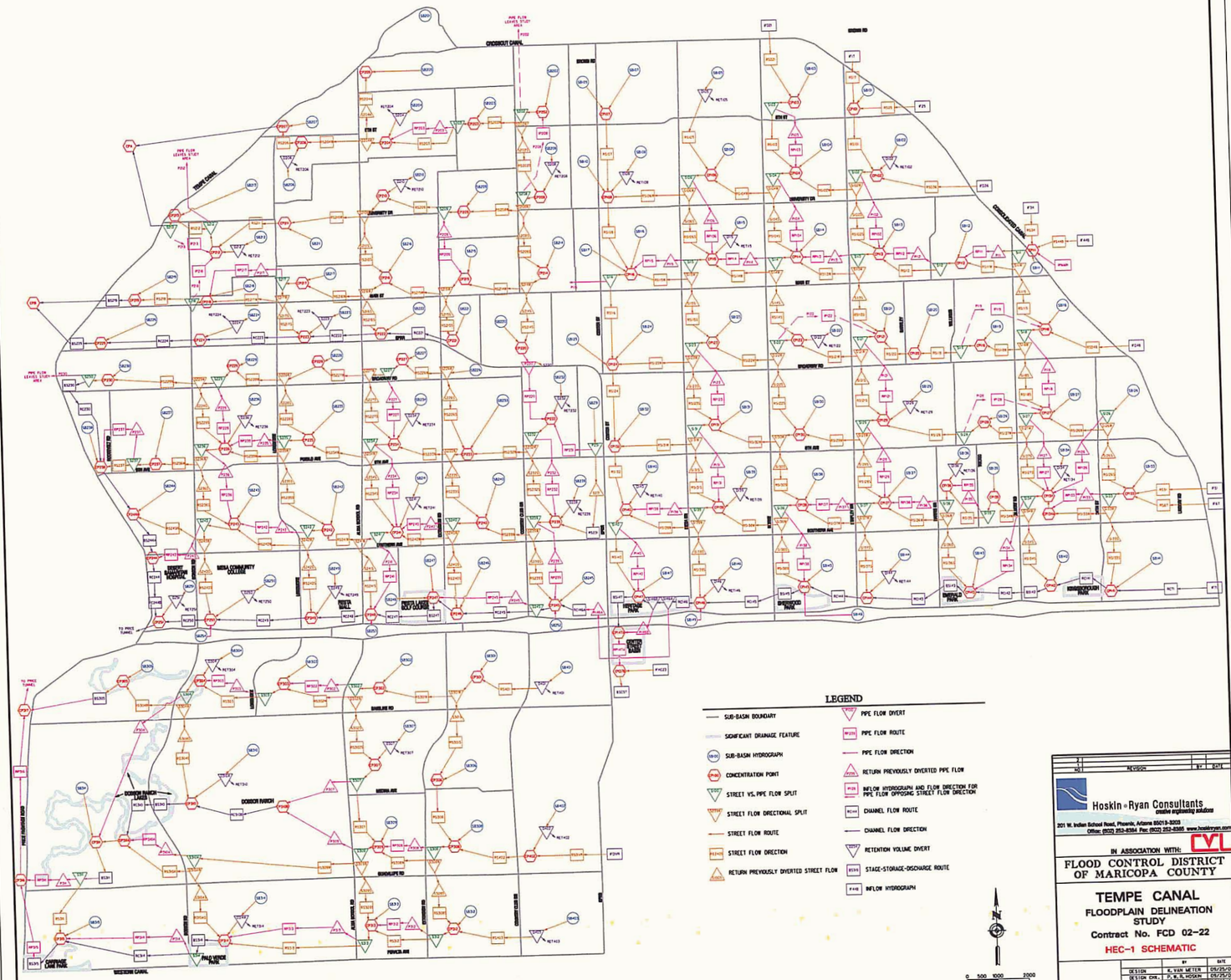
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

TEMPE CANAL
FLOODPLAIN DELINEATION STUDY
Contract No. FCD 02-22

LAND USE MAP

EXHIBIT 3


TO TEMPE WASTEWATER
TO NORTH OF LOOPSIDE PWY
CHICKWOOT CANAL
TEMPE CANAL
TO TEMPE CANAL
UNDER TEMPE CANAL TO FORCE DRAINAGE TUNNEL
DRYWELL
FROM EAST OF CANAL
FROM NORTH OF CANAL
CROSS EAST OF CANAL
UNDERGROUND
OPEN
UNDERGROUND
OPEN
UNDERGROUND
OPEN



NO.	REVISION	BY	DATE
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FLOODPLAIN DELINEATION STUDY

Contract No. FCD 02-22

HEC-1 SCHEMATIC

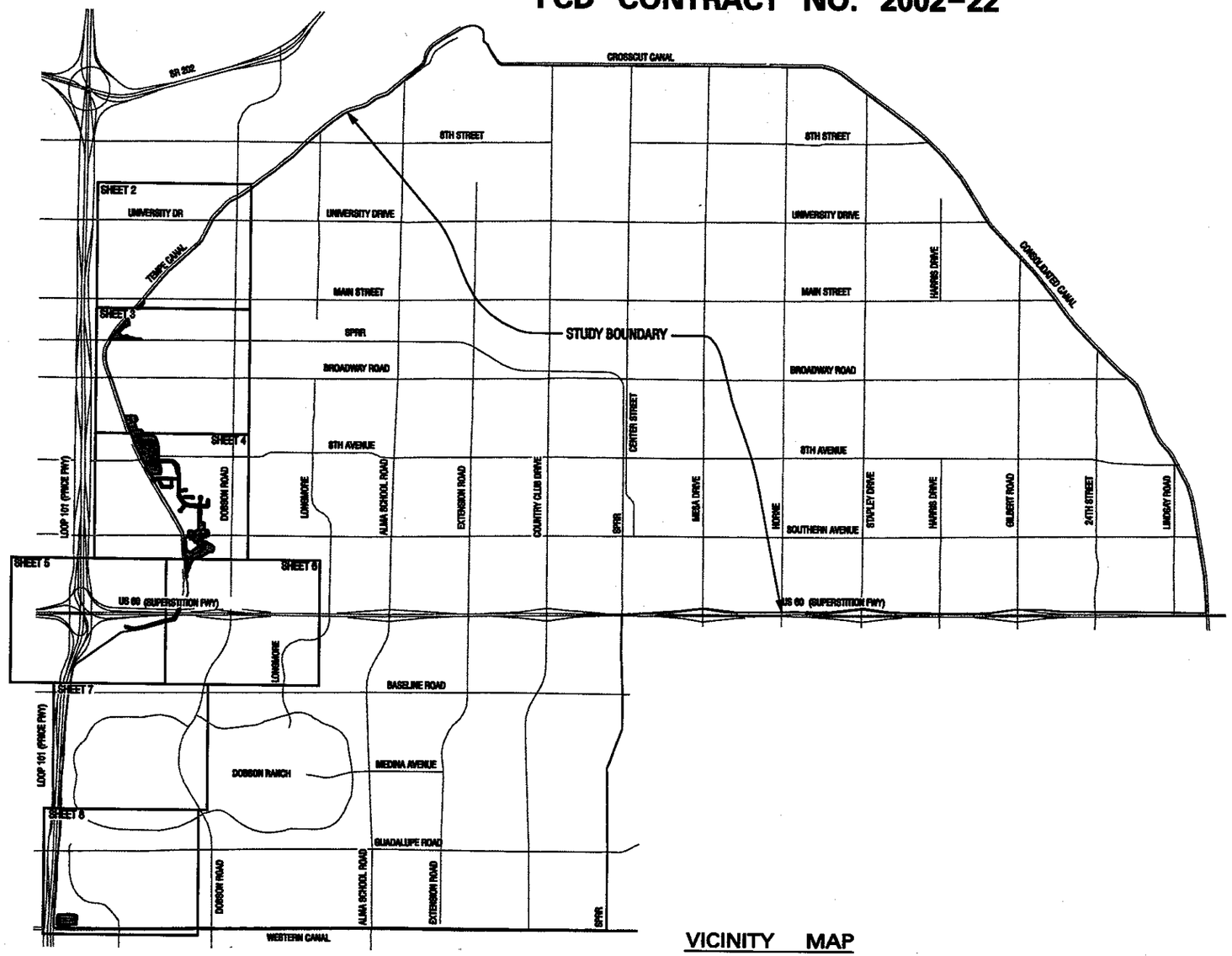
	BY	DATE
DESIGN	K. VAN METER	01/25/06
DESIGN DIR.	P. W. R. HOSKIN	01/25/06
PLANS	K. VAN METER	01/25/06
PLANS DIR.	P. W. R. HOSKIN	01/25/06

EXHIBIT 5

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

TEMPE CANAL FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2002-22



VICINITY MAP
Not to Scale

AERIAL MAPPING

COOPER AERIAL SURVEYS CO., FLIGHT DATE: 3-10-03
HORIZONTAL: NORTH AMERICAN DATUM OF 1983.
VERTICAL: NORTH AMERICAN VERTICAL DATUM OF 1988.

GROUND CONTROL BY HOSKIN RYAN CONSULTANTS

HYDROLOGY/HYDRAULICS

HOSKIN RYAN CONSULTANTS, INC.
201 W. INDIAN SCHOOL ROAD.
PHOENIX, AZ 85013-3203
(602) 252-8384
HRC 03-023

SHEET INDEX

1	COVER SHEET
2-8	100-YR FLOODPLAIN MAPS

0 100 200 400
SCALE: 1"=200'

N

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IN ASSOCIATION WITH: CVL

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

TEMPE CANAL

FLOODPLAIN DELINEATION STUDY

F.C.D. CONTRACT NO. 2002-22

	BY	DATE
DESIGN	K. VAN METER	10-26-2006
DESIGN CHK.	P. W. R. HOSKIN	10-26-2006
PLANS	K. VAN METER	10-26-2006
PLANS CHK.	P. W. R. HOSKIN	10-26-2006

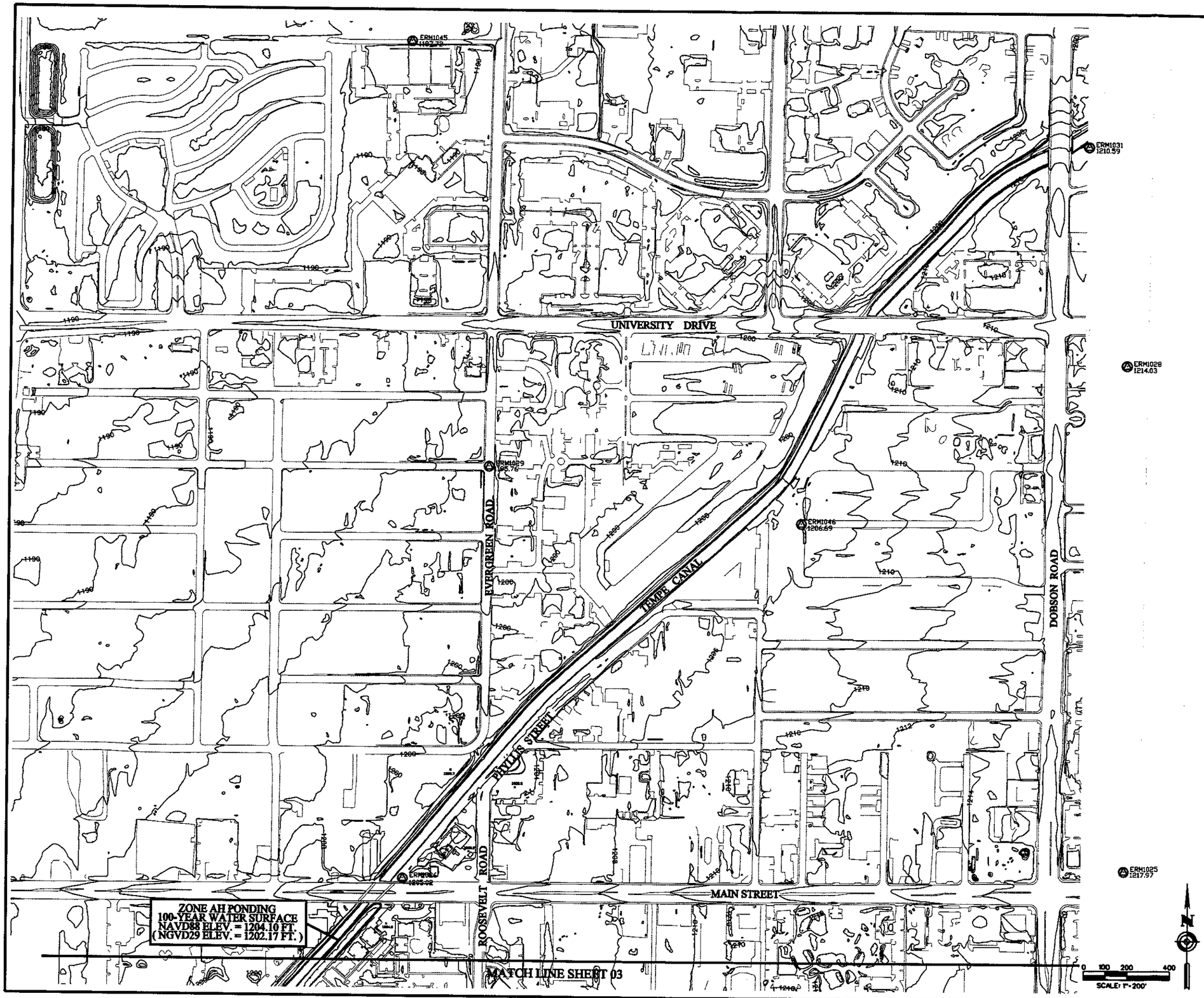
100-YEAR FLOODPLAIN

SHEET 1 OF 8

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"=100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.



THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"=100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

LEGEND

100-YEAR FLOODPLAIN BOUNDARY

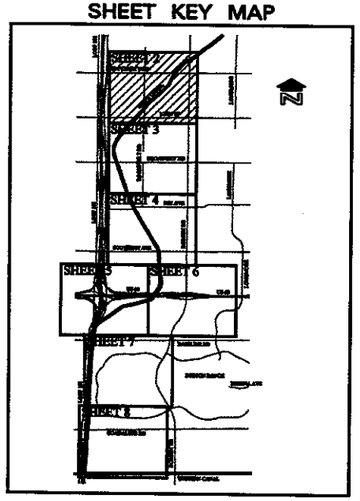
ELEVATION REFERENCE MARKS — ERM1028 1214.03

POTENTIAL FLOW LEAVING FLOODPLAIN

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. NGVD29 ELEVATION = NAVD88 ELEVATION - 1.93 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
2			
1			

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creative engineering solutions
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Office: (602) 252-8384 Fax: (602) 252-8385 www.hoskinryan.com

IN ASSOCIATION WITH: CVL

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

TEMPE CANAL

FLOODPLAIN DELINEATION STUDY

F.C.D. CONTRACT NO. 2002-22

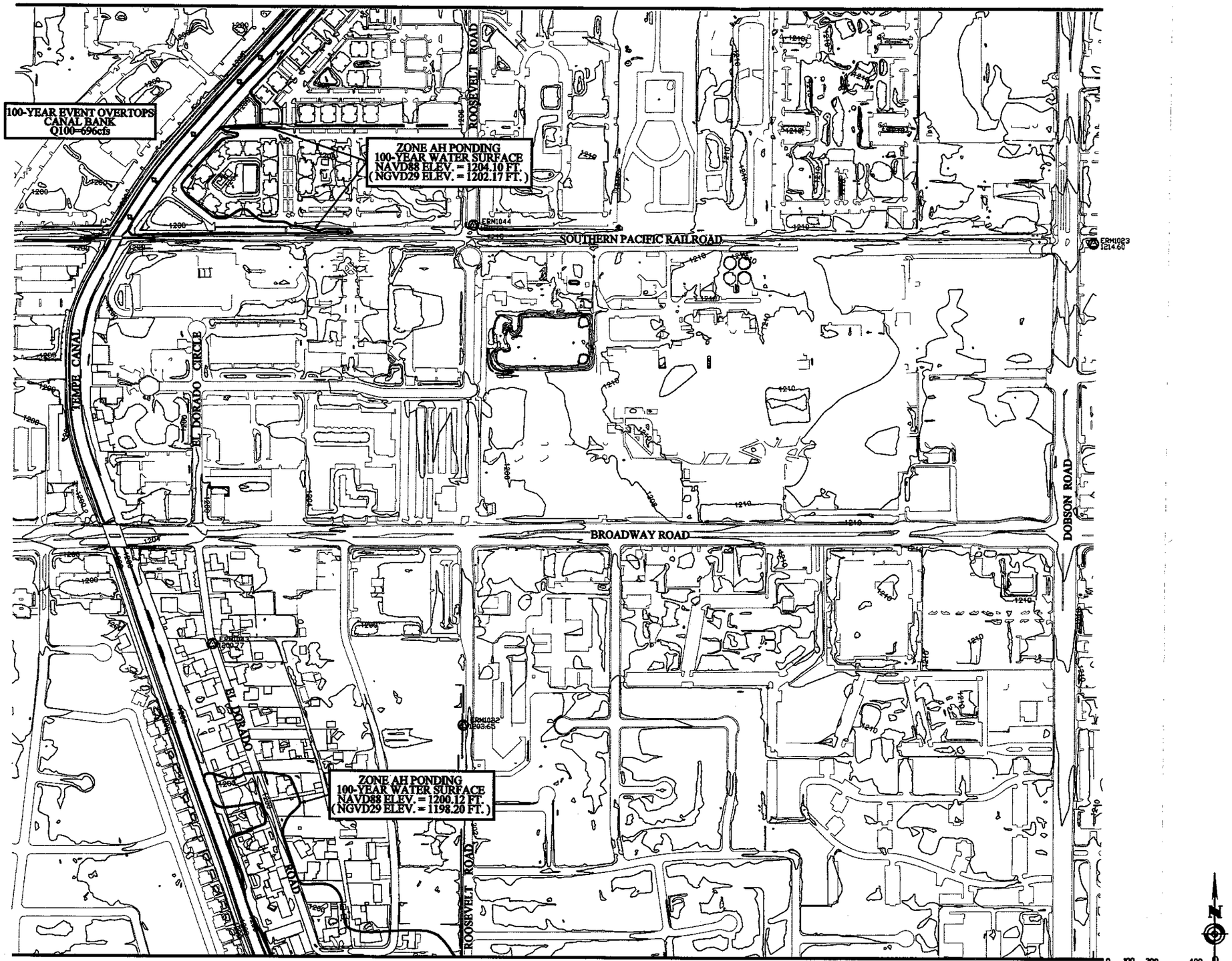
	BY	DATE
DESIGN	K. VAN METER	10-26-2006
DESIGN CHK.	P. W. R. HOSKIN	10-26-2006
PLANS	K. VAN METER	10-26-2006
PLANS CHK.	P. W. R. HOSKIN	10-26-2006

1980 PAUL W.R. HOSKIN ARIZONA, U.S.A.

100-YEAR FLOODPLAIN

SHEET 2 OF 8

MATCH LINE SHEET 02



MATCH LINE SHEET 04

LEGEND

100-YEAR FLOODPLAIN BOUNDARY

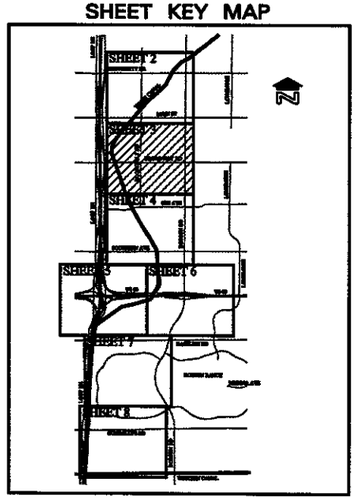
ELEVATION REFERENCE MARKS — ERM1028 1214.03

POTENTIAL FLOW LEAVING FLOODPLAIN

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. FOR NORTH OF BROADWAY ROAD, NGVD29 ELEVATION = NAVD88 ELEVATION - 1.93 FEET; FOR SOUTH OF BROADWAY ROAD, NGVD29 ELEVATION = NAVD88 ELEVATION - 1.92 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
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1			

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IN ASSOCIATION WITH: CVL

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

TEMPE CANAL

FLOODPLAIN DELINEATION STUDY

F.C.D. CONTRACT NO. 2002-22

	BY	DATE
DESIGN	K. VAN METER	10-26-2006
DESIGN CHK.	P. W. R. HOSKIN	10-26-2006
PLANS	K. VAN METER	10-26-2006
PLANS CHK.	P. W. R. HOSKIN	10-26-2006

REGISTERED PROFESSIONAL ENGINEER 19690 PHIL W.R. HOSKIN ARIZONA, U.S.A.

100-YEAR FLOODPLAIN

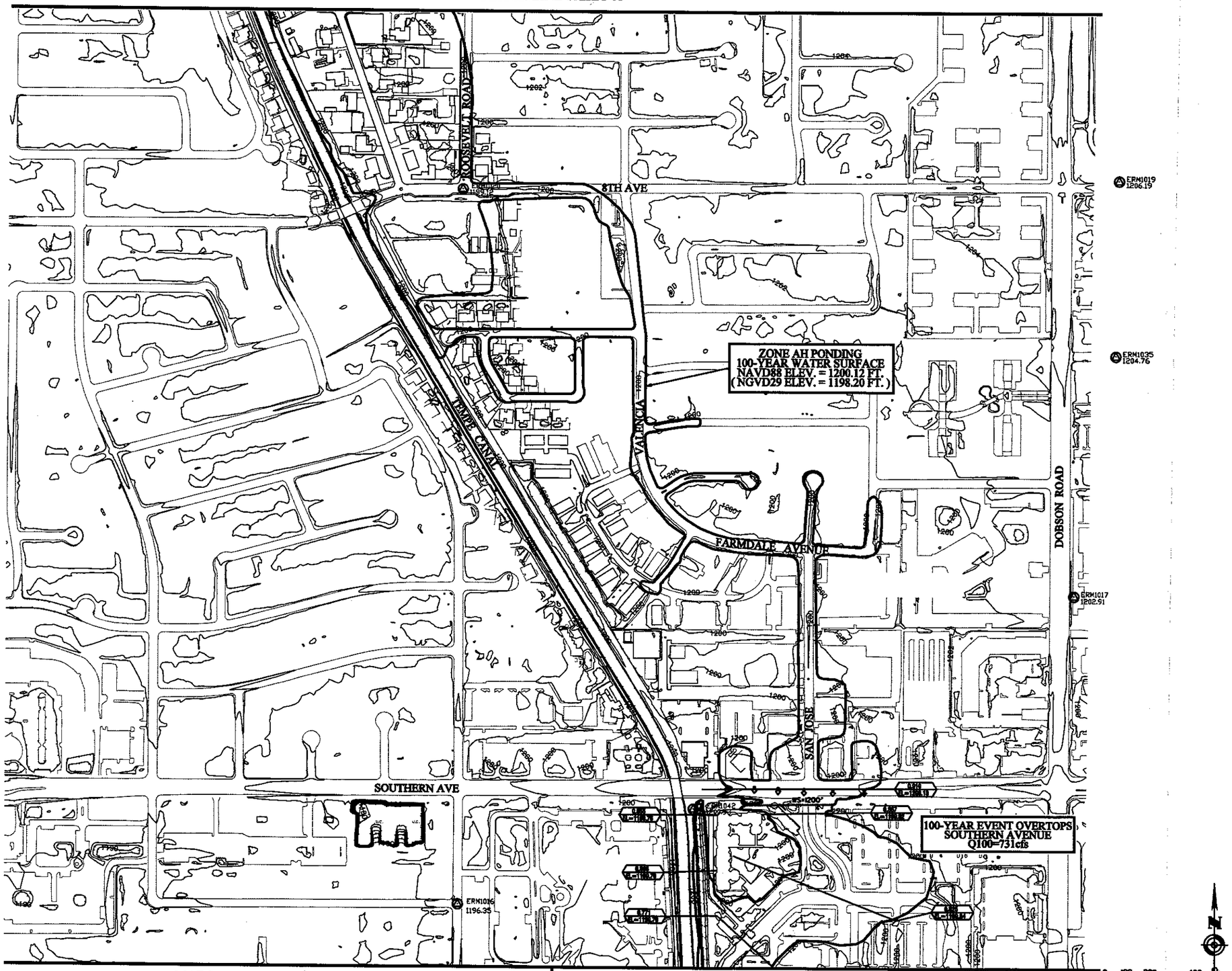
SHEET 3 OF 8

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"=100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO. DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

MATCH LINE SHEET 03



MATCH LINE SHEET 05

MATCH LINE SHEET 06

LEGEND

100-YEAR FLOODPLAIN BOUNDARY

ELEVATION REFERENCE MARKS — ERM1028 1214.03

POTENTIAL FLOW LEAVING FLOODPLAIN

HEC-RAS CROSS-SECTION

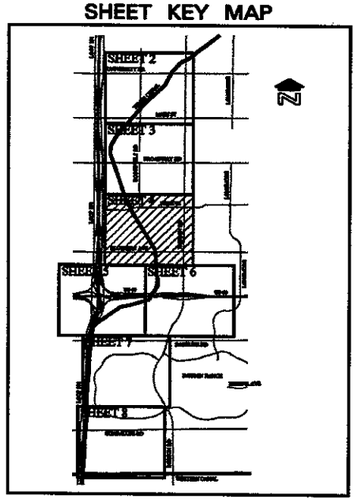
BASE FLOOD ELEVATION — WS=1200

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. FOR NORTH OF SOUTHERN AVENUE,
   NGVD29 ELEVATION = NAVD88 ELEVATION - 1.92 FEET;
   FOR SOUTH OF SOUTHERN AVENUE,
   NGVD29 ELEVATION = NAVD88 ELEVATION - 1.90 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
2			
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PLANS	K. VAN METER	10-26-2006
PLANS CHK.	P. W. R. HOSKIN	10-26-2006

100-YEAR FLOODPLAIN

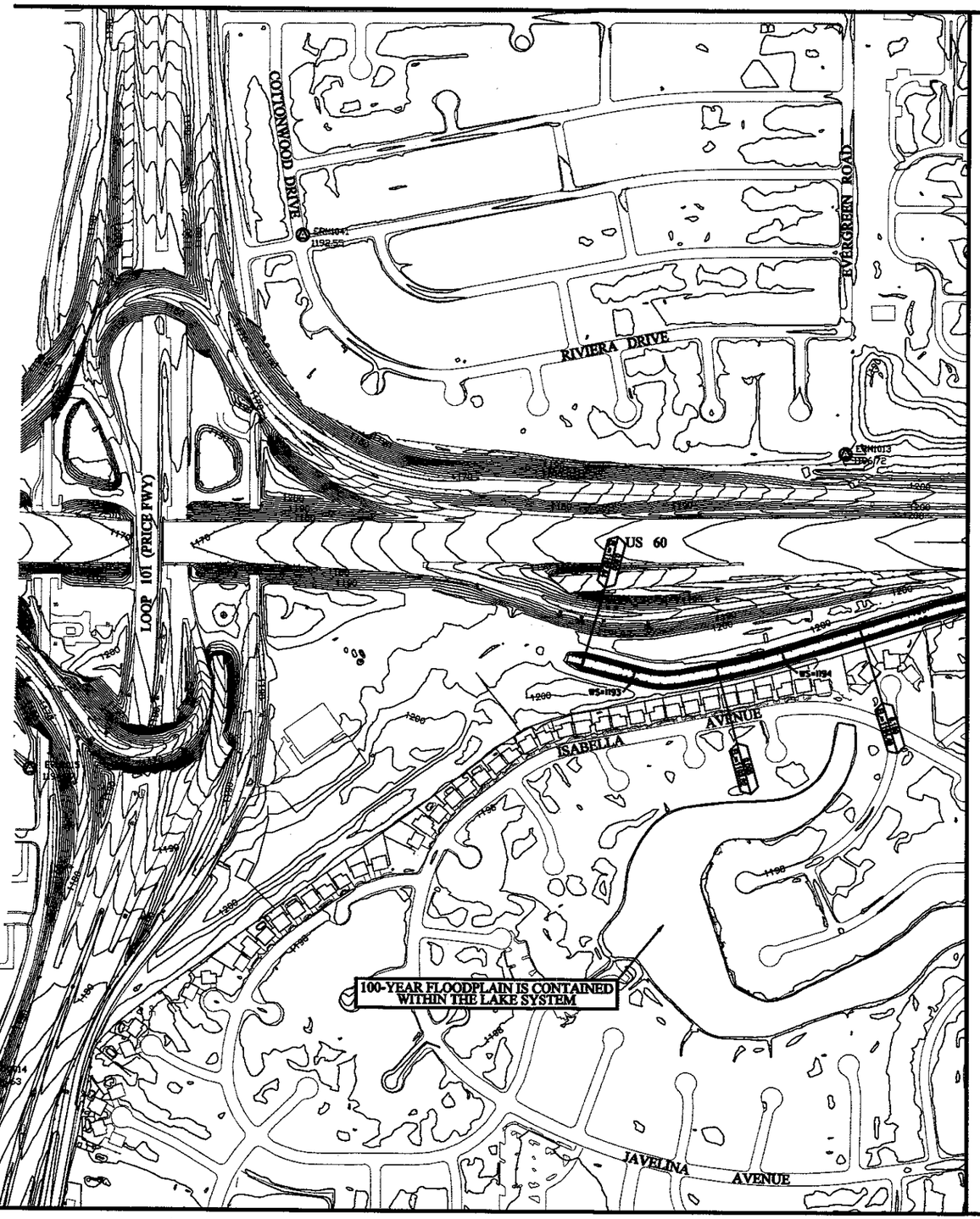
SHEET 4 OF 8

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"=100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

MATCH LINE SHEET 04



MATCH LINE SHEET 06

MATCH LINE SHEET 07

0 100 200 400
SCALE: 1"=200'

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"=100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

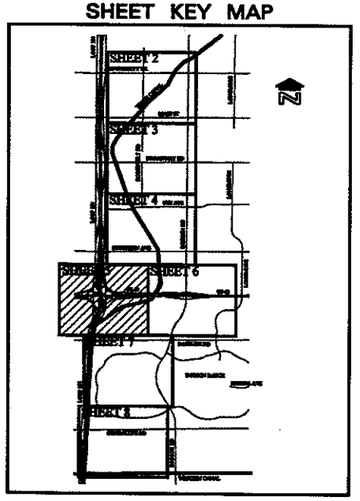
LEGEND

100-YEAR FLOODPLAIN BOUNDARY	
ELEVATION REFERENCE MARKS	ERM1028 1214.03
POTENTIAL FLOW LEAVING FLOODPLAIN	
HEC-RAS CROSS-SECTION	1.08 1+1197.8
BASE FLOOD ELEVATION	WS=1200

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. NGVD29 ELEVATION = NAVD88 ELEVATION - 1.90 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
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1			

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TEMPE CANAL

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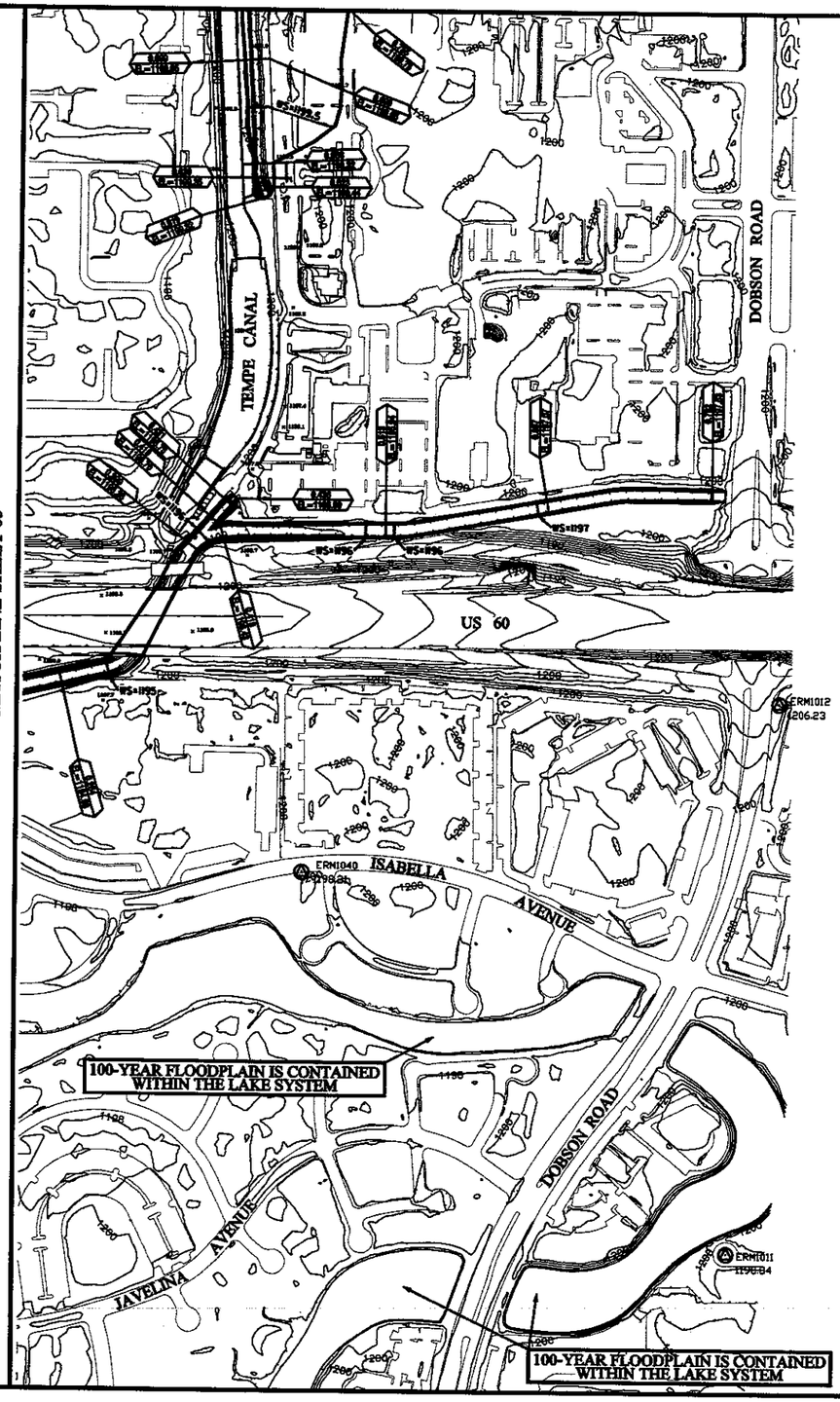
PLANS CHK.	P. W. R. HOSKIN	10-26-2006

100-YEAR FLOODPLAIN

SHEET 5 OF 8

MATCH LINE SHEET 04

MATCH LINE SHEET 05



MATCH LINE SHEET 07

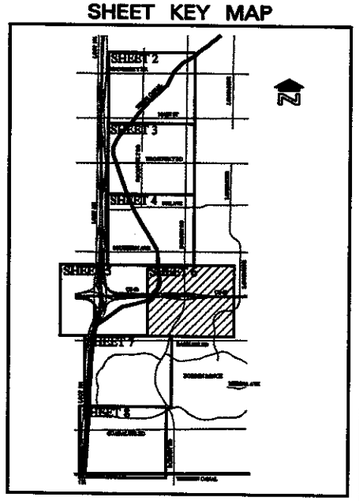
LEGEND

100-YEAR FLOODPLAIN BOUNDARY	
ELEVATION REFERENCE MARKS	ERM1028 1214.03
POTENTIAL FLOW LEAVING FLOODPLAIN	
HEC-RAS CROSS-SECTION	
BASE FLOOD ELEVATION	WS=1200

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. NGVD29 ELEVATION = NAVD88 ELEVATION - 1.90 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
2			
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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FLOODPLAIN DELINEATION STUDY

F.C.D. CONTRACT NO. 2002-22

	BY	DATE
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PLANS CHK.	P. W. R. HOSKIN	10-26-2006

PAUL W.R. HOSKIN 16680 ARIZONA, U.S.A.

100-YEAR FLOODPLAIN

SHEET 6 OF 8

0 100 200 400
SCALE: 1"=200'

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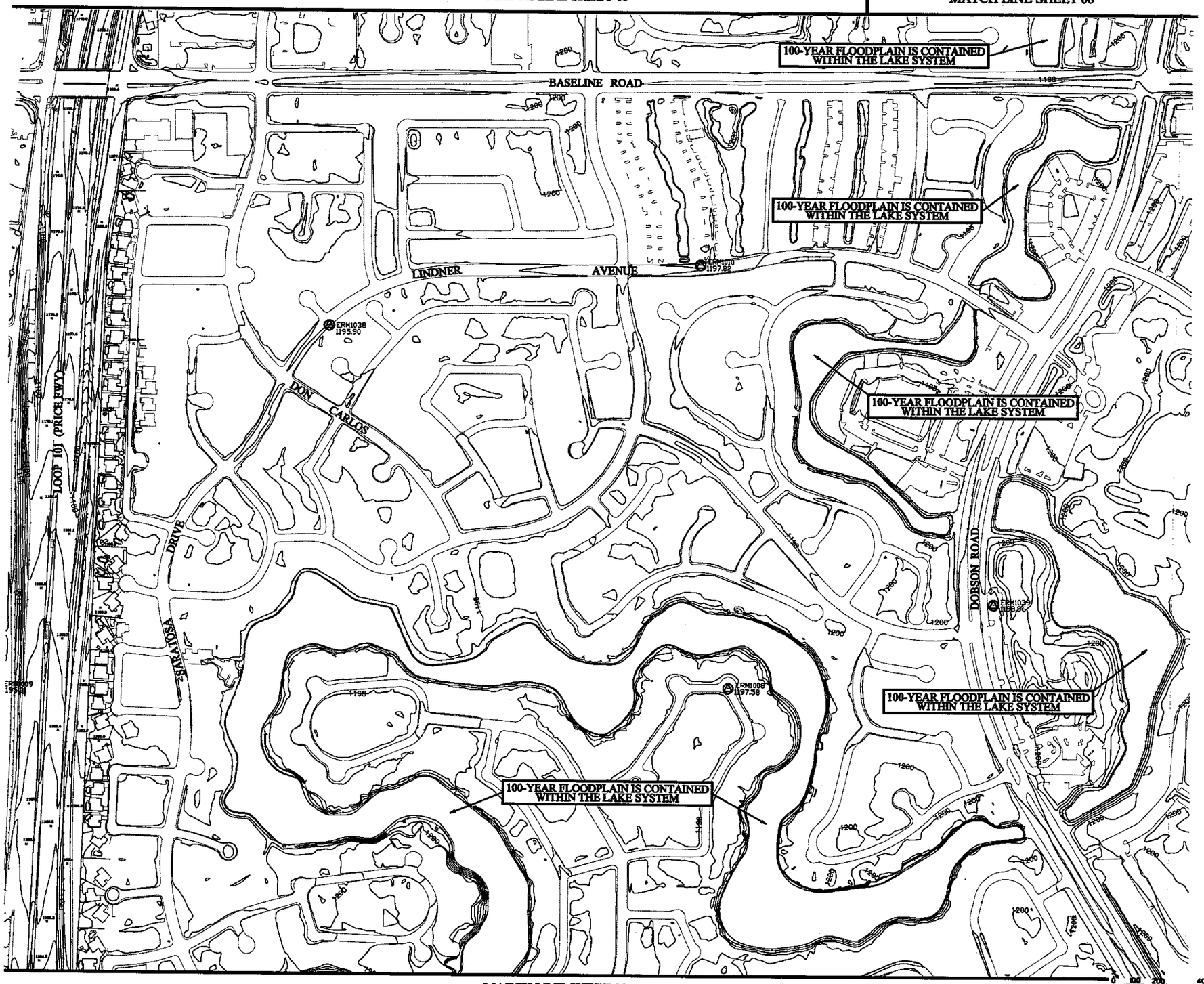
AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

MATCH LINE SHEET 05

MATCH LINE SHEET 06



MATCH LINE SHEET 08

LEGEND

100-YEAR FLOODPLAIN BOUNDARY

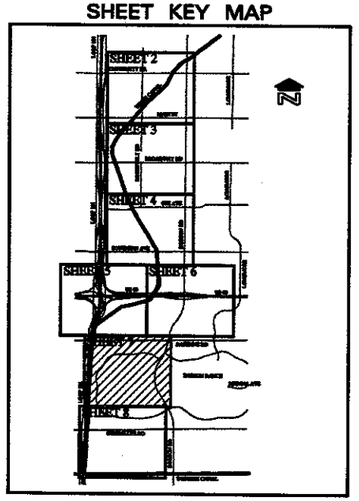
ELEVATION REFERENCE MARKS — ERM1028 1214.03

POTENTIAL FLOW LEAVING FLOODPLAIN

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. NGVD29 ELEVATION = NAVD88 ELEVATION - 1.89 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
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PLANS CHK.	P. W. R. HOSKIN	10-26-2006

1980 PAUL W.R. HOSKIN ARIZONA, U.S.A.

100-YEAR FLOODPLAIN

SHEET 7 OF 8

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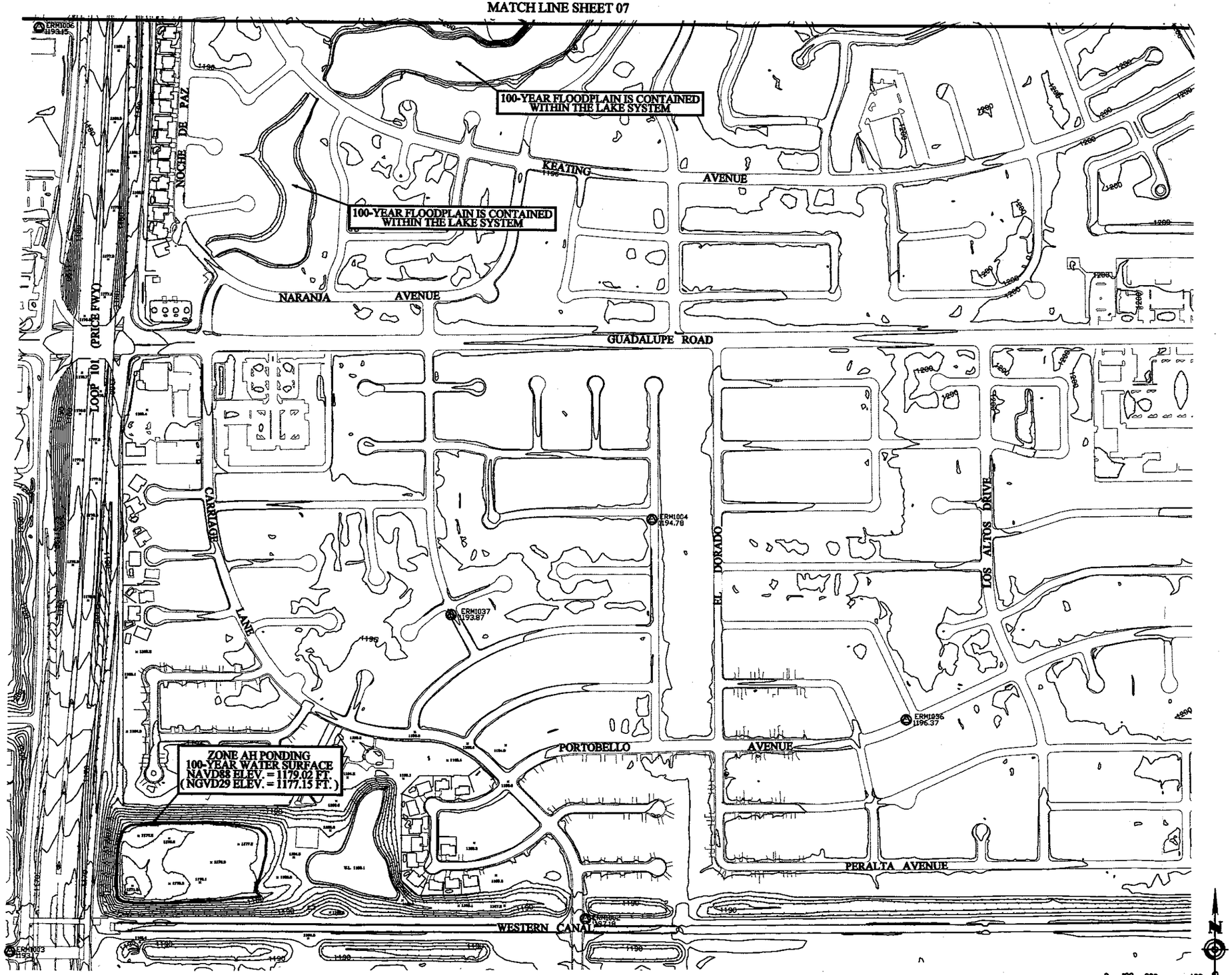
AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

MATCH LINE SHEET 07



LEGEND

100-YEAR FLOODPLAIN BOUNDARY

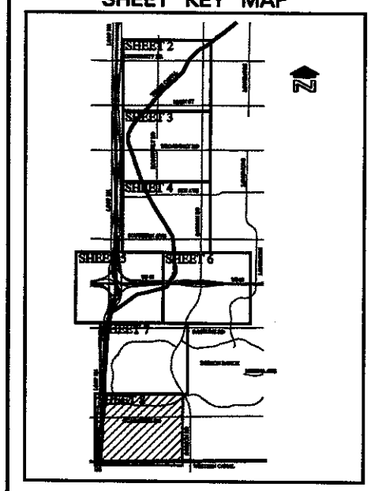
ELEVATION REFERENCE MARKS — ERM1028 1214.03

POTENTIAL FLOW LEAVING FLOODPLAIN

NOTES

1. THIS STUDY USES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. NGVD29 ELEVATION = NAVD88 ELEVATION - 1.87 FEET.

SHEET KEY MAP



NO.	REVISION	BY	DATE
2			
1			

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TEMPE CANAL

FLOODPLAIN DELINEATION STUDY

F.C.D. CONTRACT NO. 2002-22

	BY	DATE
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DESIGN CHK.	P. W. R. HOSKIN	10-26-2006
PLANS	K. VAN METER	10-26-2006
PLANS CHK.	P. W. R. HOSKIN	10-26-2006

100-YEAR FLOODPLAIN

SHEET 8 OF 8

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AERIAL MAPPING BY: COOPER AERIAL SURVEYS CO.
DATE FLOWN: MARCH 10, 2003

GROUND CONTROL SURVEY DATA PROVIDED BY HOSKIN-RYAN CONSULTANTS INC.

Appendix D: Hydrologic Analysis Supporting Documentation

D.3 Hydrograph Routing Data

D.3.1 Street Section Type Summary
D.3.2 City of Mesa *Transportation Plan* Figure 4-2
D.3.3 Typical Arterial Street Routing Sections
D.3.4 Typical Collector Street Routing Sections
D.3.5 City of Mesa *Standard Details & Specifications*, selected details
D.3.6 Street Routing Sections Equivalent Flow Area Calculations
D.3.7 NSTPS Estimation
D.3.8 Slope Comparison
D.3.9 Sub-Basin Unit Discharge Summary
D.3.10 Envelope Curves

D.3.1 STREET SECTION TYPE SUMMARY

STREET SECTION TYPE SUMMARY – EAST-WEST STREETS

References: *(1) Parsons Brinckerhoff, Mesa Transportation Plan, June 2002. Figure 4-2.*
(2) City of Mesa, Mesa Standard Details & Specifications, Amendment to the Uniform Standard Details & Specifications, March 1, 2003.

Notes: *(1) Streets classified as Arterial by the Mesa Transportation Plan are shown as 4- or 6-Lane Arterial Streets.*
(2) Streets not classified as Arterial by the Mesa Transportation Plan were classified based on ROW width.

STREET	SEGMENT	CLASSIFICATION	TYPE or ROW WIDTH	ROUTING SECTION USED
8th Street	Tempe Canal to Country Club Dr	Collector	80	80-ft ROW Collector
	Country Club Dr to Center St	No thru street		None
	Center St to Consolidated Canal	Collector	60	60-ft ROW Collector
University Drive	Tempe Canal to Consolidated Canal	Arterial	4-Lane	4-Lane Arterial Street
Main Street	Tempe Canal to Alma School Rd	Arterial	6-Lane	6-Lane Arterial Street
	Alma School Rd to Gilbert Rd	Arterial	4-Lane	4-Lane Arterial Street
	Gilbert Rd to Consolidated Canal	Arterial	6-Lane	6-Lane Arterial Street
Broadway Road	Tempe Canal to Dobson Rd	Arterial	6-Lane	6-Lane Arterial Street
	Dobson Rd to Consolidated Canal	Arterial	4-Lane	4-Lane Arterial Street
8th Avenue	Tempe Canal to Dobson Rd	Collector	60	60-ft ROW Collector
	Dobson Rd to Country Club Dr	Collector	80	80-ft ROW Collector
	Country Club Dr to Center St	Collector	60	60-ft ROW Collector
	Center St to Consolidated Canal	Collector	60	60-ft ROW Collector
Southern Avenue	Tempe Canal to Dobson Rd	Arterial	5-Lane	6-Lane Arterial Street
	Dobson Rd to Country Club Dr	Arterial	6-Lane	6-Lane Arterial Street
	Country Club Dr to Consolidated Canal	Arterial	4-Lane	4-Lane Arterial Street
Baseline Road	Loop 101 to Country Club Dr	Arterial	6-Lane	6-Lane Arterial Street
Guadalupe Road	Loop 101 to Country Club Dr	Arterial	4-Lane	4-Lane Arterial Street
Peralta Avenue	Pennington to Rogers	Collector	60	60-ft ROW Collector

STREET SECTION TYPE SUMMARY – NORTH-SOUTH STREETS

References: *(1) Parsons Brinckerhoff, Mesa Transportation Plan, June 2002. Figure 4-2.*
(2) City of Mesa, Mesa Standard Details & Specifications, Amendment to the Uniform Standard Details & Specifications, March 1, 2003.

Notes: *(1) Streets classified as Arterial by the Mesa Transportation Plan are shown as 4- or 6-Lane Arterial Streets.*
(2) Streets not classified as Arterial by the Mesa Transportation Plan were classified based on ROW width.

STREET	SEGMENT	CLASSIFICATION	TYPE or ROW WIDTH	ROUTING SECTION USED
Dobson Road	Tempe Canal to Guadalupe Rd	Arterial	6-Lane	6-Lane Arterial Street
	Guadalupe Rd to Western Canal	Arterial	4-Lane	4-Lane Arterial Street
Longmore	8th St to Main St	Collector	60	60-ft ROW Collector
	Main St to Broadway Rd	No thru street		None
	Broadway Rd to US60	Collector	80	80-ft ROW Collector
Alma School Road	Tempe Canal to Southern Ave	Arterial	6-Lane	6-Lane Arterial Street
	Southern Ave to US60	Arterial	8-Lane	6-Lane Arterial Street
	US60 to Baseline Rd	Arterial	6-Lane	6-Lane Arterial Street
	Baseline Rd to Western Canal	Arterial	4-Lane	4-Lane Arterial Street
Extension Road	University Dr to US60	Collector	80	80-ft ROW Collector
	US60 to Western Canal	Collector	80	80-ft ROW Collector
Country Club Drive	Crosscut Canal to Western Canal	Arterial	6-Lane	6-Lane Arterial Street
Center Street	Crosscut Canal to University Dr	Collector	80	80-ft ROW Collector
	University Dr to Broadway Rd	Collector	130	4-Lane Arterial Street
	Broadway Rd to 8th Ave	Collector	80	80-ft ROW Collector
	8th Ave to US60	Collector	60	60-ft ROW Collector
Mesa Drive	Crosscut Canal to US60	Arterial	4-Lane	4-Lane Arterial Street
Horne	Crosscut Canal to Southern Ave	Collector	60	60-ft ROW Collector
	Southern Ave to US60	Collector	80	80-ft ROW Collector
Stapley Drive	Consolidated Canal to US60	Arterial	4-Lane	4-Lane Arterial Street
Harris Drive	Consolidated Canal to US60	Collector	80	80-ft ROW Collector
Gilbert Road	Consolidated Canal to US60	Arterial	6-Lane	6-Lane Arterial Street
24th Street	Consolidated Canal to US60	Collector	80	80-ft ROW Collector
Lindsay Road	Consolidated Canal to US60	Arterial	4-Lane	4-Lane Arterial Street

D.3.2 CITY OF MESA TRANSPORTATION PLAN

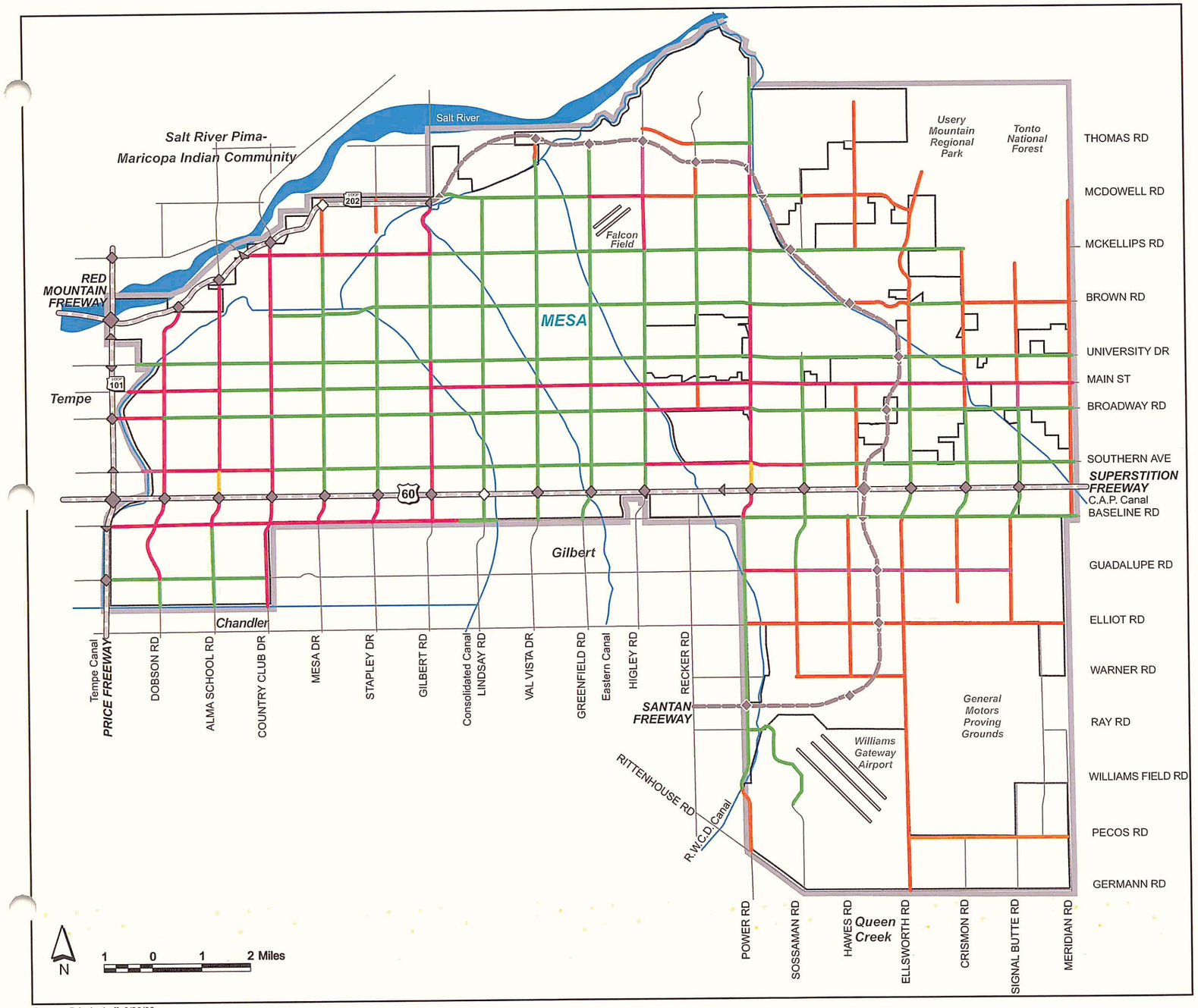
FIGURE 4-2

Transportation Plan

MESA 2025
A Shared Vision

Existing Number of Through Lanes

Figure 4-2



- 8 Lane Arterial
- 6 Lane Arterial
- 5 Lane Arterial
- 4 Lane Arterial
- 2 Lane Arterial
- Planning Area Boundary
- City Limit
- Existing Freeway
- Interchange
- Future Interchange
- Proposed Freeway
- Major Arterial Roadway
- Canals and Waterways

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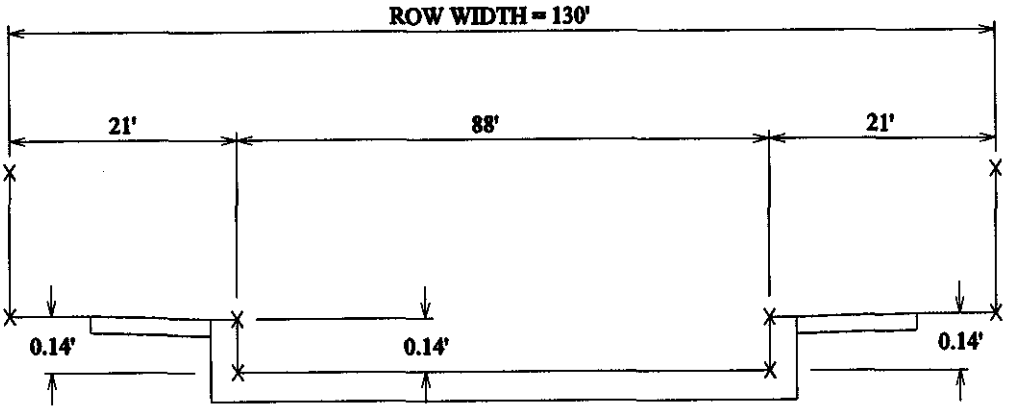
PB 100 YEARS

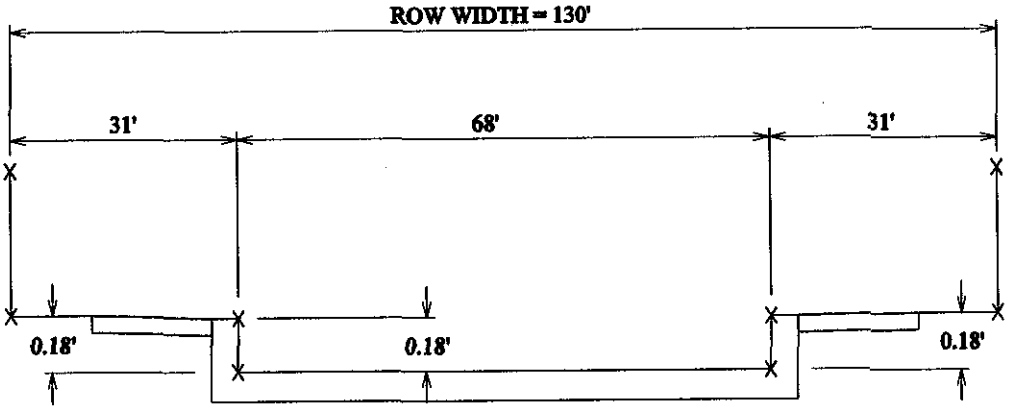
Parsons Brinckerhoff 6/26/02

D.3.3 AND D.3.4 TYPICAL STREET

ROUTING SECTIONS



TYPICAL ROUTING SECTION N.T.S.
6-LANE ARTERIAL STREET



TYPICAL ROUTING SECTION N.T.S.
4-LANE ARTERIAL STREET

REFERENCES: CITY OF MESA STANDARD DETAILS
CITY OF MESA QUARTER SECTION MAPS

NOTES: "X" REPRESENTS EIGHT-POINT CROSS-SECTION USED IN HEC-1 ROUTING.
ROAD DEPTHS BASED ON EQUIVALENT TYPICAL CROSS-SECTION FLOW AREA.

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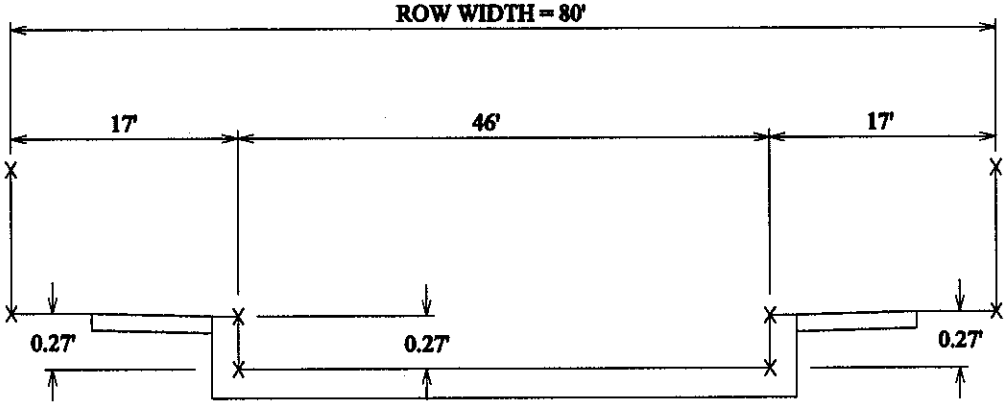
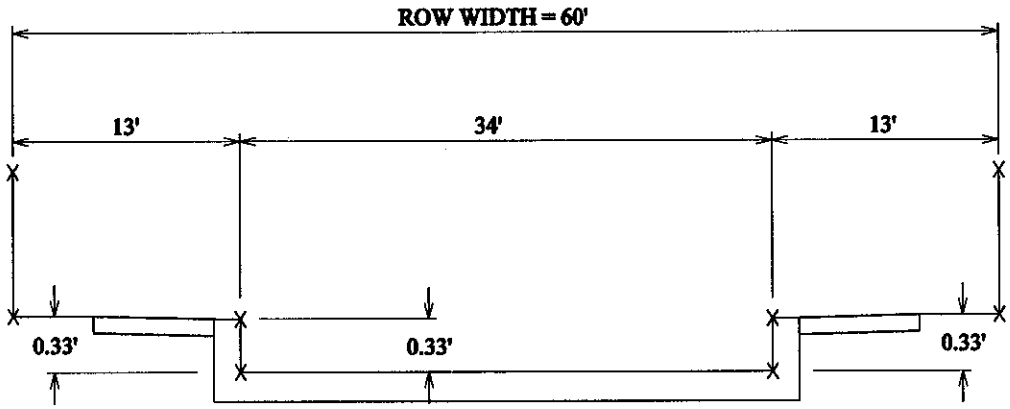
D.3.3
TYPICAL ARTERIAL STREET ROUTING SECTIONS



TYPICAL ROUTING SECTION N.T.S.
80-FT ROW COLLECTOR STREET



TYPICAL ROUTING SECTION N.T.S.
60-FT ROW COLLECTOR STREET

REFERENCES: CITY OF MESA STANDARD DETAILS
CITY OF MESA QUARTER SECTION MAPS

NOTES: "X" REPRESENTS EIGHT-POINT CROSS-SECTION USED IN HEC-1 ROUTING.
ROAD DEPTHS BASED ON EQUIVALENT TYPICAL CROSS-SECTION FLOW AREA.

D.3.5 CITY OF MESA SELECTED DETAILS

MESA STANDARD DETAILS

Amendment to the Uniform Standard Details

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ENGINEERING

2003

EFFECTIVE DATE: March 1, 2003

NOTES

1. ALL STREETS TO BE CONSTRUCTED W/A STRAIGHT CROWN OF 0.02 FT/FT.
2. WHERE 10" A.B.C. IS REQUIRED, IT IS TO BE INSTALLED IN (2) TWO EQUAL LAYERS.
3. A.B.C. FILL TO CONFORM TO SUBSECTION 702.2 (AGGREGATE BASE).
4. ASPHALT CONCRETE SHALL CONFORM TO THE EAST VALLEY ASPHALT CRITERIA, 1996 EDITION AND BE APPROVED BY THE EVA COMMITTEE.
5. FINISH ELEVATION OF THE ADJACENT PARKWAY SHALL BE 1" BELOW THE TOP OF SIDEWALK FOR A MINIMUM DISTANCE OF 3-FEET. BEYOND THE 3-FEET, THE SLOPE SHALL NOT EXCEED 6:1.
6. ALL RESIDENTIAL STREETS ADJACENT TO SCHOOLS SHALL RECEIVE 6" A.B.C. FILL IN LIEU OF 4".
7. SURFACE TREATMENT SHALL BE APPLIED AS FOLLOWS:
   ON "A" ASPHALT MIXES, APPLY GRADE SS-1h FOG SEAL IN ACCORDANCE WITH MAG SECTION 333 AT A RATE OF .1 GAL. PER SQ. YARD OR AS OTHERWISE DIRECTED BY THE CITY REPRESENTATIVE.

   ON "R" ASPHALT MIXES, APPLY A POLYMER MODIFIED ASPHALTIC EMULSION MEETING C.O.M. REQUIREMENTS, AT A RATE OF .1 GAL. PER SQ. YARD OR AS OTHERWISE DIRECTED BY THE ENGINEER. SEE MESA AMENDMENTS FOR SPECIFICATIONS.
8. UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO APPLICATION OF SURFACE TREATMENT.

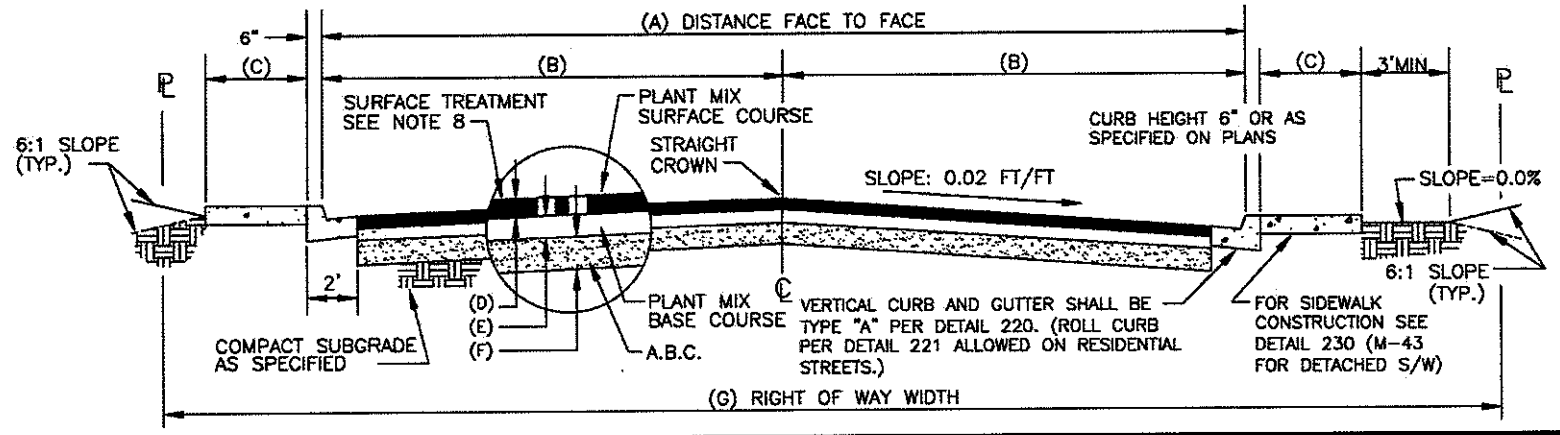
PAVEMENT TABLE

	ROADWAY (WIDTH)		SIDEWALK (WIDTH)	SURFACE COURSE (DEPTH) (TYPE)	BASE COURSE (DEPTH) (TYPE)	A.B.C. FILL (DEPTH)	RIGHT OF WAY (WIDTH)
	FACE TO FACE	CL TO FACE					
	(A)	(B)	(C)	(D)	(E)	(F)	(G)
RESIDENTIAL STREET	34'	17'	4'	1 1/2" R-12.5 **	2" R-25	4" SEE NOTE 6	50'
COLLECTOR STREET	34'/40'/46'	17'/20'/23'	5'	1 1/2" R-12.5 **	2" R-25	6"	60'/80'/80'
MAJOR COLLECTOR STREET *	68'	34'	5'	2 1/2" A-19 **	3" A-19	10" SEE NOTE 2	110'
ARTERIAL STREET *	68'/88'/94' ***	34'/44'/47'	5'	2 1/2" A-19 **	3" A-19	10" SEE NOTE 2	110' TO 130' ***
INDUSTRIAL/COMM. STREET	44' TO 48'	22' TO 24'	4'	1 1/2" A-12.5 **	3" A-19	10" SEE NOTE 2	60' TO 80'

*DETACHED, LINEAR SIDEWALKS ARE REQUIRED. SEE DETAIL M-43.

** SEE NOTE 7

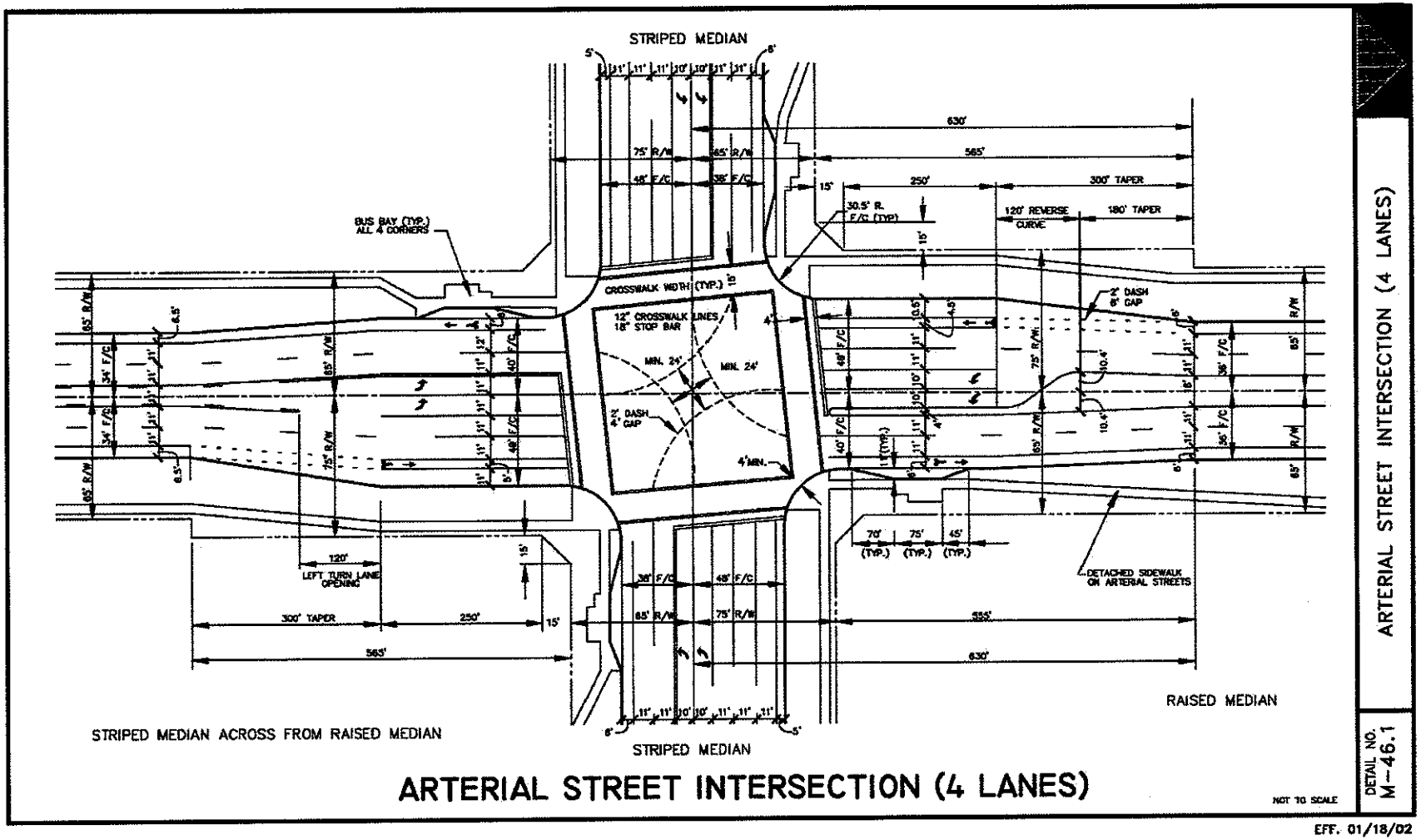
*** MAY BE WIDER AT INTERSECTIONS AND TURN LANES – SEE M-46.1 & M-46.2.

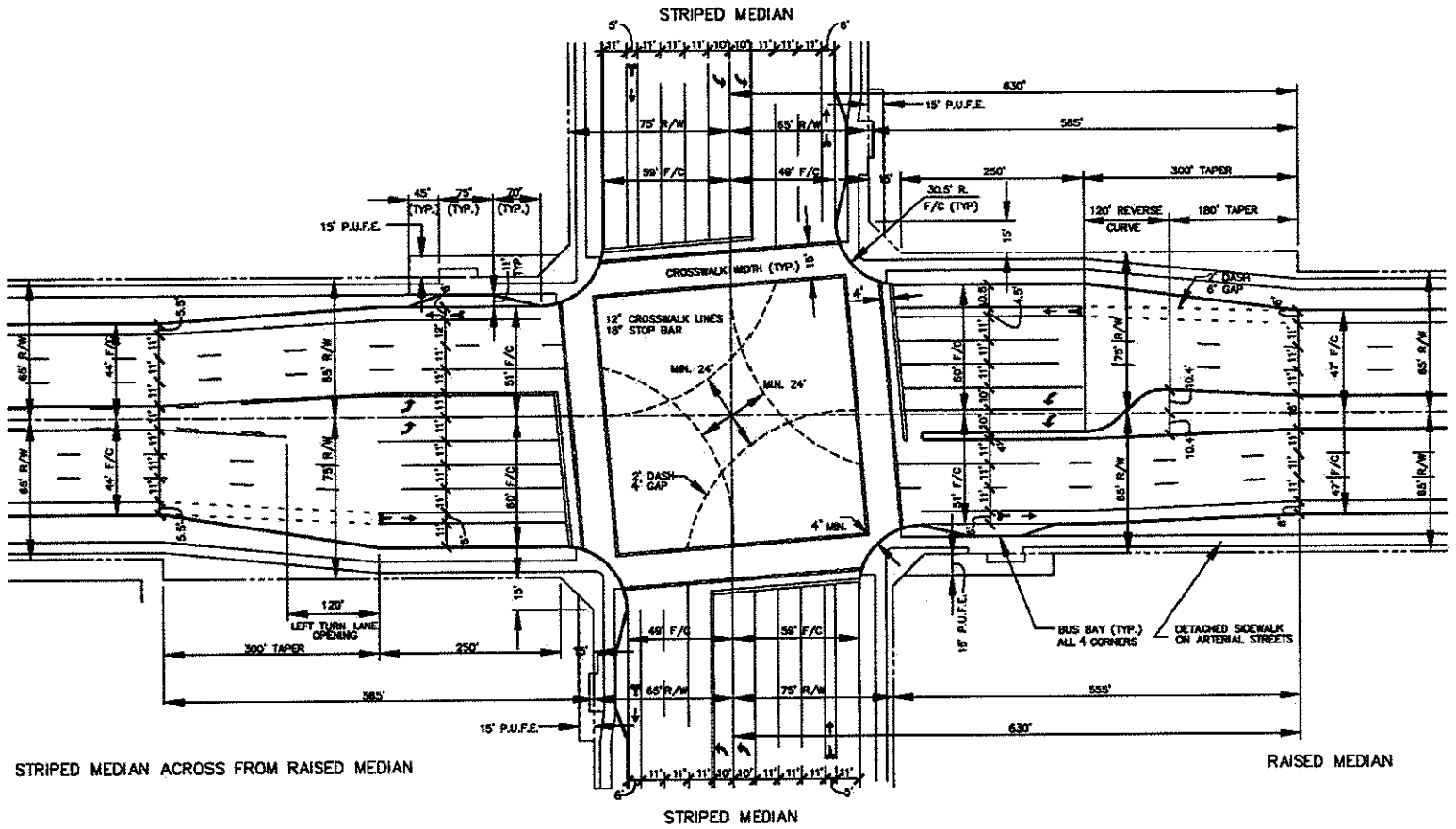


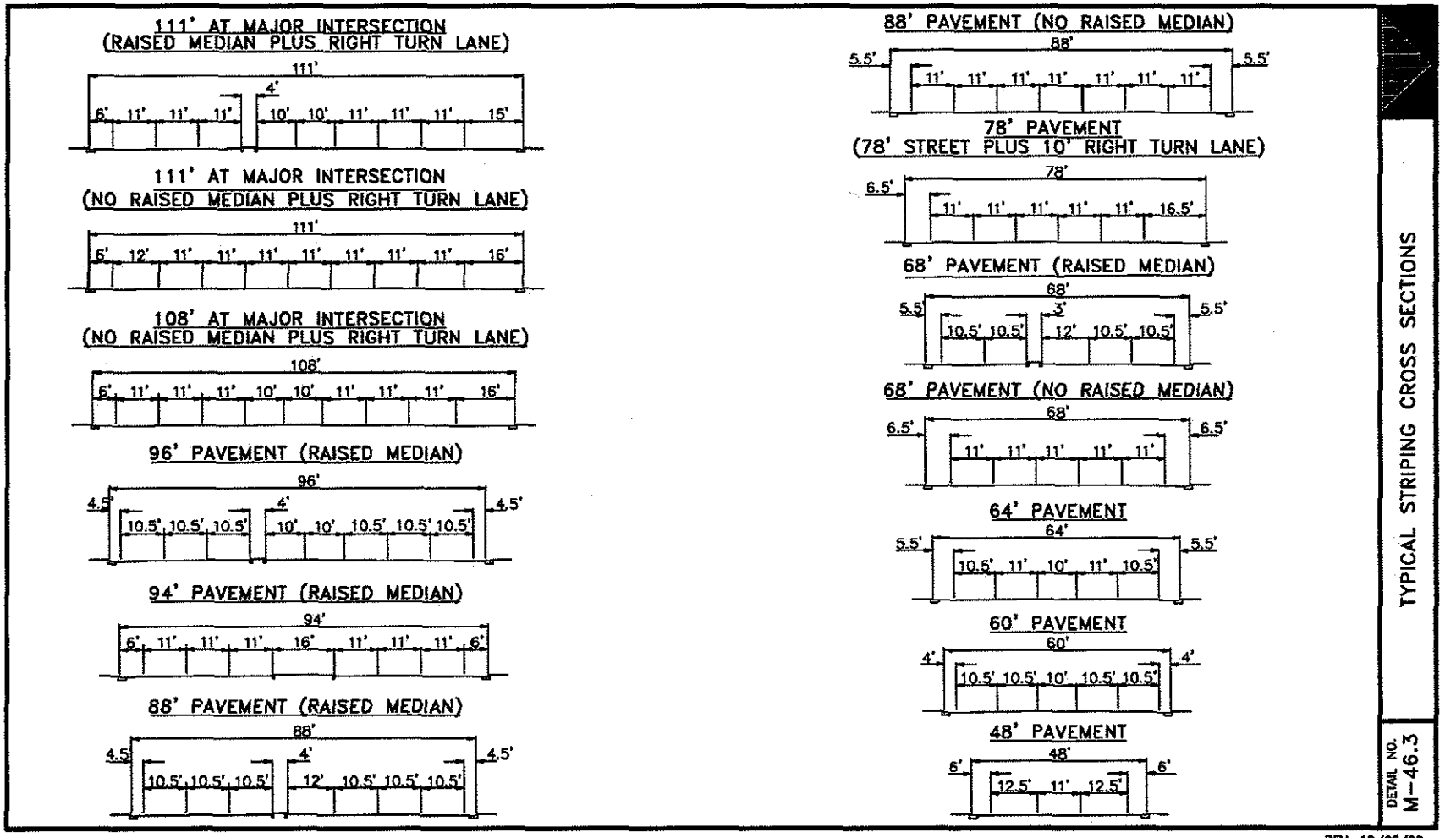
TYPICAL STREET SECTION

DETAIL NO. M-19.1

REV. 1/30/03


STRIPED MEDIAN
BUS BAY (TYP.) ALL 4 CORNERS
CROSSWALK WIDTH (TYP.)
12" CROSSWALK LINES
18" STOP BAR
MIN. 24'
2" DASH 4' GAP
4' MIN.
30.5' R. F/C (TYP)
120' REVERSE CURVE
180' TAPER
300' TAPER
250'
630'
565'
555'
2" DASH 6' GAP
LEFT TURN LANE OPENING
DETACHED SIDEWALK ON ARTERIAL STREETS
STRIPED MEDIAN ACROSS FROM RAISED MEDIAN
RAISED MEDIAN
STRIPED MEDIAN
ARTERIAL STREET INTERSECTION (4 LANES)
NOT TO SCALE
DETAIL NO. M-46.1
EFF. 01/18/02


STRIPED MEDIAN
630'
15' P.U.F.E.
565'
75' R/W
65' R/W
59' F/C
49' F/C
250'
300' TAPER
30.5' R.
F/C (TYP)
120' REVERSE CURVE
180' TAPER
45' (TYP.)
75' (TYP.)
70' (TYP.)
15' P.U.F.E.
CROSSWALK WIDTH (TYP.)
12' CROSSWALK LINES
18' STOP BAR
MIN. 24'
MIN. 24'
4½' DASH
4' GAP
4' MIN.
DASH
6' GAP
65' R/W
44' F/C
75' R/W
51' F/C
60' F/C
47' F/C
120'
LEFT TURN LANE OPENING
300' TAPER
250'
385'
15' P.U.F.E.
49' F/C
59' F/C
65' R/W
75' R/W
555'
630'
BUS BAY (TYP.) ALL 4 CORNERS
DETACHED SIDEWALK ON ARTERIAL STREETS
STRIPED MEDIAN ACROSS FROM RAISED MEDIAN
RAISED MEDIAN
STRIPED MEDIAN
ARTERIAL STREET INTERSECTION (6 LANES)
NOT TO SCALE
DETAIL NO. M-46.2
EFF 2/24/03


111' AT MAJOR INTERSECTION
(RAISED MEDIAN PLUS RIGHT TURN LANE)
111'
4'
6' 11' 11' 11' 10' 10' 11' 11' 11' 15'
111' AT MAJOR INTERSECTION
(NO RAISED MEDIAN PLUS RIGHT TURN LANE)
111'
6' 12' 11' 11' 11' 11' 11' 11' 11' 16'
108' AT MAJOR INTERSECTION
(NO RAISED MEDIAN PLUS RIGHT TURN LANE)
108'
6' 11' 11' 11' 10' 10' 11' 11' 11' 16'
96' PAVEMENT (RAISED MEDIAN)
96'
4.5' 4' 4.5'
10.5' 10.5' 10.5' 10' 10' 10.5' 10.5' 10.5'
94' PAVEMENT (RAISED MEDIAN)
94'
6' 11' 11' 11' 16' 11' 11' 11' 6'
88' PAVEMENT (RAISED MEDIAN)
88'
4.5' 4' 4.5'
10.5' 10.5' 10.5' 12' 10.5' 10.5' 10.5'
88' PAVEMENT (NO RAISED MEDIAN)
88'
5.5' 5.5'
11' 11' 11' 11' 11' 11' 11'
78' PAVEMENT
(78' STREET PLUS 10' RIGHT TURN LANE)
78'
6.5'
11' 11' 11' 11' 11' 16.5'
68' PAVEMENT (RAISED MEDIAN)
68'
5.5' 3' 5.5'
10.5' 10.5' 12' 10.5' 10.5'
68' PAVEMENT (NO RAISED MEDIAN)
68'
6.5' 6.5'
11' 11' 11' 11' 11'
64' PAVEMENT
64'
5.5' 5.5'
10.5' 11' 10' 11' 10.5'
60' PAVEMENT
60'
4' 4'
10.5' 10.5' 10' 10.5' 10.5'
48' PAVEMENT
48'
6' 6'
12.5' 11' 12.5'
TYPICAL STRIPING CROSS SECTIONS
DETAIL NO.
M-46.3
REV. 12/02/02

D.3.6 EQUIVALENT FLOW AREA CALCULATIONS

EQUIVALENT FLOW AREA CALCULATIONS FOR STREET ROUTING SECTIONS

6-LANE ARTERIAL STREET
Crown Height = 2% x 44 ft = 0.88 ft
Curb Height = 0.50 ft

Flow Area = 2 x [0.5 x 0.5 ft x (0.5 ft / 2%)] = 12.5 sq. ft.

Routing Section Flow Width = 88 ft
Routing Section Flow Depth = 12.5 sq. ft. / 88 ft = 0.14 ft

4-LANE ARTERIAL STREET
Crown Height = 2% x 34 ft = 0.68 ft
Curb Height = 0.50 ft

Flow Area = 2 x [0.5 x 0.5 ft (0.5 ft / 2%)] = 12.5 sq. ft.

Routing Section Flow Width = 68 ft
Routing Section Flow Depth = 12.5 sq. ft. / 68 ft = 0.18 ft

80-FOOT RIGHT-OF-WAY COLLECTOR STREET
Crown Height = 2% x 23 ft = 0.46 ft
Curb Height = 0.50 ft

Flow Area = 2 x [0.5 x 0.46 ft x 23 ft] + 2 x [23 ft x (0.5 ft - 0.46 ft)] = 12.42 sq. ft.

Routing Section Flow Width = 46 ft
Routing Section Flow Depth = 12.42 sq. ft. / 46 ft = 0.27 ft

60-FOOT RIGHT-OF-WAY COLLECTOR STREET
Crown Height = 2 % x 17 ft = 0.34 ft
Curb Height = 0.50 ft

Flow Area = 2 x [0.5 x 0.34 ft x 17 ft] + 2 x [17 ft x (0.5 ft - 0.34 ft)] = 11.22 sq. ft.

Routing Section Flow Width = 34 ft
Routing Section Flow Depth = 11.22 sq. ft. / 34 ft = 0.33 ft

D.3.7 NSTPS ESTIMATION

NSTPS ESTIMATION

NSTPS = [reach length (ft) / avg. vel. (fps)] / [time interval (min) * 60 (sec/min)]

Time Interval = 5 min.

Note: Velocity based on normal depth calculations, computed using *FlowMaster* software. See following example normal depth calculations.

HEC I.D.		Initial Run				Second Run			
		NSTPS	Q (cfs)	Route Length (ft)	Velocity (fps)	Calculated NSTPS	Q (cfs)	Velocity (fps)	NSTPS Calc.
100 WATERSHED	RC141	2	352	2560	9.78	1			
	RC142	2	60	2640	1.59	6			
	RC143	2	258	2560	2.29	4			
	RC144	2	755	2650	7.65	1			
	RC145	2	861	2660	7.87	1			
	RC146	2	1577	2650	9.19	1			
	RCI71	2	30	3700	4.09	3			
	RS101	2	100	1690	2.54	2			
	RS102S	2	231	2610	3.13	3			
	RS102W	2	5	2650	0.59	15			
	RS103	2	137	2640	3.14	3			
	RS104S	2	127	2630	1.98	4			
	RS104W	2	71	2700	1.05	9			
	RS105	2	19	2750	1.50	6			
	RS106S	2	109	2640	2.16	4			
	RS106W	2	64	2600	1.73	5			
	RS107	2	226	2650	3.01	3			
	RS108	2	301	2620	2.99	3			
	RS111S	2	78	2630	1.65	5			
	RS111W	2	114	2600	2.26	4			
	RS112	2	149	2580	2.26	4			
	RS113S	2	194	2630	2.49	4			
	RS113W	2	340	2680	1.50	6			
	RS114S	2	378	2660	4.40	2			
	RS114W	2	156	2690	0.95	9			
	RS115S	2	371	2650	3.34	3			
	RS115W	2	1	2590	0.47	18			
	RS116	2	422	2620	2.90	3			
	RS118S	2	62	2620	2.06	4			
	RS118W	2	124	2030	3.13	2			

HEC I.D.		Initial Run				Second Run			
		NSTPS	Q (cfs)	Route Length (ft)	Velocity (fps)	Calculated NSTPS	Q (cfs)	Velocity (fps)	NSTPS Calc.
100 WATERSHED	RS119	2	192	1240	1.93	2			
	RS120	2	279	1700	3.12	2			
	RS121S	2	322	2650	3.33	3			
	RS121W	2	166	2670	1.92	5			
	RS122S	2	260	2620	3.54	2			
	RS122W	2	227	2690	1.67	5			
	RS123S	2	412	2600	4.61	2			
	RS123W	2	225	2600	2.52	3			
	RS124	2	714	2650	5.58	2			
	RS126S	2	56	2640	1.73	5			
	RS126W	2	32	2560	1.28	7			
	RS127S	2	224	2620	3.29	3			
	RS127W	2	72	1970	2.12	3			
	RS128	2	194	3220	3.39	3			
	RS129S	2	486	2620	3.84	2			
	RS129W	2	137	2670	2.19	4			
	RS130S	2	347	2630	4.52	2			
	RS130W	2	135	2690	1.83	5			
	RS131S	2	480	2650	4.14	2			
	RS131W	2	90	2600	1.56	6			
	RS132	2	854	2630	6.05	1			
	RS133S	2	23	2550	0.54	16			
	RS133W	2	239	2590	2.73	3			
	RS134S	2	165	2400	2.75	3			
	RS134W	2	154	1280	2.43	2			
	RS135	2	217	1280	2.50	2			
	RS136S	2	42	2450	1.04	8			
	RS136W	2	130	2600	2.00	4			
	RS137S	2	561	2350	3.79	2			
	RS137W	2	95	2660	1.80	5			
	RS138S	2	188	2400	2.31	3			
	RS138W	2	315	2660	2.59	3			
	RS139S	2	727	2250	4.18	2			
	RS139W	2	113	2660	1.93	5			
	RS140	2	1001	2400	5.59	1			
	RS17	2	73	1690	2.24	3			
	RS21	2	43	2560	2.32	4			
	RS25	2	59	2080	2.61	3			
	RS34	2	74	1360	2.02	2			

HEC I.D.		Initial Run				Second Run			NSTPS Calc.
		NSTPS	Q (cfs)	Route Length (ft)	Velocity (fps)	Calculated NSTPS	Q (cfs)	Velocity (fps)	
100 WATERSHED	RS44B	2	118	1150	2.27	2			
	RS51	2	52	3400	1.69	7			
	RS67	2	54	3400	1.72	7			
	RSD36	2	112	4060	2.20	6			
	RSD48	2	163	3600	1.66	7			
200 WATERSHED	RC146A	2	180	2565	3.08	3	180	3.08	3
	RC221	2	123	2540	3.11	3	123	3.11	3
	RC222	2	285	2700	3.95	2	283	3.94	2
	RC223	2	470	2740	4.39	2	468	4.38	2
	RC224	2	546	4160	5.28	3	551	5.30	3
	RC244	2	495	1400	5.12	1	496	5.13	1
	RC244B	2	494	1150	9.92	1	495	9.92	1
	RC245	2	444	2650	4.21	2	438	4.19	2
	RC247	2	956	2390	7.07	1	953	7.06	1
	RC248	2	1250	1985	7.46	1	1250	7.46	1
	RC249	2	1304	3325	7.00	2	1316	7.02	2
	RC250	2	1618	1770	9.08	1	1630	9.10	1
	RS202S	2	46	2645	1.28	7	55	1.35	7
	RS202W	2	44	1900	1.75	4	46	1.78	4
	RS203	2	109	3120	2.37	4	120	2.43	4
	RS204N	2	213	2115	4.46	2	218	3.68	2
	RS204W	2	116	2675	3.41	3	122	3.48	3
	RS206	2	189	470	6.12	1	195	6.20	1
	RS208S	2	39	2650	1.31	7	48	1.41	6
	RS208W	2	65	2530	1.57	5	75	1.67	5
	RS209	2	148	2520	1.67	5	149	1.68	5
	RS210S	2	68	2630	1.58	6	75	1.63	5
	RS210W	2	97	2715	2.39	4	106	2.47	4
	RS211	2	222	2750	3.55	3	221	3.55	3
	RS212	2	379	825	4.52	1	375	4.50	1
	RS214S	2	103	2350	2.11	4	105	2.13	4
	RS214W	2	24	2540	1.34	6	26	1.37	6
	RS215S	2	60	1490	1.99	2	59	1.98	3
	RS215W	2	64	2530	1.54	5	66	1.55	5
	RS216S	2	73	1325	1.97	2	70	1.95	2
	RS216W	2	189	2700	2.92	3	186	2.90	3
	RS217S	2	94	1325	2.93	2	93	2.92	2
	RS217W	2	160	2745	2.82	3	160	2.82	3
	RS218	2	88	3065	2.52	4	95	2.58	4

HEC I.D.		Initial Run				Second Run			NSTPS Calc.
		NSTPS	Q (cfs)	Route Length (ft)	Velocity (fps)	Calculated NSTPS	Q (cfs)	Velocity (fps)	
200 WATERSHED	RS226S	2	21	2635	1.92	5	22	1.96	4
	RS226W	2	10	2525	1.20	7	12	1.25	7
	RS227S	2	68	2645	2.11	4	71	2.13	4
	RS227W	2	6	2730	1.22	7	7	1.26	7
	RS228S	2	34	2490	1.63	5	35	1.65	5
	RS228W	2	73	2715	1.83	5	76	1.86	5
	RS229S	2	57	2640	1.94	5	62	1.99	4
	RS229W	2	76	4165	2.23	6	85	2.30	6
	RS231	2	30	5200	1.92	9	39	2.11	8
	RS232S	2	67	2650	2.17	4	73	2.23	4
	RS232W	2	4	2585	0.36	24	11	0.54	16
	RS233S	2	99	2650	2.94	3	100	2.95	3
	RS233W	2	80	2575	2.09	4	82	2.12	4
	RS234S	2	41	2640	1.93	5	44	1.96	4
	RS234W	2	23	2720	1.38	7	26	1.43	6
	RS235S	2	62	3050	1.92	5	69	2.01	5
	RS235W	2	111	2705	3.37	3	113	3.39	3
	RS236S	2	158	2640	2.35	4	166	2.40	4
	RS236W	2	135	2650	3.24	3	138	3.26	3
	RS237	2	293	480	2.00	1	293	2.00	1
	RS239S	2	74	2310	2.32	3	79	2.37	3
	RS239W	2	91	2615	1.79	5	106	1.91	5
	RS240S	2	183	2460	1.85	4	190	1.88	4
	RS240W	2	79	2620	1.10	8	92	1.17	7
	RS241S	2	173	2290	2.41	3	180	2.45	3
	RS241W	2	72	1990	1.93	3	77	1.97	3
	RS242S	2	63	2405	0.99	8	71	1.03	8
	RS242W	2	125	3330	2.29	5	129	2.32	5
	RS243S	2	175	2280	1.94	4	188	2.00	4
	RS243W	2	243	1620	2.17	2	249	2.19	2
300 WATERSHED	R310AS	2	33	2620	1.16	8			
	RC314	2	10	5248	0.8	22			
	RS301S	2	23	2750	0.96	10			
	RS301W	2	75	3350	1.22	9			
	RS302S	2	4	2630	0.28	31			
	RS302W	2	146	2750	1.42	6			
	RS303	2	218	2700	2.23	4			
	RS304S	2	143	5700	1.84	10			

HEC I.D.		Initial Run				Second Run			NSTPS Calc.
		NSTPS	Q (cfs)	Route Length (ft)	Velocity (fps)	Calculated NSTPS	Q (cfs)	Velocity (fps)	
300 WATERSHED	RS304W	2	54	4560	1.58	10			
	RS305	2	24	5240	0.61	29			
	RS306	2	184	2700	1.86	5			
	RS307	2	1	2590	0.38	23			
	RS308S	2	87	2580	0.91	9			
	RS308W	2	262	2280	1.77	4			
	RS309S	2	240	2590	1.69	5			
	RS309W	2	138	5360	1.86	10			
	RS310A	2	41	5120	0.96	18			
	RS311	2	554	2600	2.04	4			
	RS312	2	186	2610	2.08	4			
	RS313	2	463	5330	4.24	4			
	RS401	2	722	2340	2.99	3			
	RS402	2	484	2950	1.12	9			
	RS403	2	213	2610	2.19	4			
	RSCST	2	722	2700	2.99	3			
	RSDIVR	2	27	2700	0.36	25			

D.3.8 SLOPE COMPARISON

SLOPE COMPARISION

HEC-1 ID	HEC-1 ROUTE SLOPE (FT/FT)	AVERAGE SUB-BASIN SLOPE (FT/FT)
RP203	0.0017	0.0027
RP220	0.0023	0.0023
RC224	0.0030	0.0027
RP227	0.0025	0.0022
RP232	0.0028	0.0024
RP234	0.0029	0.0022
RP236	0.0020	0.0017
RP239	0.0020	0.0026
RP241	0.0021	0.0019
RP242	0.0025	0.0023
RS242W	0.0025	0.0023
RP243	0.0015	0.0016
RP245	0.0020	0.0022
RC247	0.0011	0.0019
RC249	0.0008	0.0023
RS204N	0.0040	0.0040
RP111	0.0020	0.0020
RS114S	0.0019	0.0011
RP118	0.0020	0.0028
RS120	0.0024	0.0016
RS124	0.0026	0.0013
RP127	0.0020	0.0026
RS128	0.0019	0.0011
RS130S	0.0023	0.0021
RS131S	0.0030	0.0020
RP131	0.0025	0.0020
RS132	0.0027	0.0015
RS130S	0.0023	0.0021
RP138	0.0010	0.0011
RS139S	0.0009	0.0011
RP140	0.0010	0.0005
RS140	0.0017	0.0005
RC145	0.0016	0.0011
RC146	0.0012	0.0005
RP311	0.0020	0.0007
RS313	0.0013	0.0012
RP315	0.0001	0.0020

D.3.9 SUB-BASIN UNIT DISCHARGE SUMMARY

SUB-BASIN UNIT DISCHARGE SUMMARY

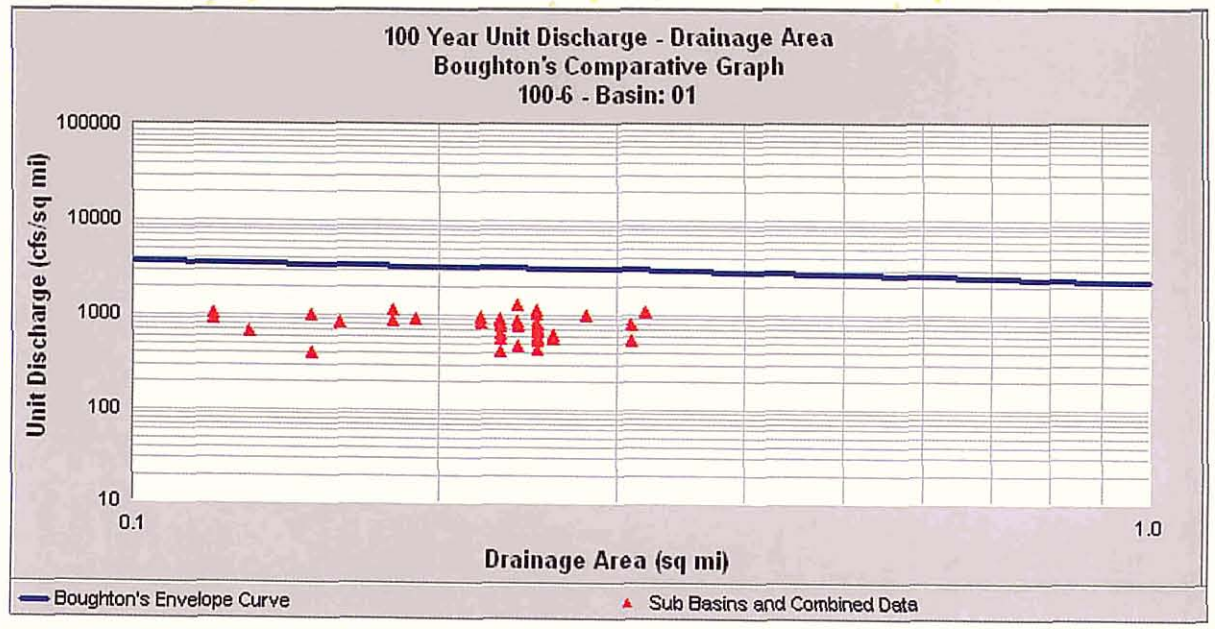
HEC-1 ID	6-HOUR			24-HOUR			NOTE
	AREA (SQ MI)	Q100,6 (CFS)	UNIT DISCHARGE (CFS/SQ MI)	AREA (SQ MI)	Q100,24 (CFS)	UNIT DISCHARGE (CFS/SQ MI)	
SB101	0.07	70	1000	0.07	95	1357	
SB102	0.31	225	726	0.31	251	810	
SB103	0.23	166	722	0.23	195	848	
SB104	0.25	147	588	0.25	155	620	
SB105	0.23	160	696	0.23	177	770	
SB106	0.23	140	609	0.23	146	635	
SB107	0.24	172	717	0.24	190	792	
SB108	0.25	116	464	0.25	111	444	
SB109	0.08	61	763	0.08	73	913	
SB110	0.08	51	638	0.08	54	675	
SB111	0.03	33	1100	0.03	40	1333	
SB112	0.22	166	755	0.22	187	850	
SB113	0.25	161	644	0.25	172	688	
SB114	0.25	139	556	0.25	141	564	
SB115	0.26	143	550	0.26	144	554	
SB116	0.24	120	500	0.24	115	479	
SB117	0.08	59	738	0.08	63	788	
SB118	0.22	193	877	0.22	206	936	
SB119	0.18	139	772	0.18	156	867	
SB120	0.15	120	800	0.15	151	1007	
SB121	0.16	120	750	0.16	132	825	
SB122	0.26	153	588	0.26	161	619	
SB123	0.26	147	565	0.26	147	565	
SB124	0.25	124	496	0.25	114	456	
SB125	0.13	90	692	0.13	87	669	
SB126	0.18	186	1033	0.18	216	1200	
SB127	0.25	254	1016	0.25	286	1144	
SB128	0.19	147	774	0.19	171	900	
SB129	0.31	160	516	0.31	167	539	
SB130	0.25	131	524	0.25	135	540	
SB131	0.25	141	564	0.25	146	584	
SB132	0.25	160	640	0.25	170	680	
SB133	0.28	259	925	0.28	285	1018	
SB134	0.25	240	960	0.25	263	1052	
SB135	0.12	106	883	0.12	112	933	
SB136	0.12	115	958	0.12	128	1067	
SB137	0.25	204	816	0.25	213	852	
SB138	0.25	187	748	0.25	201	804	
SB139	0.25	170	680	0.25	182	728	
SB140	0.25	175	700	0.25	179	716	
SB141	0.32	282	881	0.32	297	928	
SB142	0.23	110	478	0.23	97	422	
SB143	0.23	187	813	0.23	188	817	SB143 drains to Emerald Park. Slope was revised to represent the average sub-basin slope.

HEC-1 ID	6-HOUR			24-HOUR			NOTE
	AREA (SQ MI)	Q100,6 (CFS)	UNIT DISCHARGE (CFS/SQ MI)	AREA (SQ MI)	Q100,24 (CFS)	UNIT DISCHARGE (CFS/SQ MI)	
SB144	0.23	145	630	0.23	133	578	
SB145	0.24	205	854	0.24	211	879	
SB146	0.24	182	758	0.24	183	763	
SB147	0.23	132	574	0.23	137	596	
SB148	0.15	68	453	0.15	60	400	
SB149	0.06	69	1150	0.06	81	1350	
SB201	0.090	103	1144	0.090	183	2033	
SB202	0.160	128	800	0.160	169	1056	
SB203	0.180	165	917	0.180	244	1356	
SB204	0.240	197	821	0.240	271	1129	
SB205	0.210	145	690	0.210	191	910	
SB206	0.140	124	886	0.140	193	1379	
SB207	0.120	98	817	0.120	148	1233	
SB208	0.170	112	659	0.170	142	835	
SB209	0.190	155	816	0.190	203	1068	
SB210	0.170	131	771	0.170	151	888	
SB211	0.260	215	827	0.260	274	1054	
SB212	0.210	176	838	0.210	244	1162	
SB213	0.190	123	647	0.190	182	958	SB213 drains to center of basin, then along canal. Tc was defaulting to 1.5 hr for the 24-hr event. Slope was revised to represent average sub-basin slope.
SB214	0.170	128	753	0.170	152	894	
SB215	0.170	115	676	0.170	141	829	
SB216	0.240	224	933	0.240	274	1142	
SB217	0.110	88	800	0.110	115	1045	
SB218	0.060	40	667	0.060	49	817	
SB219	0.180	146	811	0.180	213	1183	
SB220	0.190	197	1037	0.190	264	1389	SB220 drains to the County Club Drive / SPRR underpass. Slope was revisedto represent the average sub-basin slope.
SB221	0.090	80	889	0.090	109	1211	
SB222	0.120	108	900	0.120	134	1117	
SB223	0.130	123	946	0.130	157	1208	
SB224	0.130	116	892	0.130	145	1115	
SB225	0.170	124	729	0.170	154	906	
SB226	0.050	36	720	0.050	39	780	
SB227	0.120	101	842	0.120	120	1000	
SB228	0.130	115	885	0.130	138	1062	Tc was defaulting to 1.5 hr for the 24-hr event. Slope was revised to represent the average sub-basin slope.
SB229	0.130	104	800	0.130	130	1000	
SB230	0.200	182	910	0.200	214	1070	
SB231	0.080	70	875	0.080	84	1050	
SB232	0.190	142	747	0.190	180	947	
SB233	0.240	178	742	0.240	217	904	

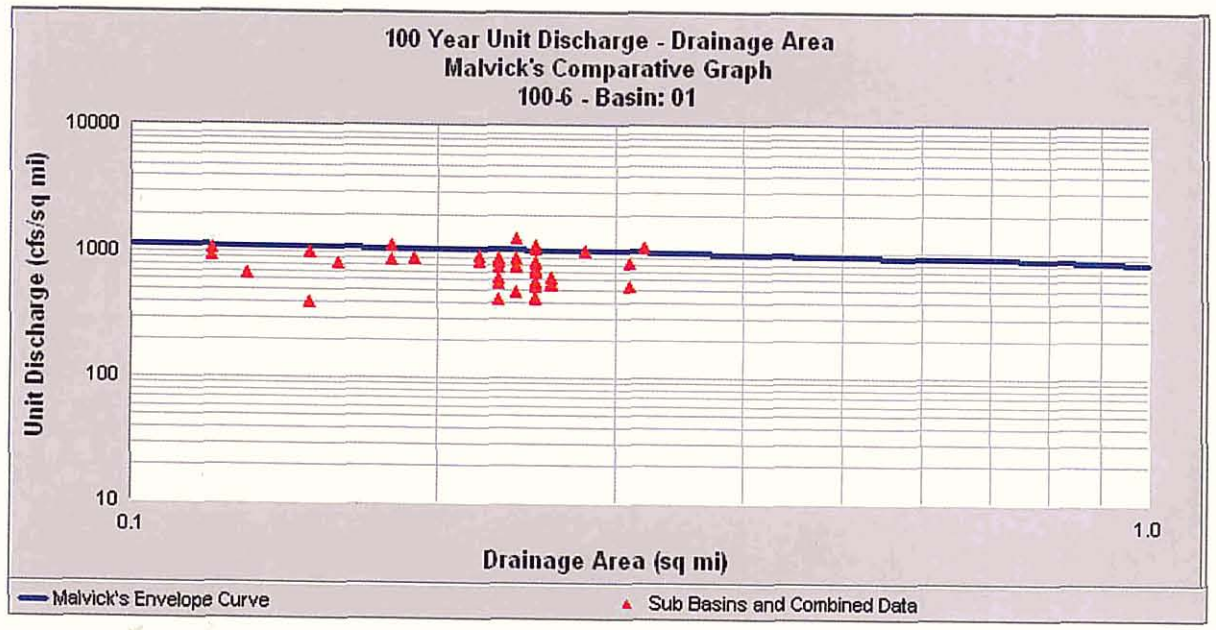
HEC-1 ID	6-HOUR			24-HOUR			NOTE
	AREA (SQ MI)	Q100,6 (CFS)	UNIT DISCHARGE (CFS/SQ MI)	AREA (SQ MI)	Q100,24 (CFS)	UNIT DISCHARGE (CFS/SQ MI)	
SB234	0.240	176	733	0.240	229	954	
SB235	0.250	195	780	0.250	266	1064	
SB236	0.250	197	788	0.250	256	1024	
SB237	0.250	195	780	0.250	253	1012	
SB238	0.100	60	600	0.100	80	800	Very flat Tc flow path, very low density residential area.
SB239	0.240	175	729	0.240	228	950	
SB240	0.250	188	752	0.250	243	972	
SB241	0.250	212	848	0.250	277	1108	
SB242	0.250	199	796	0.250	250	1000	
SB243	0.280	214	764	0.280	256	914	
SB244	0.220	178	809	0.220	229	1041	
SB245	0.230	198	861	0.230	250	1087	
SB246	0.230	216	939	0.230	267	1161	
SB247	0.130	102	785	0.130	144	1108	SB247 drains to Fiesta Lakes G.C. Slope was revised to represent the average sub-basin slope.
SB248	0.100	91	910	0.100	114	1140	
SB249	0.180	159	883	0.180	187	1039	
SB250	0.300	263	877	0.300	342	1140	
SB251	0.130	123	946	0.130	143	1100	
SB252	0.060	77	1283	0.060	103	1717	
SB253	0.050	42	840	0.050	44	880	
SB254	0.080	63	788	0.080	68	850	
SB301	0.230	113	491	0.230	105	457	
SB302	0.260	152	585	0.260	142	546	
SB303	0.230	141	613	0.230	134	583	
SB304	0.230	137	596	0.230	125	543	
SB305	0.360	197	547	0.360	182	506	Tc was defaulting to 1.5 hr for the 24-hr event. Slope was revised to represent the average sub-basin slope.
SB306	0.230	183	796	0.230	170	739	
SB307	0.270	143	530	0.270	123	456	Very flat Tc flow path.
SB308	0.280	202	721	0.280	182	650	
SB309	0.220	178	809	0.220	164	745	
SB310	1.110	777	700	1.110	701	632	
SB311	0.830	445	536	0.830	404	487	
SB312	0.280	250	893	0.280	235	839	
SB313	0.220	241	1095	0.220	252	1145	
SB314	0.500	438	876	0.500	408	816	
SB315	0.490	477	973	0.490	475	969	
SB401	0.230	234	1017	0.230	104	452	
SB402	0.550	503	915	0.550	529	962	
SB403	0.250	225	900	0.250	274	1096	

D.3.10 ENVELOPE CURVES

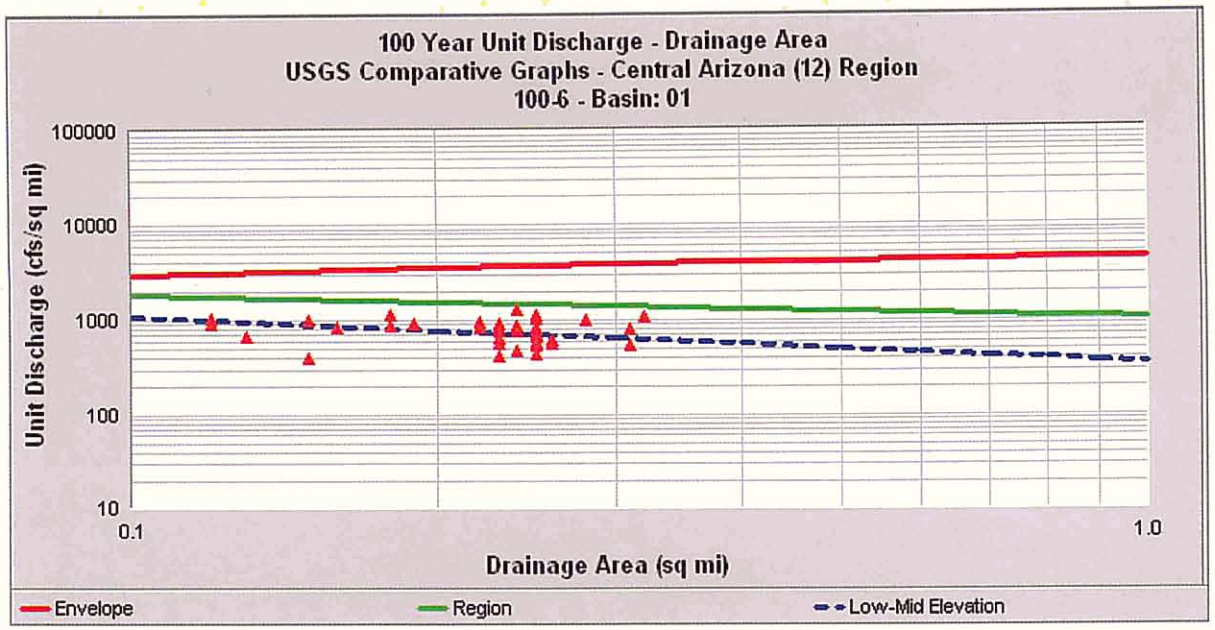
100-Year, 6-Hour Results for 100 Watershed – Boughton



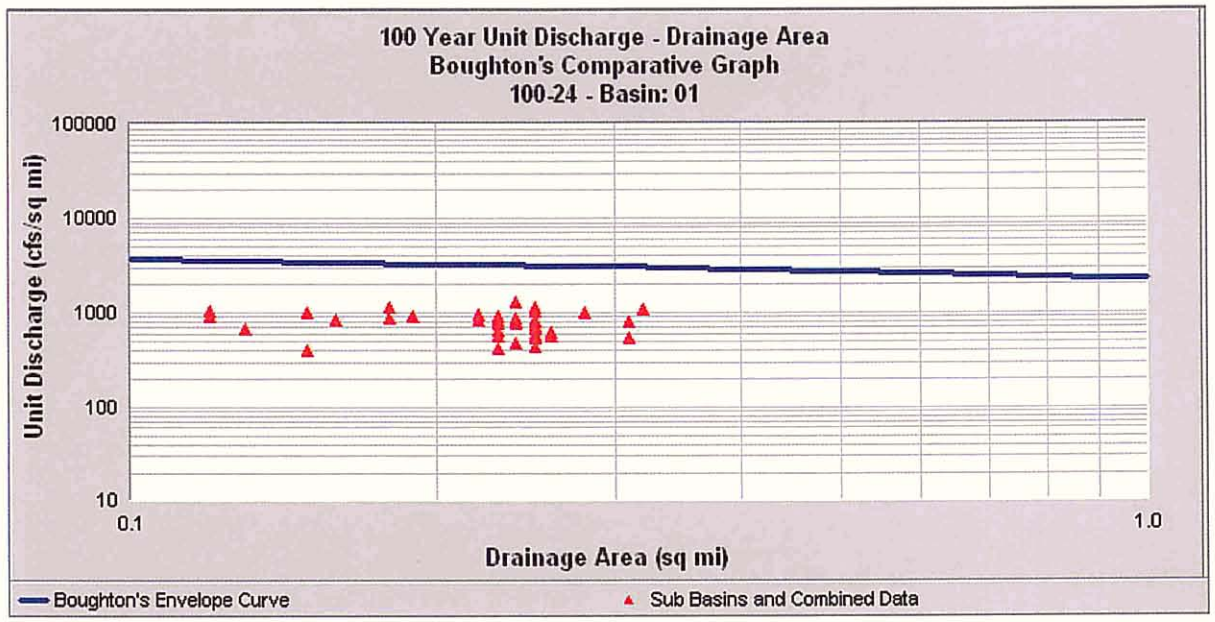
100-Year, 6-Hour Results for 100 Watershed – Malvick



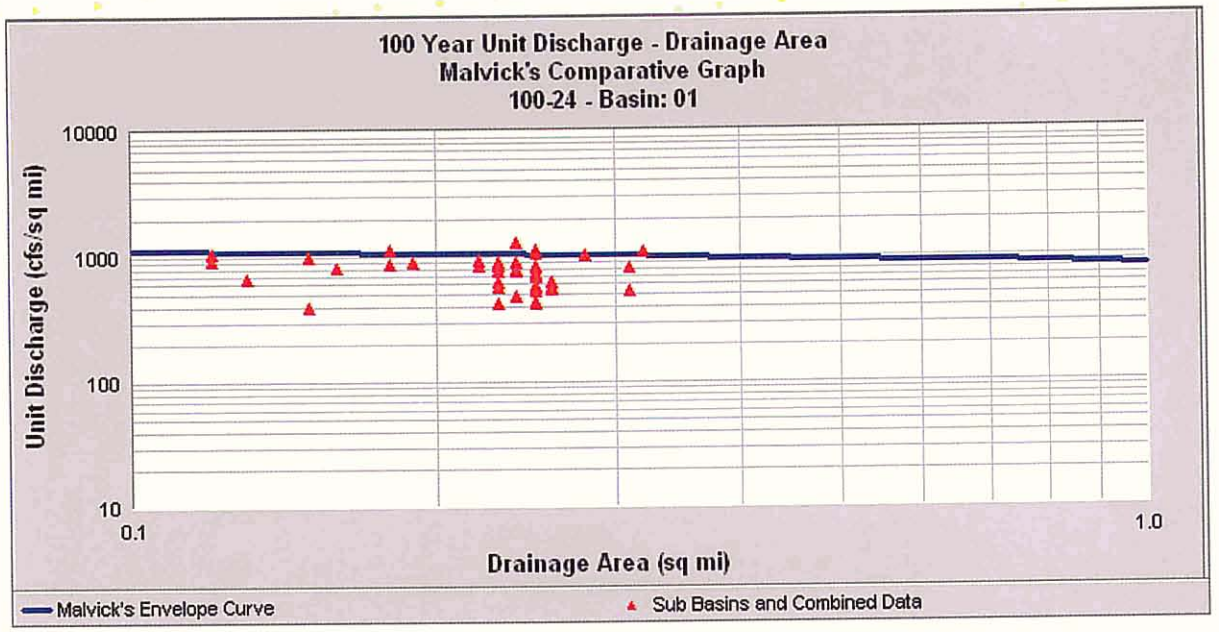
100-Year, 6-Hour Results for 100 Watershed – USGS



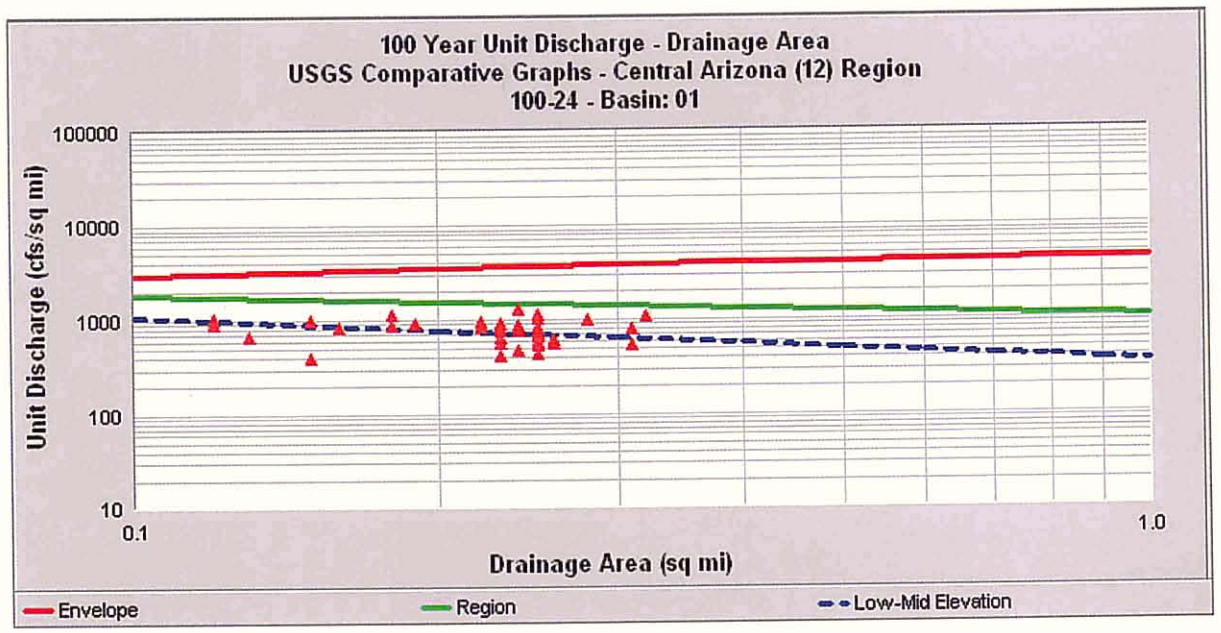
100-Year, 24-Hour Results for 100 Watershed – Boughton



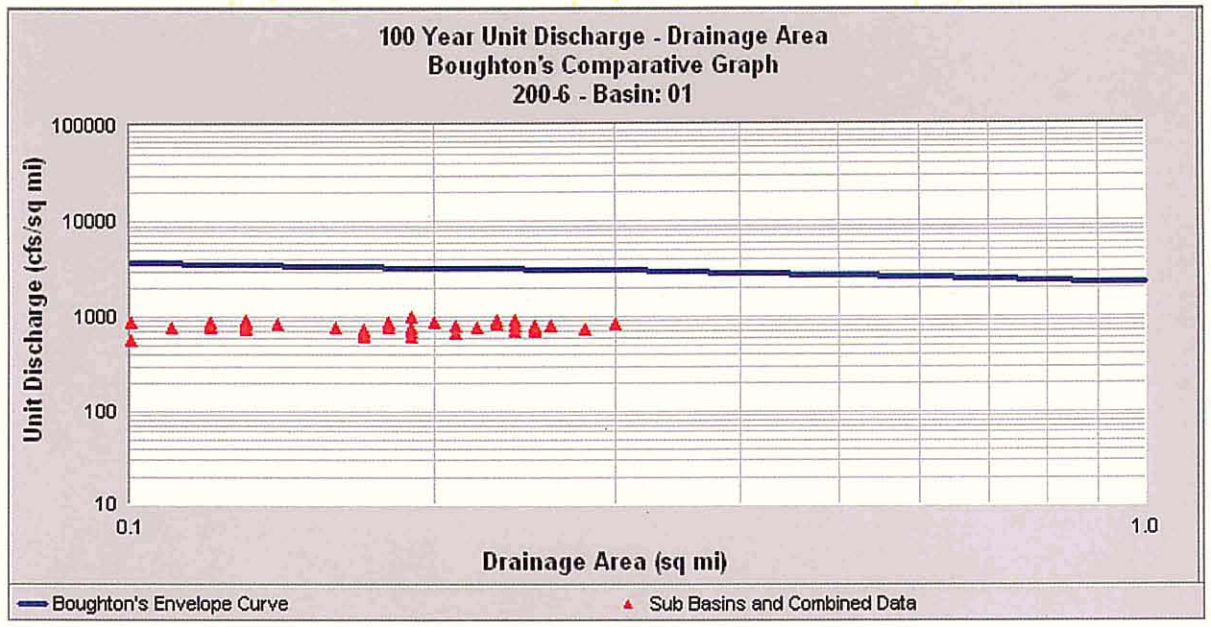
100-Year, 24-Hour Results for 100 Watershed – Malvick



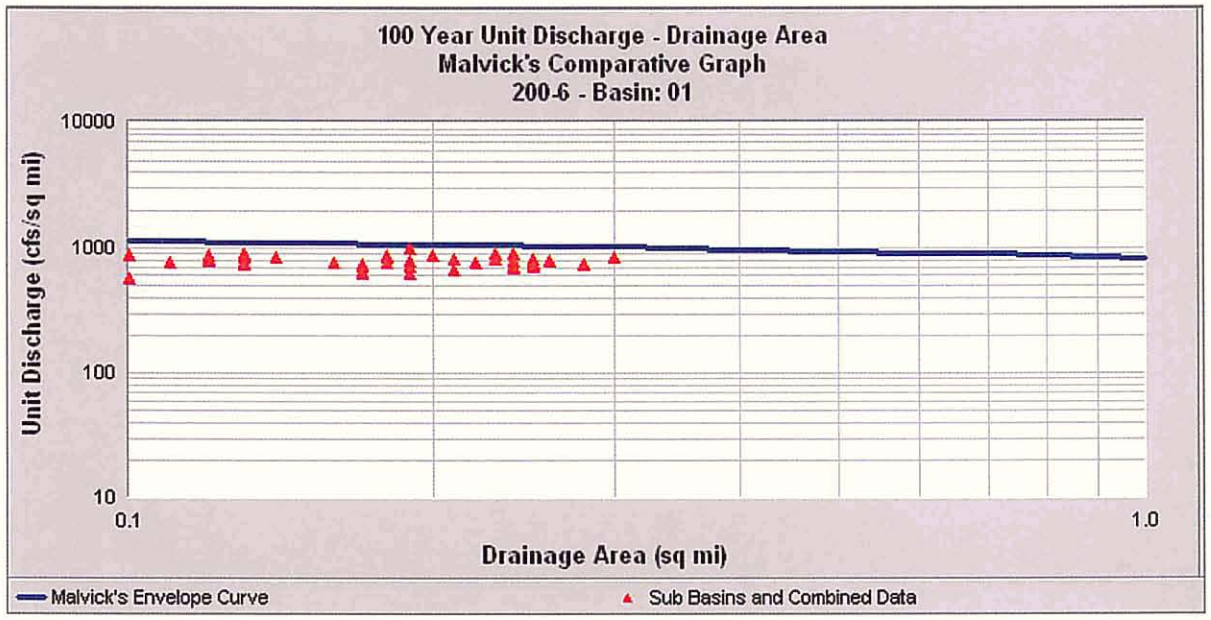
100-Year, 24-Hour Results for 100 Watershed – USGS



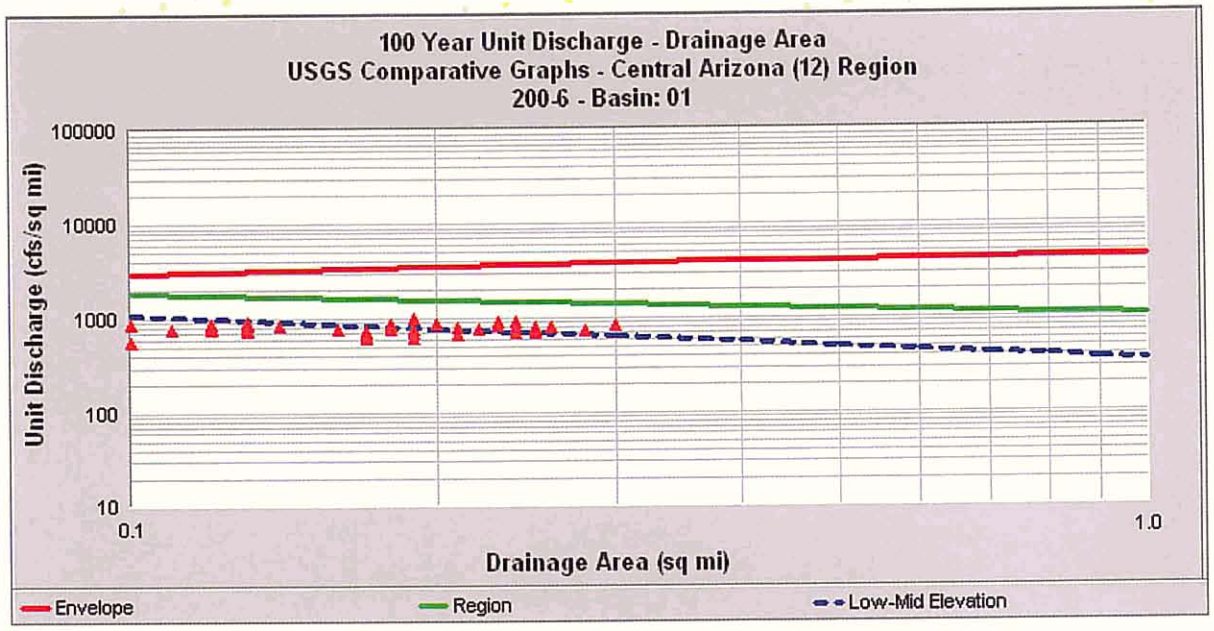
100-Year, 6-Hour Results for 200 Watershed – Boughton



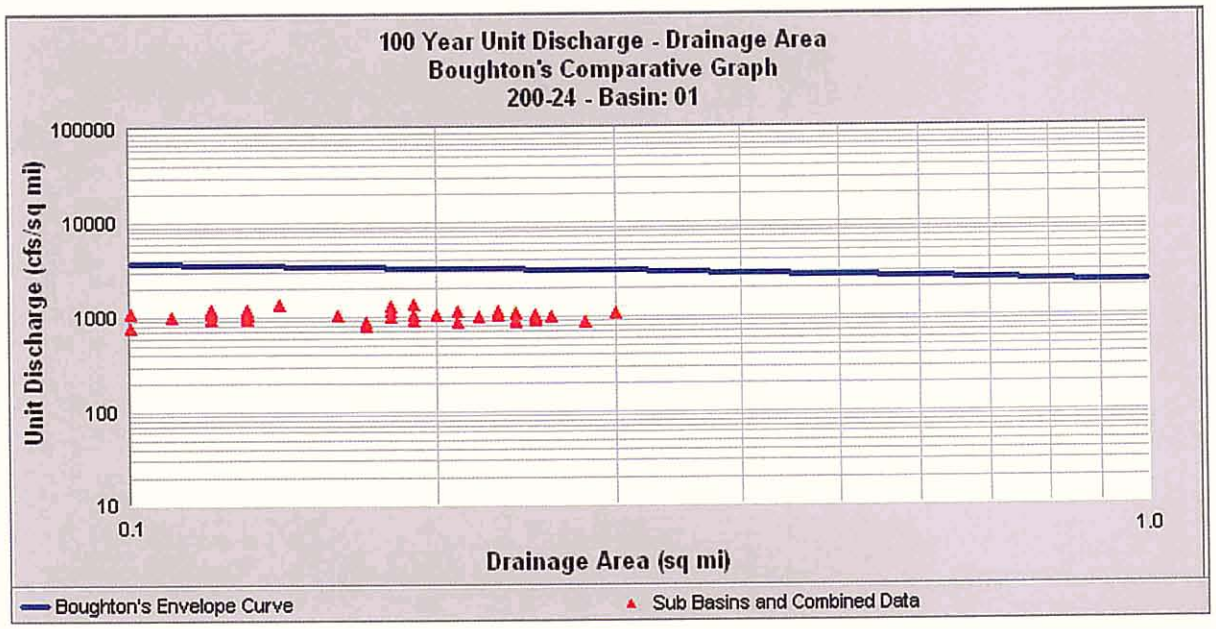
100-Year, 6-Hour Results for 200 Watershed – Malvick



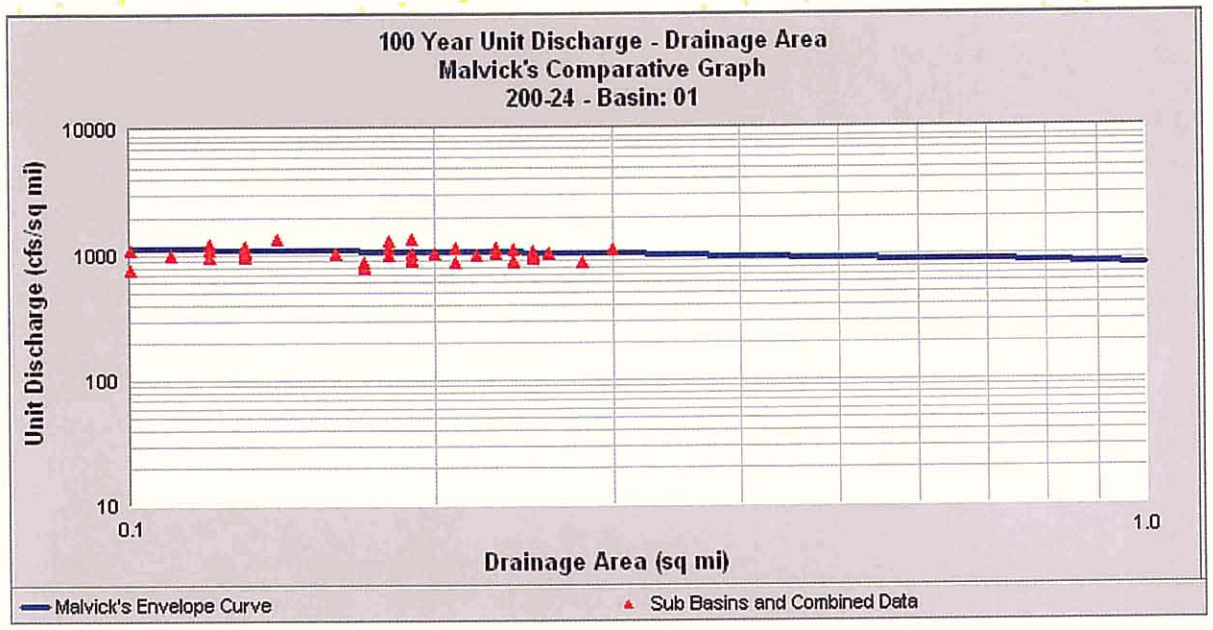
100-Year, 6-Hour Results for 200 Watershed – USGS



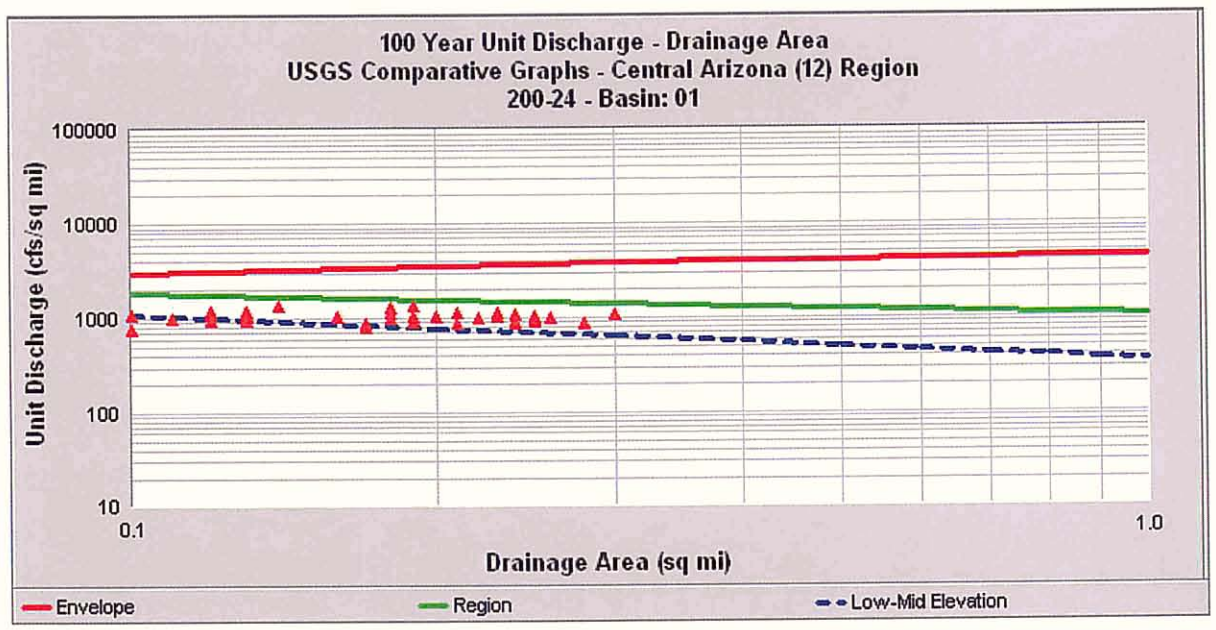
100-Year, 24-Hour Results for 200 Watershed – Boughton



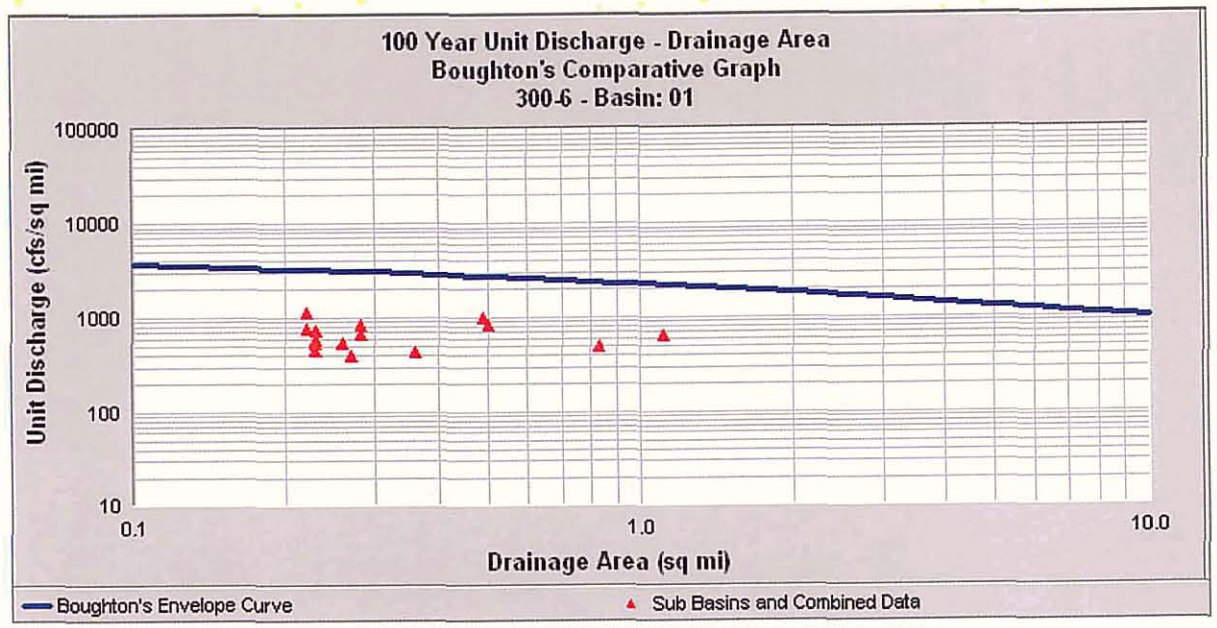
100-Year, 24-Hour Results for 200 Watershed – Malvick



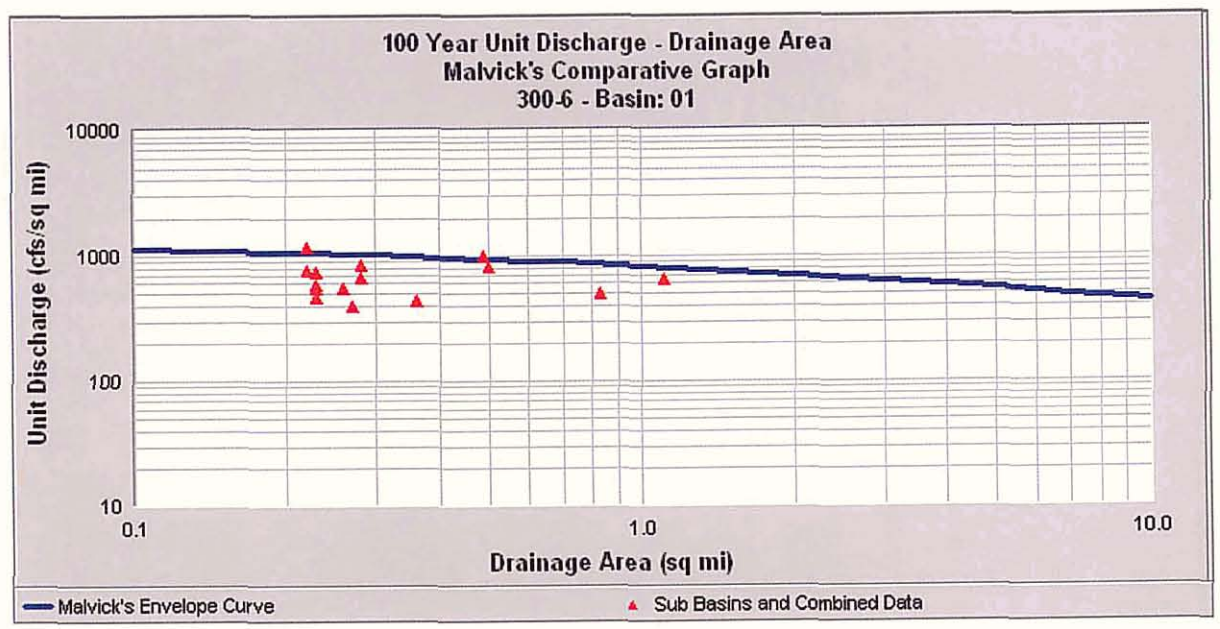
100-Year, 24-Hour Results for 200 Watershed – USGS



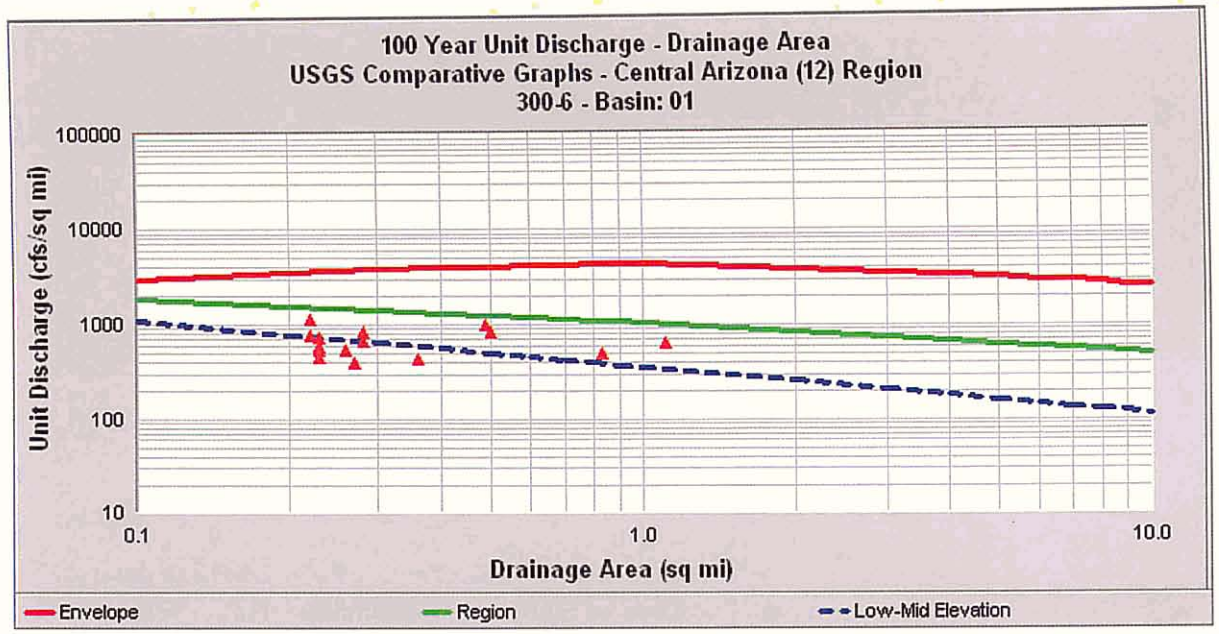
100-Year, 6-Hour Results for 300 Watershed – Boughton



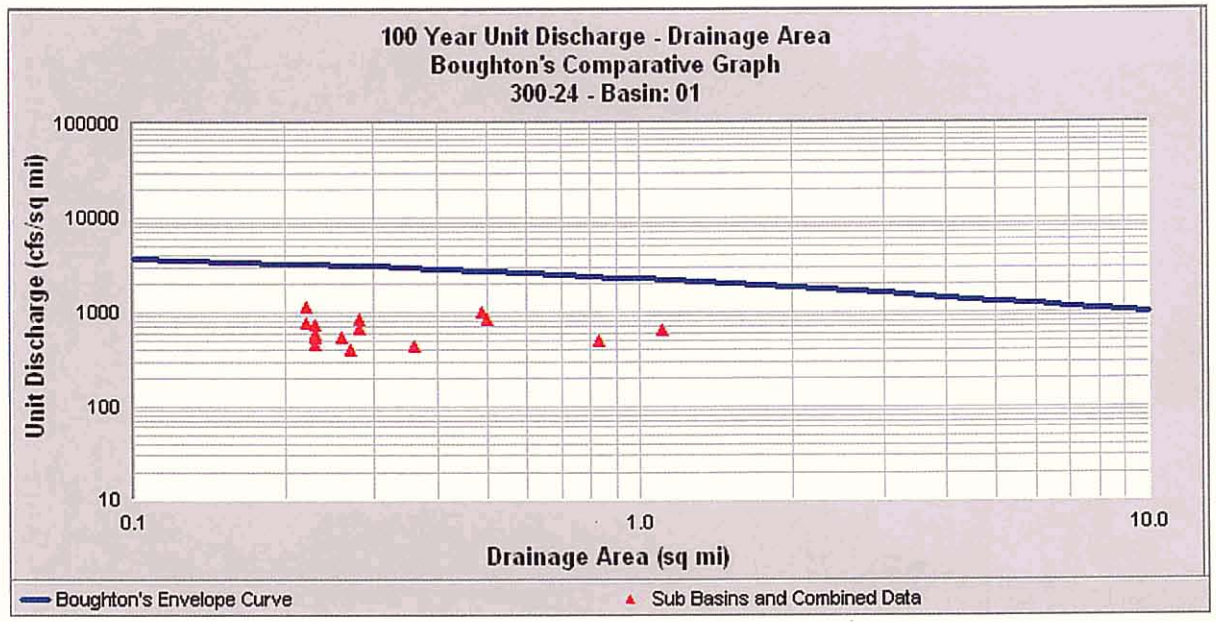
100-Year, 6-Hour Results for 300 Watershed – Malvick



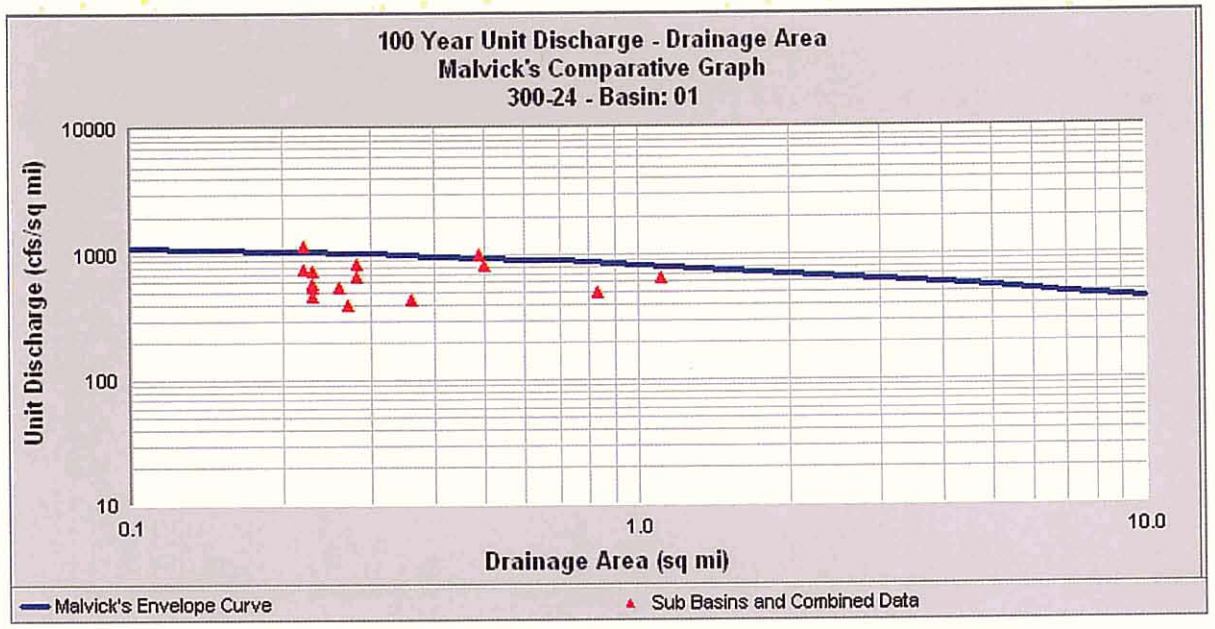
100-Year, 6-Hour Results for 300 Watershed – USGS



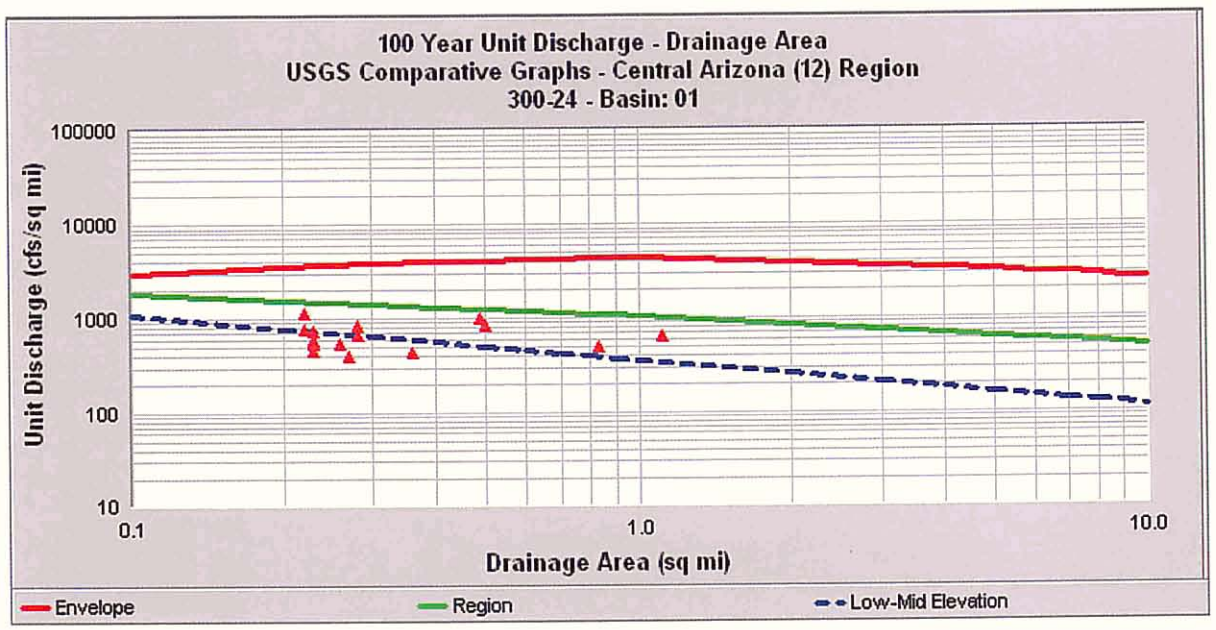
100-Year, 24-Hour Results for 300 Watershed – Boughton



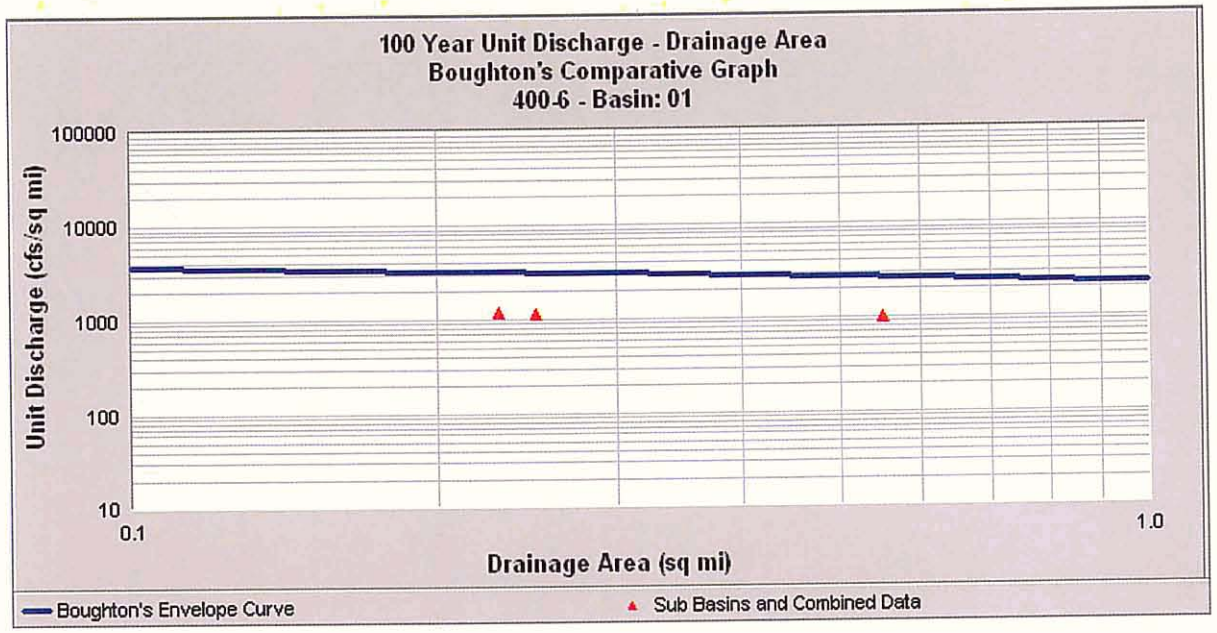
100-Year, 24-Hour Results for 300 Watershed – Malvick



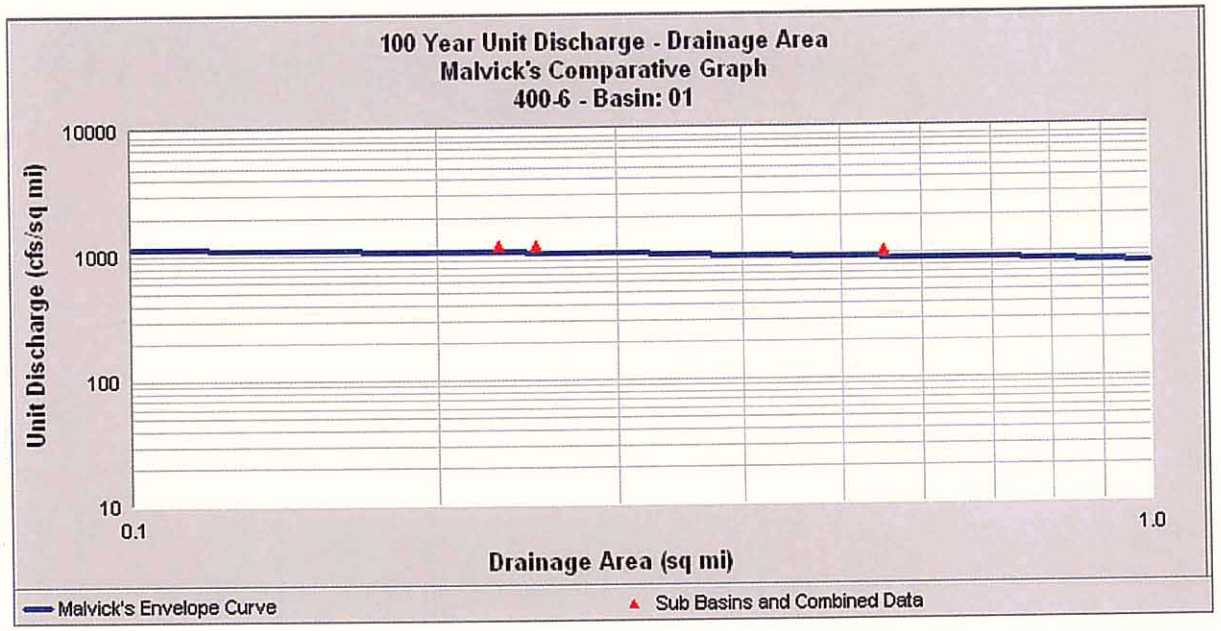
100-Year, 24-Hour Results for 300 Watershed – USGS



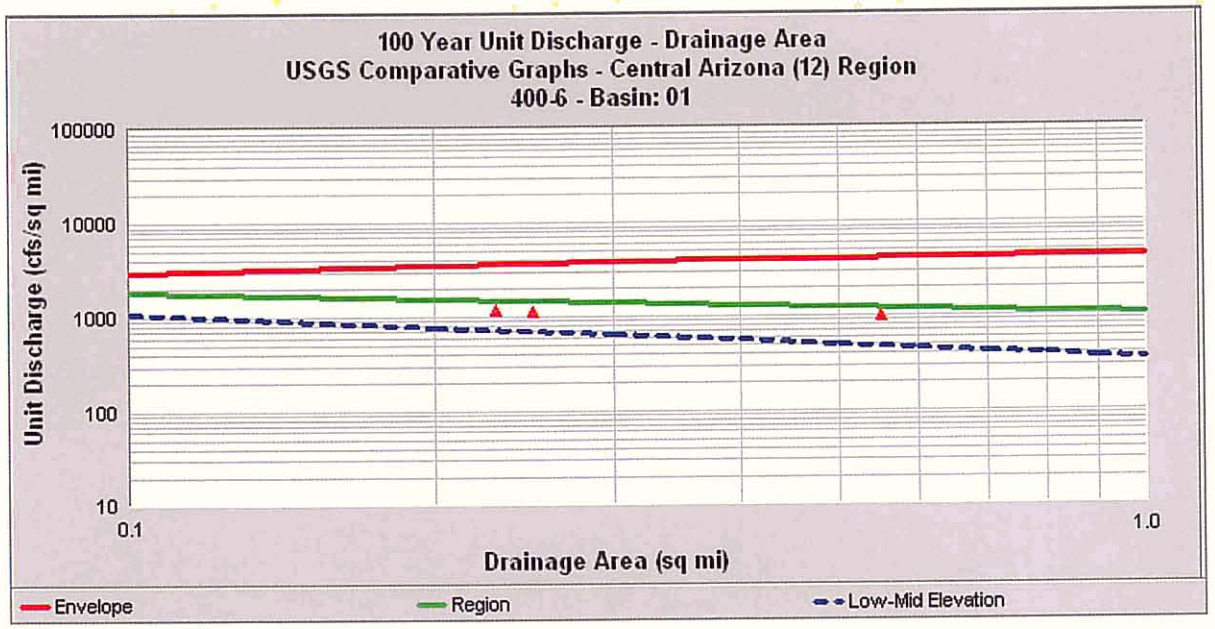
100-Year, 6-Hour Results for 400 Watershed – Boughton



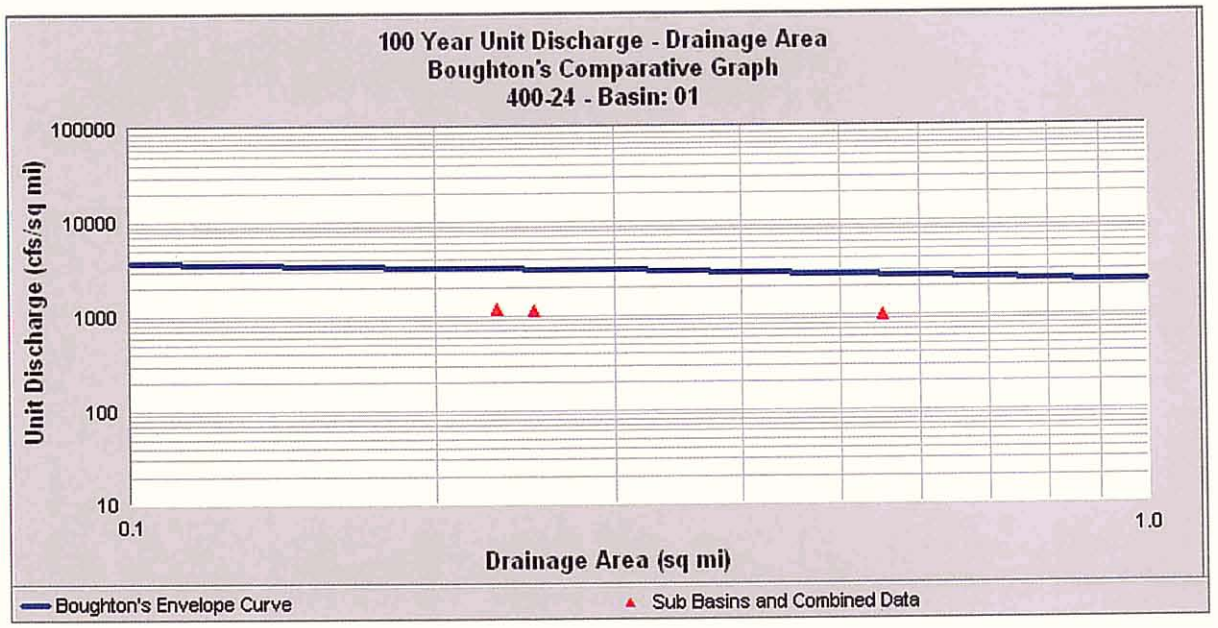
100-Year, 6-Hour Results for 400 Watershed – Malvick



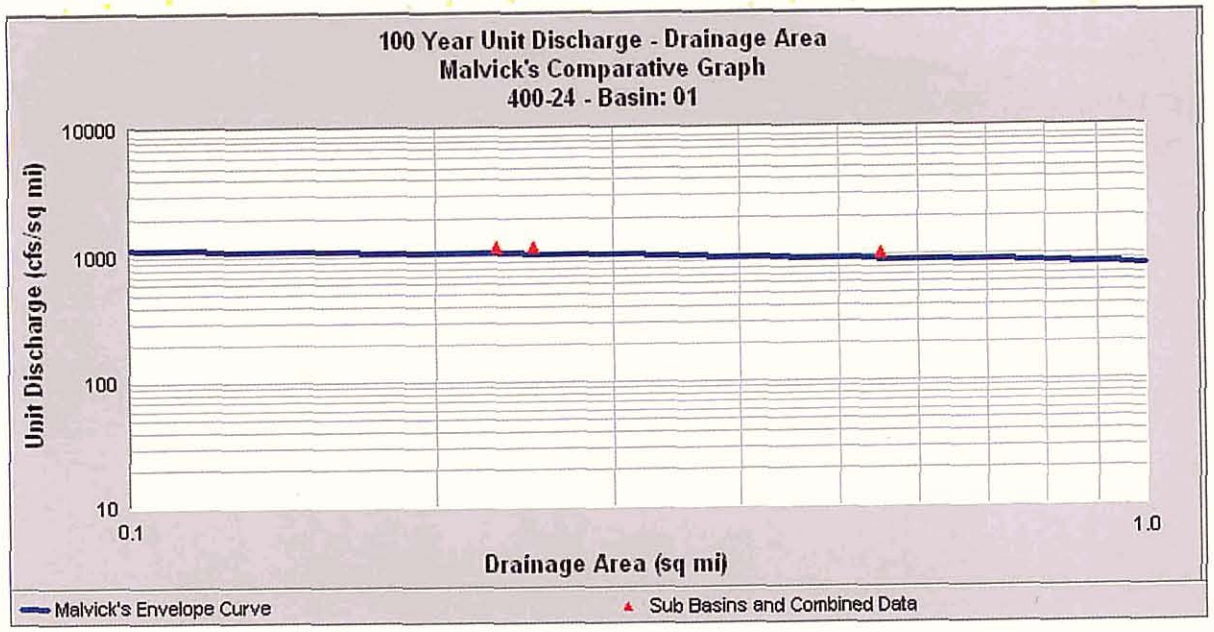
100-Year, 6-Hour Results for 400 Watershed – USGS



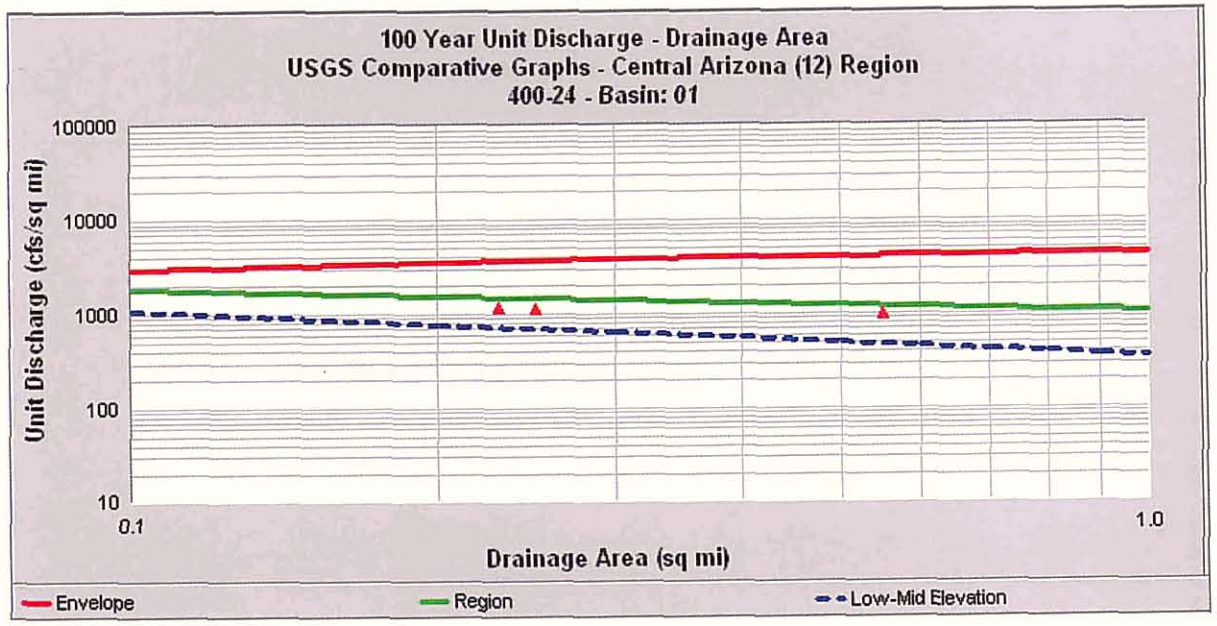
100-Year, 24-Hour Results for 400 Watershed – Boughton



100-Year, 24-Hour Results for 400 Watershed – Malvick



100-Year, 24-Hour Results for 400 Watershed – USGS



Appendix D: Hydrologic Analysis Supporting Documentation

D.4 Reservoir Routing Data

D.4.1 Kingsborough Park Rating Curve Calculations
D.4.2 Emerald Park Rating Curve Calculations
D.4.3 Sherwood Park Rating Curve Calculations
D.4.4 Heritage Park Rating Curve Calculations
D.4.5 Fiesta Lakes Golf Course Rating Curve Calculations

D.4.1 KINGSBOROUGH PARK

RATING CURVE CALCULATIONS

KINGSBOROUGH PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS142

Data sources: ADOT channel as-builts, aerial photos, 10-ft topo mapping, field visit photos

Approximate dimensions:

channel depth = 6 ft
top of channel elevation = 1235
channel block height = 4 ft
channel block elevation, bottom = 1228
spillway elevation = 1232
gate opening = 3 ft x 2 ft

Field Visit Photo, October 12, 2003 – ADOT Channel at Kingsborough Park. Photo is looking south to the outlet spillway.

Gate Opening Capacity:

Orifice Equation: $Q = C\,A\,\sqrt{(2\,g\,h)} = (0.6)(3\text{ ft} \times 2)\,\sqrt{(2)(32.2)(1232 - 1228)} = 58\text{cfs}$, round to 60 cfs

KINGSBOROUGH PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS142 (CONT'D.)

Spillway Capacity:

```
**********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
**********************************************
  PROJECT: Kingsborough Park
  ENGINEER: cvl
  DATE: 12/ 8/2003
  TIME: 10:53. 4
----------------------------------------
  INPUT PARAMETERS
----------------------------------------
  STARTING WSEL:     1232.00
  MAXIMUM WSEL:      1240.00
  STEP SIZE:          1.00
  BREADTH OF WEIR:    50.00
**********************************************
  INPUT ELEVATION/STATION TABLE.
  PROJECT: Kingsborough Park
  DATE: 12/ 8/2003
  TIME: 10:53. 4
**********************************************
  POINT   ELEVATION   STATION
  -----   ---------   -------
    1     1235.00     0.00
    2     1232.00    20.00
    3     1232.00    50.00
    4     1235.00    70.00
```

```
**********************************************
  WEIR COEFFICIENT TABLE
  PROJECT: Kingsborough Park
  DATE: 12/ 8/2003
  TIME: 10:53. 4
**********************************************
  INPUT COEFFICENT VALUES.

 POINT    HEAD    COEFFICIENT
 -----    ----    -----------
   1     0.00       3.0000
   2    10.00       3.0000
**********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
  PROJECT: Kingsborough Park
  DATE: 12/ 8/2003
  TIME: 10:53. 4
**********************************************
  ELEVATION    DISCHARGE (CFS)
  ---------    ---------------
   1232.00          0.00
   1233.00        106.00
   1234.00        345.07
   1235.00        717.07
   1236.00       1216.00
   1237.00       1810.15
   1238.00       2484.22
   1239.00       3229.09
   1240.00       4038.35
```

Kingsborough Park Retention Capacity:

Elevation	Area (Ac.)	Volume (AF)
1212	2.5	
1213	3	3
1214	6	9
1231	18	204
1233	19	37
1235	20	39
1236	22	15
1240	24	71
	Total =	378

Rating Curve Data:

SA	2.5	3	6	18	19	20	22	23
SE	1212	1213	1214	1231	1233	1235	1236	1240
SQ	60	60	60	60	60+106=166	60+717=777	60+1216=1276	60+4038=4098

D.4.2 EMERALD PARK

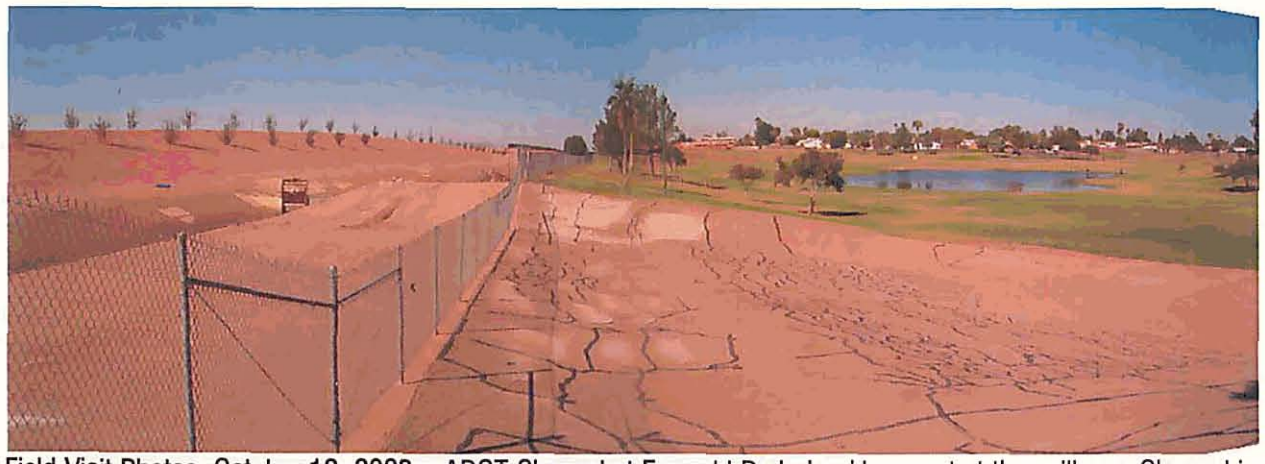
RATING CURVE CALCULATIONS

EMERALD PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS143

Data sources: ADOT channel as-builts, aerial photos, 10-ft topo mapping, field visit photos

Approximate dimensions:

channel depth = 8 ft
top of channel elevation = 1227
channel block height = 3 ft
channel block elevation, bottom = 1219
spillway elevation = 1222
gate opening = 3 ft x 2 ft



Field Visit Photos, October 12, 2003 – ADOT Channel at Emerald Park. Looking west at the spillway. Channel is approximately 8 feet deep. Gate opening is estimated at approximately 3 ft by 2 ft.

Gate Opening Capacity:

Orifice Equation: $Q = C\,A\,\sqrt{(2\,g\,h)} = (0.6)(3\text{ ft} \times 2\text{ ft})\,\sqrt{(2)(32.2)(1222 - 1219)} = 50\text{ cfs}$

EMERALD PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS143 (CONT'D.)

Spillway Capacity:

```
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
*********************************************
  PROJECT: Emerald Park
  ENGINEER: cvl
  DATE: 11/25/2003
  TIME: 11:40.54
 ---------------------------------------------
  INPUT PARAMETERS
 ---------------------------------------------
  STARTING WSEL:     1222.00
  MAXIMUM WSEL:      1227.00
  STEP SIZE:          1.00
  BREADTH OF WEIR:    50.00
*********************************************
  INPUT ELEVATION/STATION TABLE.
  PROJECT: Emerald Park
  DATE: 11/25/2003
  TIME: 11:40.54
*********************************************
  POINT   ELEVATION   STATION
  -----   ---------   -------
    1     1227.00      0.00
    2     1222.00     24.00
    3     1222.00    109.00
    4     1227.00    133.00
```

```
*********************************************
  WEIR COEFFICIENT TABLE
  PROJECT: Emerald Park
  DATE: 11/25/2003
  TIME: 11:40.54
*********************************************
  INPUT COEFFICENT VALUES.

POINT   HEAD    COEFFICIENT
-----   ----    -----------
  1    0.00       3.0000
  2   10.00       3.0000
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
  PROJECT: Emerald Park
  DATE: 11/25/2003
  TIME: 11:40.54
*********************************************
  ELEVATION    DISCHARGE (CFS)
  ---------    ---------------
   1222.00          0.00
   1223.00        266.52
   1224.00        786.42
   1225.00       1504.60
   1226.00       2408.64
   1227.00       3494.97
```

Emerald Park Retention Capacity:

Elevation	Area (Ac.)	Volume (AF)
1210	3.8	
1211	4	4
1214	8	18
1222	11	76
1224	11.5	23
1226	12	24
1227	12.5	12
	Total =	157

Rating Curve Data:

SA	3.8	4	8	11	11.5	12	12.5
SE	1210	1211	1214	1222	1224	1226	1227
SQ	50	50	50	50	50+786=836	50+2409 = 2459	50+3494=3544

D.4.3 SHERWOOD PARK

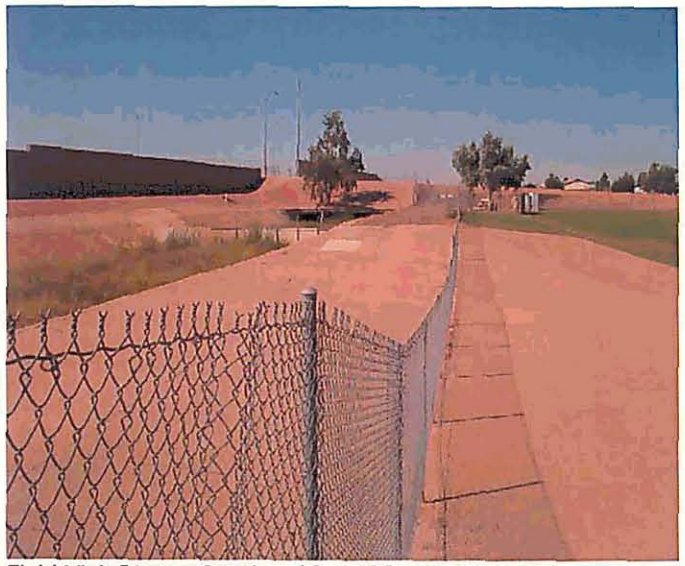
RATING CURVE CALCULATIONS

SHERWOOD PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS145

Data sources: ADOT channel as-builts, aerial photos, 10-ft topo mapping, field visit photos

Approximate dimensions:

channel depth = 8 ft
top of channel elevation = 1222
channel block height = 6 ft
channel block elevation, bottom = 1214
spillway elevation = 1218
gate opening = 3 ft x 6 ft



Field Visit Photo, October 12, 2003 – ADOT Channel at Sherwood Park. Looking west at the spillway. Channel is approximately 8 feet deep. Gate opening is estimated at approximately 3 ft by 6 ft.

Gate Opening Capacity:

Orifice Equation: $Q = C\,A\,\sqrt{(2\,g\,h)} = (0.6)(3\text{ ft} \times 6\text{ ft})\,\sqrt{(2)(32.2)(1218 - 1214)} = 173$ cfs, round to 180 cfs

SHERWOOD PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS145 (CONT'D.)

Spillway Capacity:

```
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
*********************************************
  PROJECT: Sherwood Park
  ENGINEER: cvl
  DATE: 11/25/2003
  TIME: 13:35.33
---------------------------------------------
  INPUT PARAMETERS
---------------------------------------------
  STARTING WSEL:     1218.00
  MAXIMUM WSEL:      1222.00
  STEP SIZE:          1.00
  BREADTH OF WEIR:    50.00
*********************************************
  INPUT ELEVATION/STATION TABLE.
  PROJECT: Sherwood Park
  DATE: 11/25/2003
  TIME: 13:35.33
*********************************************
  POINT   ELEVATION   STATION
  -----   ---------   -------
    1     1222.00      0.00
    2     1218.00     25.00
    3     1218.00    115.00
    4     1222.00    140.00
```

```
*********************************************
  WEIR COEFFICIENT TABLE
  PROJECT: Sherwood Park
  DATE: 11/25/2003
  TIME: 13:35.33
*********************************************
  INPUT COEFFICENT VALUES.

POINT   HEAD    COEFFICIENT
-----   ----    -----------
  1    0.00       3.0000
  2   10.00       3.0000
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
  PROJECT: Sherwood Park
  DATE: 11/25/2003
  TIME: 13:35.33
*********************************************
  ELEVATION    DISCHARGE (CFS)
  ---------    ---------------
  1218.00          0.00
  1219.00        285.00
  1220.00        848.53
  1221.00       1636.79
  1222.00       2640.00
```

Sherwood Park Retention Capacity:

Elevation	Area (Ac.)	Volume (AF)
1203	1	
1204	1.5	1
1206	4	6
1208	8	12
1210	11	19
1218	15	104
1219	15.2	15
1221	15.5	31
1222	16	16
	Total =	204

Rating Curve Data:

SA	1	1.5	4	8	11	15	15.2	15.5	16
SE	1203	1204	1206	1208	1210	1218	1219	1221	1222
SQ	180	180	180	180	180	180	180+285=465	180+1637=1817	180+2640=2820

D.4.4 HERITAGE PARK

RATING CURVE CALCULATIONS

HERITAGE PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS147

Data sources: ADOT channel as-builts, aerial photos, 10-ft topo mapping, field visit photos

Approximate dimensions:
channel depth = 8 ft
top of channel elevation = 1216
channel elevation, bottom = 1208
spillway elevation = 1213

Field Visit Photos, October 12, 2003:
Above: Heritage Park, looking west toward the spillway to the ADOT channel, railroad, and US60 overpass.
Below: Looking east along the ADOT channel. Heritage Park is to the left, and the outlet structure to the Center Street Basin is on the right.

The ADOT channel transitions to a 54" concrete pipe which conveys flow under the railroad. The pipe is modeled in the HEC-1 as P146A. See Section D.5.6 of the appendix for the analysis of the capacity of the 54" pipe.

HERITAGE PARK: RATING CURVE CALCULATIONS FOR HEC I.D. BS147 (CONT'D.)

Spillway Capacity:

```
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
*********************************************
  PROJECT: Heritage Park
  ENGINEER: cvl
  DATE: 11/25/2003
  TIME: 13:29.44
---------------------------------------------
  INPUT PARAMETERS
---------------------------------------------
  STARTING WSEL:     1213.00
  MAXIMUM WSEL:      1220.00
  STEP SIZE:          1.00
  BREADTH OF WEIR:    50.00
*********************************************
  INPUT ELEVATION/STATION TABLE.
  PROJECT: Heritage Park
  DATE: 11/25/2003
  TIME: 13:29.44
*********************************************
  POINT   ELEVATION   STATION
  -----   ---------   -------
    1     1216.00      0.00
    2     1213.00     20.00
    3     1213.00     60.00
    4     1216.00     80.00
```

```
*********************************************
  WEIR COEFFICIENT TABLE
  PROJECT: Heritage Park
  DATE: 11/25/2003
  TIME: 13:29.44
*********************************************
  INPUT COEFFICENT VALUES.

POINT   HEAD    COEFFICIENT
-----   ----    -----------
  1    0.00       3.0000
  2   10.00       3.0000
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
  PROJECT: Heritage Park
  DATE: 11/25/2003
  TIME: 13:29.44
*********************************************
  ELEVATION    DISCHARGE (CFS)
  ---------    ---------------
  1213.00          0.00
  1214.00        136.00
  1215.00        429.92
  1216.00        872.95
  1217.00       1456.00
  1218.00       2145.56
  1219.00       2925.12
  1220.00       3784.70
```

Heritage Park Retention Capacity:

Elevation	Area (Ac.)	Volume (AF)
1200	7	
1208	13	80
1213	18.5	80
1215	19	37
1218	19.5	58
1220	20	40
	Total =	295

Rating Curve Data:

SA	7	13	18.5	19	19.5	20
SE	1200	1208	1213	1215	1218	1220
SQ	0	0	0	430	2146	3785

D.4.5 FIESTA LAKES GOLF COURSE

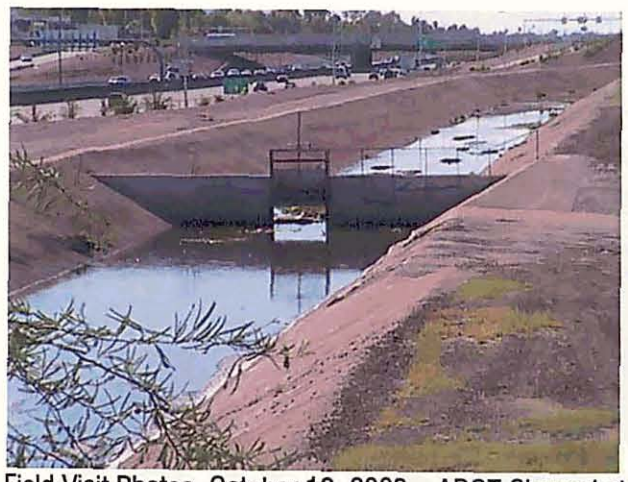
RATING CURVE CALCULATIONS

FIESTA LAKES GOLF COURSE: RATING CURVE CALCULATIONS FOR HEC I.D. BS247

Data sources: ADOT channel as-builts, aerial photos, 10-ft topo mapping, field visit photos

Approximate dimensions:

channel depth = 8 ft
top of channel elevation = 1208
channel block height = 6 ft
channel block elevation, bottom = 1200
spillway elevation = 1206
gate opening = 3 ft x 6 ft



Field Visit Photos, October 12, 2003 – ADOT Channel at Extension Rd. View west along south side of Fiesta Lakes Golf Course. Channel block and gate to the left, spillway to the right. Channel is approximately 8 feet deep. Gate opening is estimated at approximately 3 ft by 6 ft.

Gate Opening Capacity:

Orifice Equation: $Q = C\,A\,\sqrt{(2\,g\,h)} = (0.6)(3\text{ ft} \times 6\text{ ft})\,\sqrt{(2)(32.2)(1206 - 1201.5)} = 183$ cfs, round to 180 cfs

FIESTA LAKES GOLF COURSE: RATING CURVE CALCULATIONS FOR HEC I.D. BS247 (CONT'D.)

Spillway Capacity:

```
*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
*********************************************
  PROJECT: FIESTA LAKES
  ENGINEER: KVM
  DATE: 11/10/2003
  TIME: 11:17.58
 ---------------------------------------------
  INPUT PARAMETERS
 ---------------------------------------------
  STARTING WSEL:     1206.00
  MAXIMUM WSEL:      1210.00
  STEP SIZE:          1.00
  BREADTH OF WEIR:    50.00

*********************************************
  INPUT ELEVATION/STATION TABLE.
  PROJECT: FIESTA LAKES
  DATE: 11/10/2003
  TIME: 11:17.58
*********************************************
  POINT   ELEVATION   STATION
  -----   ---------   -------
    1     1208.00      0.00
    2     1206.00     30.00
    3     1206.00    135.00
    4     1208.00    165.00
    5     1208.00    265.00
```

```
*********************************************
  WEIR COEFFICIENT TABLE
  PROJECT: FIESTA LAKES
  DATE: 11/10/2003
  TIME: 11:17.58
*********************************************
  INPUT COEFFICENT VALUES.

POINT   HEAD    COEFFICIENT
-----   ----    -----------
  1    0.00       3.0000
  2    5.00       3.0000

*********************************************
  UNEVEN WEIR FLOW PROGRAM
  FORTRAN VERSION 1.0
  PROJECT: FIESTA LAKES
  DATE: 11/10/2003
  TIME: 11:17.58
*********************************************
  ELEVATION    DISCHARGE (CFS)
  ---------    ---------------
   1206.00          0.00
   1207.00        351.00
   1208.00       1094.60
   1209.00       2461.97
   1210.00       4316.88
```

Fiesta Lakes Retention Capacity:

Elevation	Area (Ac.)	Volume (AF)
1200	2.50	
1206	14.00	45
1208	18.00	32
1210	22.00	40
	Total =	117

Rating Curve Data:

SA	2.5	14	18	22
SE	1200	1206	1208	1210
SQ	180	180	180+1095 = 1275	180+4317=4497

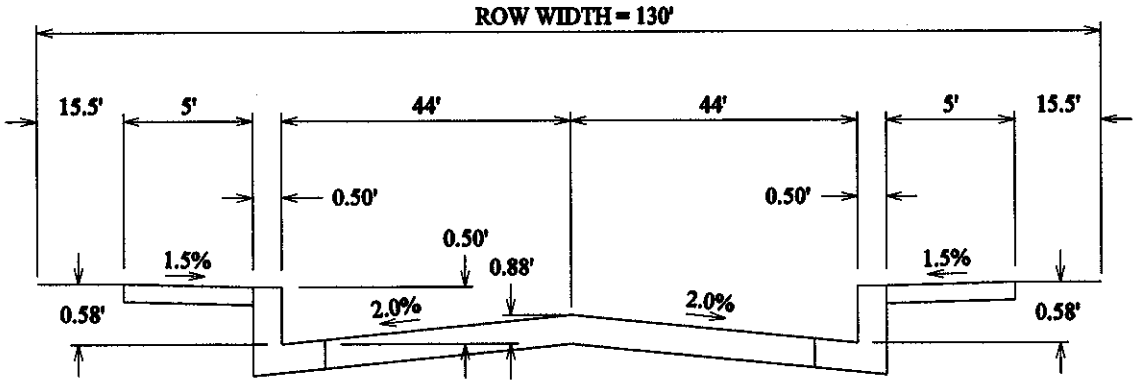
Appendix D: Hydrologic Analysis Supporting Documentation

D.5 Flow Splits and Diversions Data

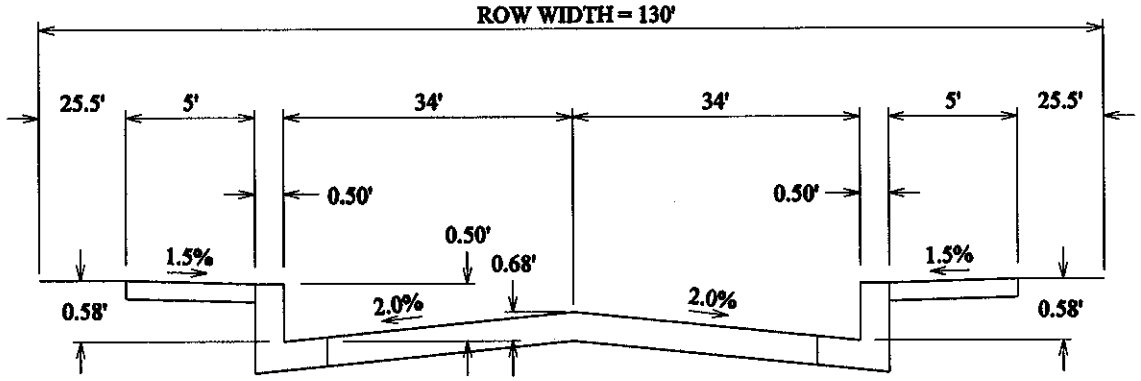
D.5.1 Typical Arterial Street Flow Split Sections
D.5.2 Typical Collector Street Flow Split Sections
D.5.3 Intersection Flow Split Examples
D.5.4 Intersection Rating Curves
D.5.5 Storm Drain Summary
D.5.6 Analysis of 54" Pipe P146A
D.5.7 Sub-Basin Diversion Volume Calculations

D.5.1 AND D.5.2 TYPICAL STREET

FLOW SPLIT SECTIONS



TYPICAL FLOW SPLIT SECTION **N.T.S.**
6-LANE ARTERIAL STREET



TYPICAL FLOW SPLIT SECTION **N.T.S.**
4-LANE ARTERIAL STREET

REFERENCE: CITY OF MESA STANDARD DETAILS, TYPICAL STREET SECTION.

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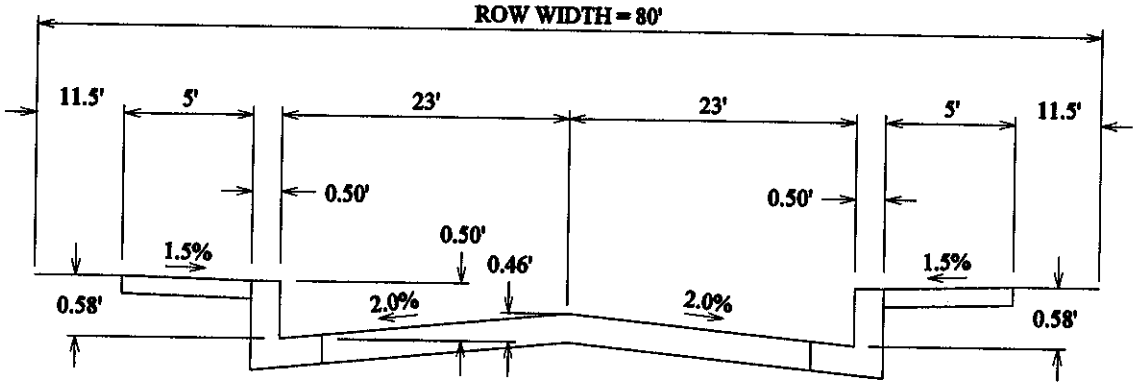
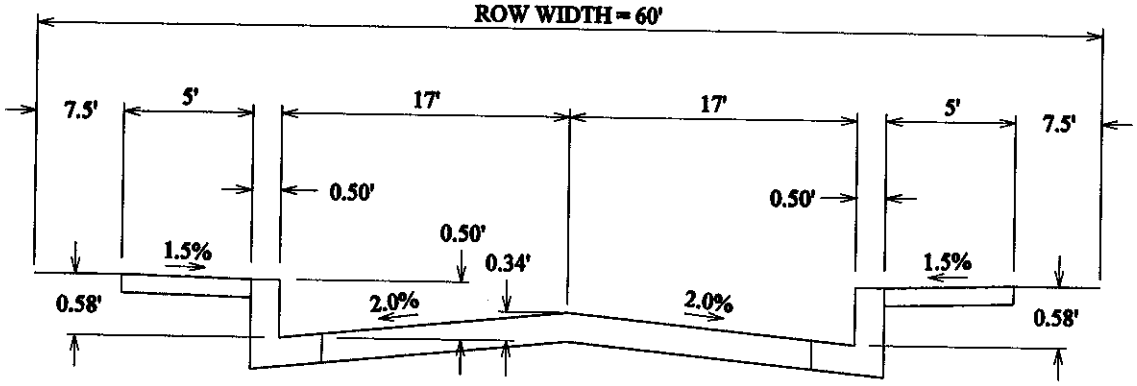
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.5.1
TYPICAL ARTERIAL STREET FLOW SPLIT SECTIONS



TYPICAL FLOW SPLIT SECTION **N.T.S.**
80-FT ROW COLLECTOR STREET



TYPICAL FLOW SPLIT SECTION **N.T.S.**
60-FT ROW COLLECTOR STREET

REFERENCE: CITY OF MESA STANDARD DETAILS, TYPICAL STREET SECTION.

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D.5.2
TYPICAL COLLECTOR STREET FLOW SPLIT SECTIONS

D.5.3 INTERSECTION FLOW SPLIT EXAMPLES

INTERSECTION RATING CURVE EXAMPLE CALCULATION – SURVEYED INTERSECTION

CONCENTRATION POINT: **CP234**

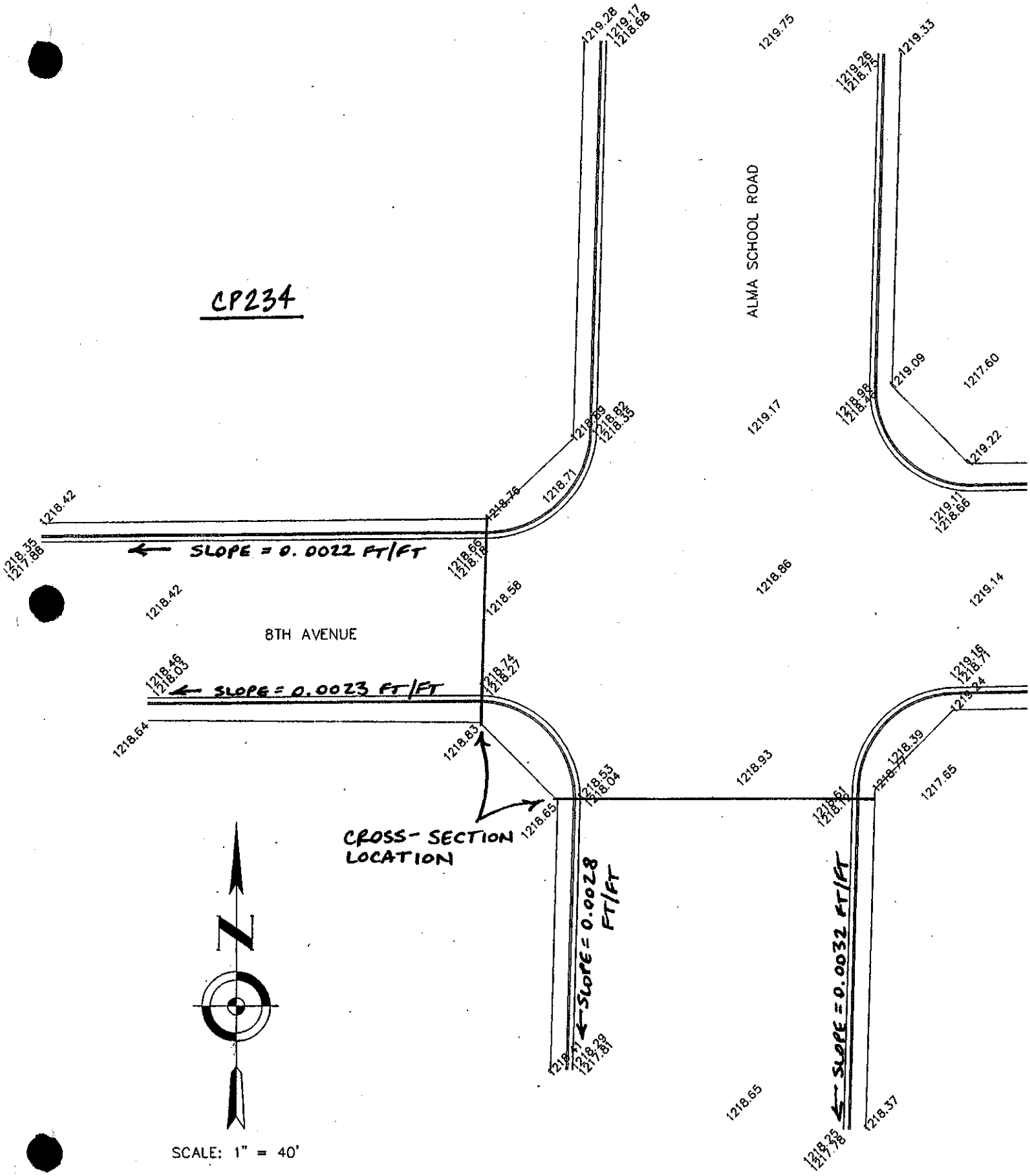
NORTH-SOUTH STREET = **ALMA SCHOOL RD, 6-LANE ARTERIAL**
EAST-WEST STREET = **8TH AVE, 80-FT ROW COLLECTOR**

1. Street section types from: Parsons Brinckerhoff, for City of Mesa, *City of Mesa Transportation Plan*, Figure 4-2 "Existing Number of Through Lanes," June 26, 2002.
   City of Mesa, *City of Mesa Storm Drain Quarter Section Maps*, various dates October 2001 through January 2003.
   City of Mesa, *Mesa Standard Details & Specifications*, March 1, 2003:
   Detail M-19.1 Typical Street Section
   Detail M-46.1 Arterial Street Intersection (4 Lanes)
   Detail M-46.2 Arterial Street Intersection (6 Lanes)
   Detail M-46.3 Typical Striping Cross Sections.
   Field observations and aerial photos.

   Street slopes from: Survey data
   Elevations from: Survey data
   Cross-section geometry: Survey data
   Manning's 'n': Total 98.5 ft cross-section width
   Width of sidewalk, curb and gutter = 5+5+2+2 ft = 14 ft
   Width of pavement = 98.5 – 14 ft = 84.5 ft
   Manning's 'n' for concrete = 0.013
   Manning's 'n' for asphalt = 0.019
   Weighted 'n' value = (14 ft x 0.013)+(84.5 ft x 0.019) = 0.018

2. Discharge vs. Water Surface Elevation rating table generated for each of the split flow directions, using FlowMaster software. See following pages.

3. Combined Capacity rating table is the addition of the southbound and westbound street capacities. See following pages. The combined capacity curve and appropriate street flow direction's capacity curve are input in HEC-1 as the flow split rating curve.


CP234
ALMA SCHOOL ROAD
8TH AVENUE
SLOPE = 0.0022 FT/FT
SLOPE = 0.0023 FT/FT
SLOPE = 0.0028 FT/FT
SLOPE = 0.0032 FT/FT
CROSS-SECTION LOCATION
SCALE: 1" = 40'

CP234 - Southbound Alma School Rd
Rating Table for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP234 - Southbound Alma School Rd
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Constant Data	
Channel Slope	0.003000 ft/ft

Input Data			
	Minimum	Maximum	Increment
Water Surface Elevation	1,218.20	1,223.20	0.50 ft

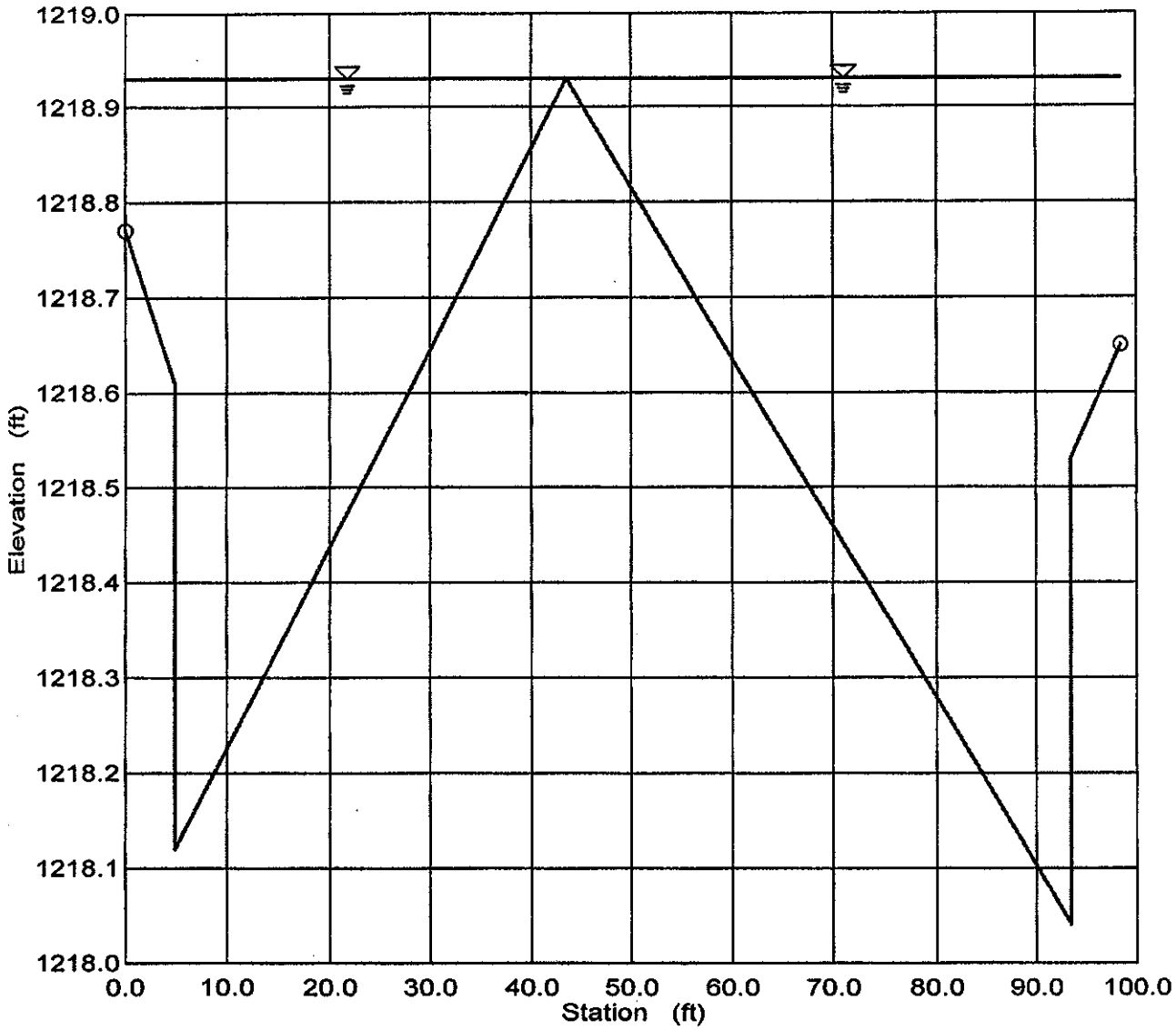
Rating Table

Water Surface Elevation (ft)	Wtd. Mannings Coefficient	Discharge (cfs)	Velocity (ft/s)
1,218.20	0.018	0.65	0.74
1,218.70	0.018	40.89	1.96
1,219.20	0.018	233.16	3.46
1,219.70	0.018	578.25	4.96
1,220.20	0.018	1,033.54	6.23
1,220.70	0.018	1,583.93	7.36
1,221.20	0.018	2,219.17	8.40
1,221.70	0.018	2,931.57	9.35
1,222.20	0.018	3,714.98	10.24
1,222.70	0.018	4,564.35	11.08
1,223.20	0.018	5,475.37	11.87

CP234 - Southbound Alma School Rd
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP234 - Southbound Alma School Rd
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.003000	ft/ft
Water Surface Elevation	1,218.93	ft
Discharge	101.28	cfs



CP234 - Westbound 8th Ave
Rating Table for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP234 - Westbound 8th Ave
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Constant Data	
Channel Slope	0.002200 ft/ft

Input Data			
	Minimum	Maximum	Increment
Water Surface Elevation	1,218.20	1,223.20	0.50 ft

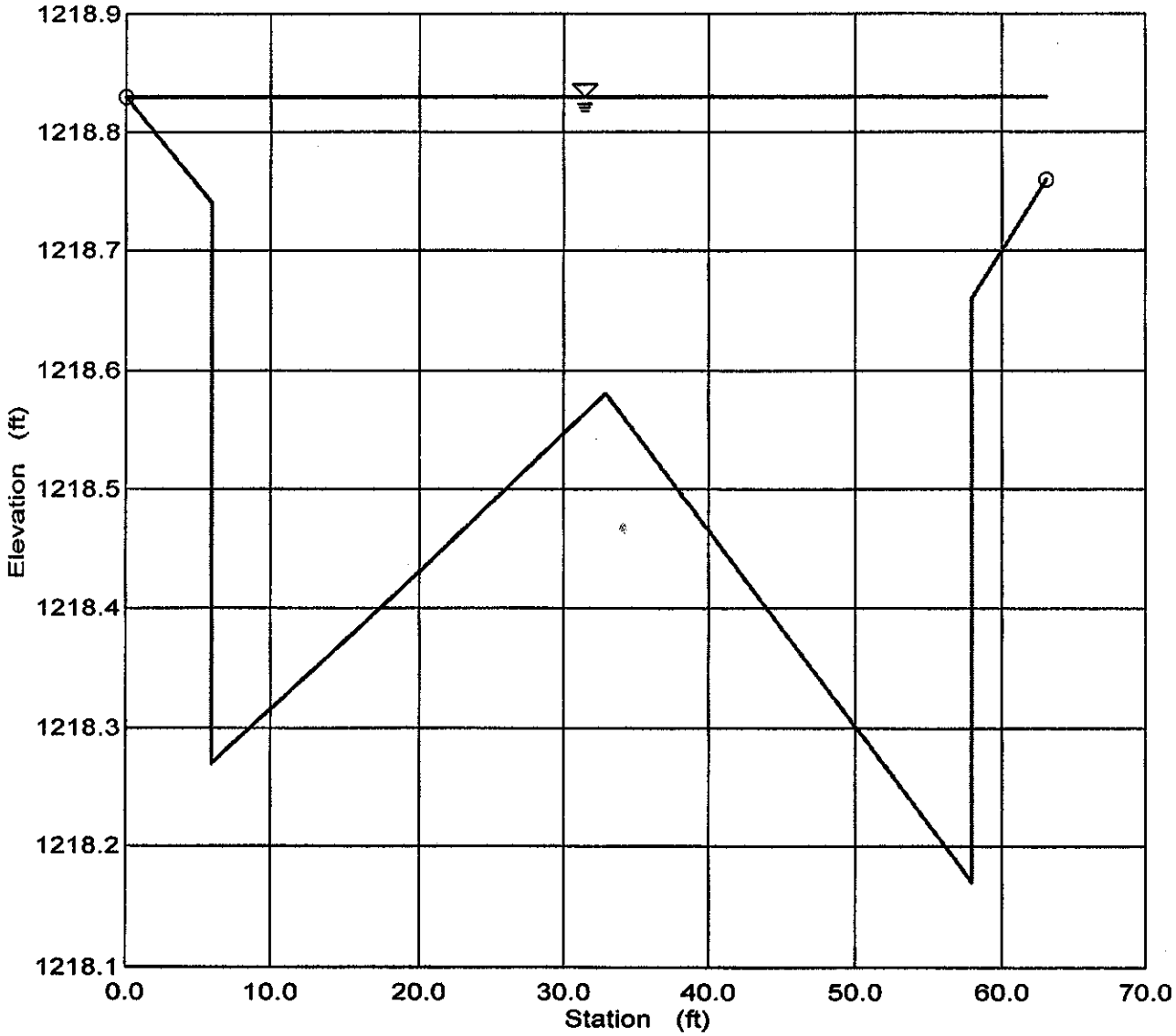
Rating Table

Water Surface Elevation (ft)	Wtd. Mannings Coefficient	Discharge (cfs)	Velocity (ft/s)
1,218.20	0.018	0.01	0.23
1,218.70	0.018	26.07	1.67
1,219.20	0.018	144.30	3.10
1,219.70	0.018	338.29	4.34
1,220.20	0.018	589.49	5.38
1,220.70	0.018	889.60	6.31
1,221.20	0.018	1,232.86	7.15
1,221.70	0.018	1,614.88	7.92
1,222.20	0.018	2,032.17	8.63
1,222.70	0.018	2,481.82	9.30
1,223.20	0.018	2,961.34	9.92

CP234 - Westbound 8th Ave
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP234 - Westbound 8th Ave
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.002200	ft/ft
Water Surface Elevation	1,218.83	ft
Discharge	45.59	cfs



TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP234
N-S STREET: ALMA SCHOOL RD — 6-LANE ARTERIAL
E-W STREET: 8TH AVE — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0030 FT/FT
WESTBOUND STREET SLOPE: 0.0022 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,218.2	1	0	0	1	100
1,218.7	67	26	39	41	61
1,219.2	377	144	38	233	62
1,219.7	916	338	37	578	63
1,220.2	1,623	589	36	1,034	64
1,220.7	2,474	890	36	1,584	64
1,221.2	3,452	1,233	36	2,219	64
1,221.7	4,547	1,615	36	2,932	64
1,222.2	5,747	2,032	35	3,715	65
1,222.7	7,046	2,482	35	4,564	65
1,223.2	8,436	2,961	35	5,475	65

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

INTERSECTION RATING CURVE EXAMPLE CALCULATION – INTERSECTION NOT SURVEYED

CONCENTRATION POINT: **CP208**

NORTH-SOUTH STREET = **COUNTRY CLUB DR, 6-LANE ARTERIAL**
EAST-WEST STREET = **UNIVERSITY DR, 4-LANE ARTERIAL**

1. Street section types from: Parsons Brinckerhoff, for City of Mesa, City of Mesa Transportation Plan, Figure 4-2 "Existing Number of Through Lanes," June 26, 2002.
   City of Mesa, *City of Mesa Storm Drain Quarter Section Maps*, various dates October 2001 through January 2003.
   City of Mesa, *Mesa Standard Details & Specifications*, March 1, 2003:
   Detail M-19.1 Typical Street Section
   Detail M-46.1 Arterial Street Intersection (4 Lanes)
   Detail M-46.2 Arterial Street Intersection (6 Lanes)
   Detail M-46.3 Typical Striping Cross Sections.
   Field observations and aerial photos.

   Street slopes from: 10-ft contour topographic mapping and interpolation between surveyed intersections, if applicable
   Elevations from: Gutter flow line of cross-sections set at zero elevation
   Cross-section geometry: From typical street flow split sections shown in Sections D.5.1 and D.5.2 of this report
   Manning's 'n': Total 98.5 ft cross-section
   Width of sidewalk, curb and gutter = 5+5+2+2 ft = 14 ft
   Width of pavement = 98.5 – 14 ft = 84.5 ft
   Manning's 'n' for concrete = 0.013
   Manning's 'n' for asphalt = 0.019
   Weighted 'n' value = (14 ft x 0.013)+(84.5 ft x 0.019) = 0.018

2. Discharge vs. Water Surface Elevation rating table generated for each of the split flow directions, using FlowMaster software. See following pages.

3. Combined Capacity rating table is the addition of the southbound and westbound street capacities. See following page. The combined capacity curve and appropriate street flow direction's capacity curve are input in HEC-1 as the flow split rating curve.

CP208 - Southbound Country Club Dr
Rating Table for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP208 - Southbound Country Club Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Constant Data	
Channel Slope	0.001100 ft/ft

Input Data			
	Minimum	Maximum	Increment
Water Surface Elevation	0.00	5.00	0.50 ft

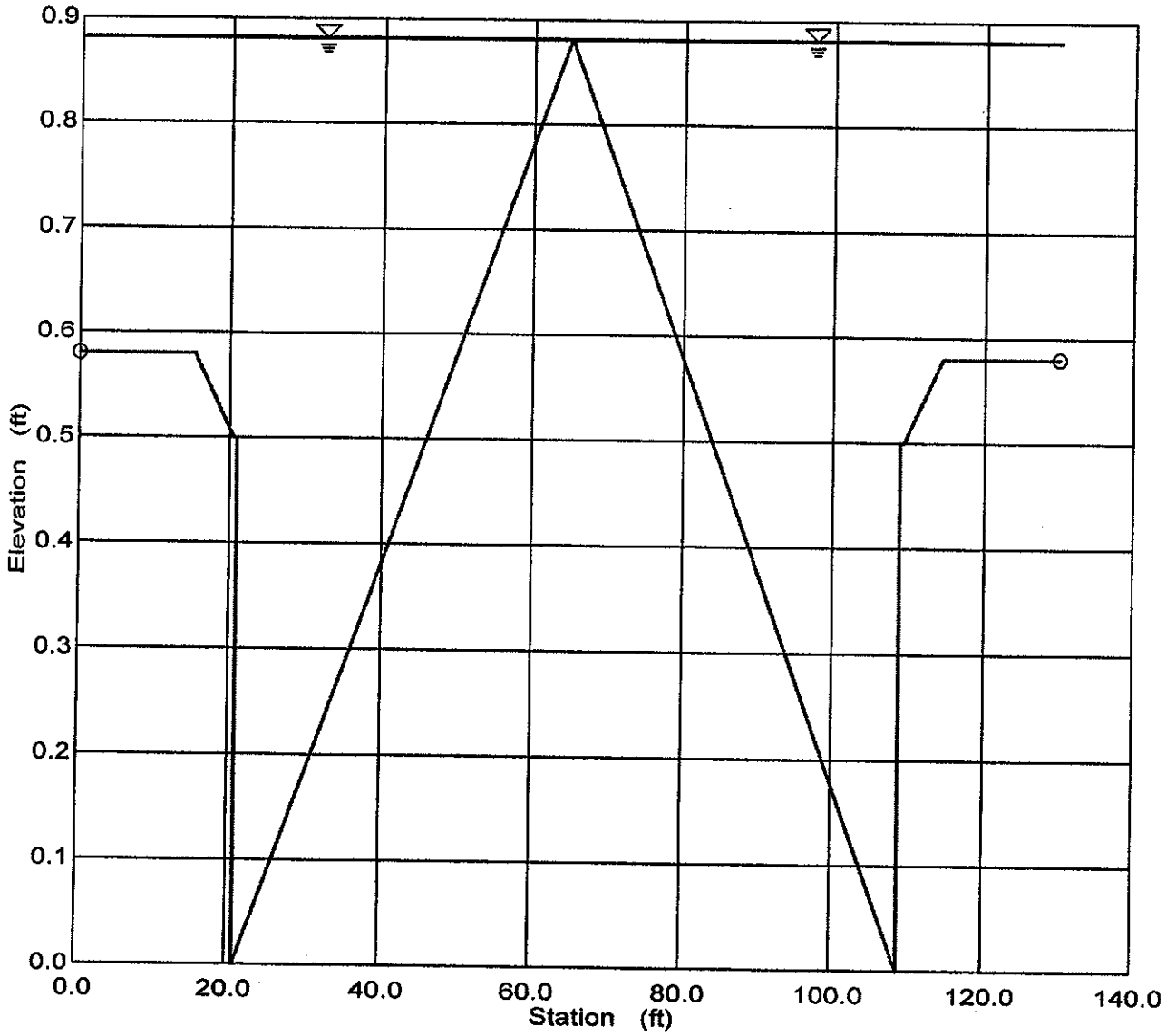
Rating Table

Water Surface Elevation (ft)	Wtd. Mannings Coefficient	Discharge (cfs)	Velocity (ft/s)
0.00	0.018	0.00	0.00
0.50	0.018	13.40	1.07
1.00	0.018	117.97	1.75
1.50	0.018	361.66	2.73
2.00	0.018	700.22	3.55
2.50	0.018	1,119.71	4.27
3.00	0.018	1,611.23	4.92
3.50	0.018	2,168.30	5.53
4.00	0.018	2,785.84	6.09
4.50	0.018	3,459.73	6.62
5.00	0.018	4,186.48	7.13

CP208 - Southbound Country Club Dr
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP208 - Southbound Country Club Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.001100	ft/ft
Water Surface Elevation	0.88	ft
Discharge	76.17	cfs



CP208 - Westbound University Dr
Rating Table for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP208 - Westbound University Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Constant Data	
Channel Slope	0.002300 ft/ft

Input Data			
	Minimum	Maximum	Increment
Water Surface Elevation	0.00	5.00	0.50 ft

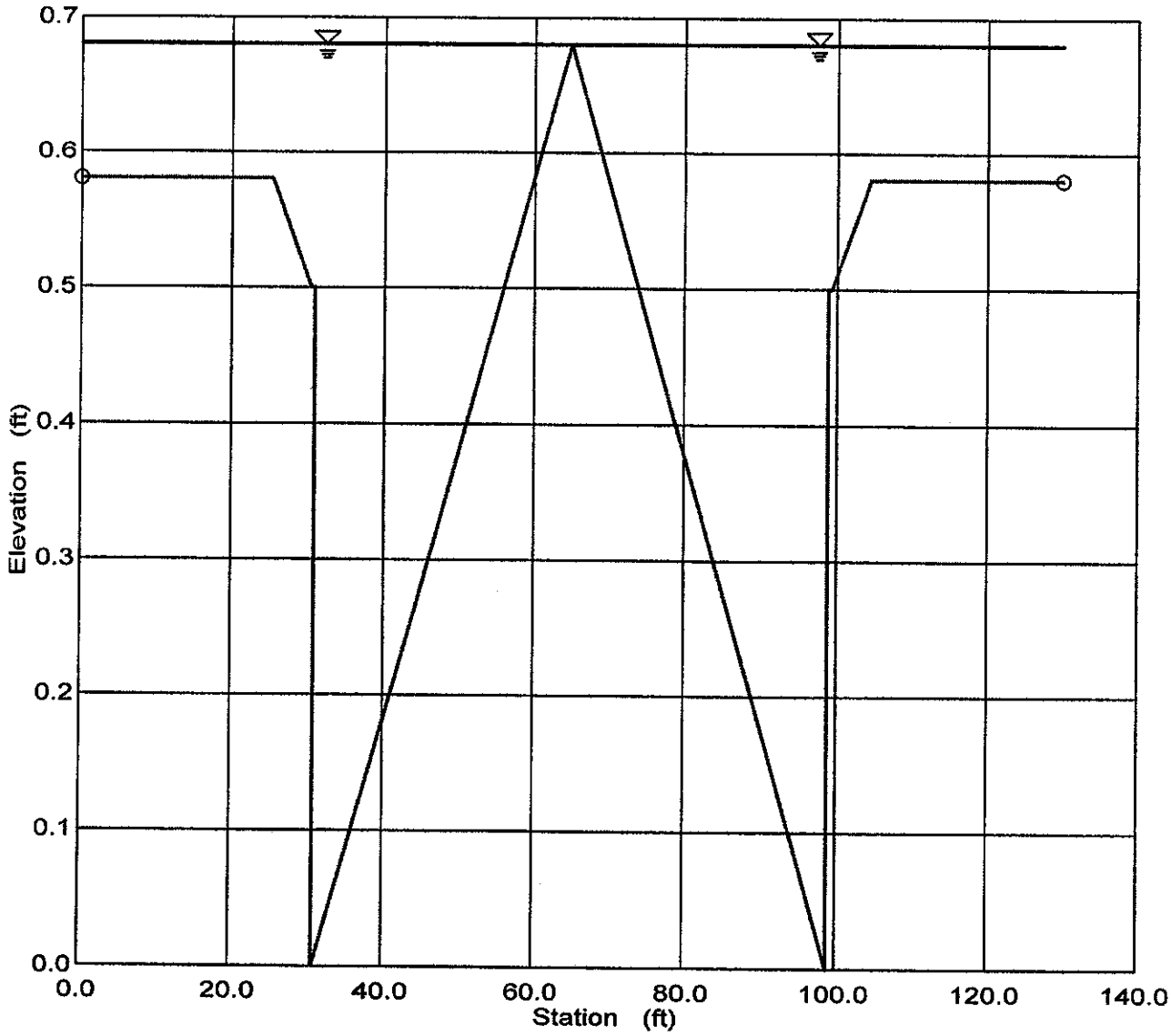
Rating Table

Water Surface Elevation (ft)	Wtd. Mannings Coefficient	Discharge (cfs)	Velocity (ft/s)
0.00	0.018	0.00	0.00
0.50	0.018	19.38	1.55
1.00	0.018	187.80	2.63
1.50	0.018	549.57	4.03
2.00	0.018	1,046.96	5.20
2.50	0.018	1,660.48	6.23
3.00	0.018	2,377.52	7.17
3.50	0.018	3,188.86	8.04
4.00	0.018	4,087.28	8.86
4.50	0.018	5,066.86	9.63
5.00	0.018	6,122.62	10.35

CP208 - Westbound University Dr
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP208 - Westbound University Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.002300	ft/ft
Water Surface Elevation	0.68	ft
Discharge	43.92	cfs



TEMPE CANAL FLOODPLAIN DELINEATION STUDY

(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP208

N-S STREET: COUNTRY CLUB DR — 6-LANE ARTERIAL

E-W STREET: UNIVERSITY DR — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0011 FT/FT

WESTBOUND STREET SLOPE: 0.0023 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	32	19	59	13	41
1.0	306	188	61	118	39
1.5	912	550	60	362	40
2.0	1,747	1,047	60	700	40
2.5	2,780	1,660	60	1,120	40
3.0	3,989	2,378	60	1,611	40
3.5	5,357	3,189	60	2,168	40
4.0	6,873	4,087	59	2,786	41
4.5	8,527	5,067	59	3,460	41
5.0	10,309	6,123	59	4,186	41

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

D.5.4 INTERSECTION RATING CURVES

LIST OF SURVEYED INTERSECTIONS

	E-W Road	N-S Road
1.	8th Street	Alma School Road
2.	8th Street	Country Club Drive
3.	University Drive	Mesa Drive
4.	University Drive	Stapley Drive
5.	Main Street	Alma School Road
6.	Main Street	Country Club Drive
7.	Main Street	Mesa Drive
8.	Main Street	Stapley Drive
9.	Broadway Road	Dobson Road
10.	Broadway Road	Alma School Road
11.	Broadway Road	Mesa Drive
12.	Broadway Road	Stapley Drive
13.	Broadway Road	Gilbert Road
14.	8th Avenue	Extension Road
15.	8th Avenue	Gilbert Road
16.	Southern Avenue	Dobson Road
17.	Southern Avenue	Alma School Road
18.	Southern Avenue	Country Club Drive
19.	Southern Avenue	Mesa Drive
20.	Southern Avenue	Stapley Drive
21.	Southern Avenue	Gilbert Road
22.	Baseline Road	Dobson Road
23.	Baseline Road	Alma School Road
24.	Guadalupe Road	Dobson Road
25.	Guadalupe Road	Alma School Road
26.	8th Avenue	Alma School Road
27.	8th Avenue	Country Club Drive
28.	8th Avenue	Longmore

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP102
N-S STREET: STAPLEY DR — 4-LANE ARTERIAL
E-W STREET: UNIVERSITY DR — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0022 FT/FT
WESTBOUND STREET SLOPE: 0.0024 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,242.8	0	0	0	0	0
1,243.0	48	0	0	48	100
1,243.2	120	4	3	116	97
1,243.4	255	14	5	241	95
1,243.6	406	42	10	364	90
1,243.8	612	104	17	508	83
1,244.0	889	219	25	670	75
1,244.2	1,192	342	29	850	71
1,244.4	1,531	486	32	1,045	68
1,244.6	1,907	650	34	1,257	66
1,244.8	2,315	832	36	1,483	64

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP104
N-S STREET: HORNE — 60-FT ROW COLLECTOR
E-W STREET: UNIVERSITY DR — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0015 FT/FT
WESTBOUND STREET SLOPE: 0.0004 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	24	8	33	16	67
1.0	230	78	34	152	66
1.5	673	229	34	444	66
2.0	1,283	437	34	846	66
2.5	2,033	692	34	1,341	66
3.0	2,911	991	34	1,920	66

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP106
N-S STREET: MESA DR — 4-LANE ARTERIAL
E-W STREET: UNIVERSITY DR — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0018 FT/FT
WESTBOUND STREET SLOPE: 0.0021 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,241.5	0	0	0	0	0
1,242.0	7	6	86	1	14
1,242.5	94	28	30	66	70
1,243.0	402	173	43	229	57
1,243.5	870	414	48	456	52
1,244.0	1,470	732	50	738	50
1,244.5	2,186	1,119	51	1,067	49

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP111
N-S STREET: GILBERT RD — 6-LANE ARTERIAL
E-W STREET: MAIN ST — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0015 FT/FT
WESTBOUND STREET SLOPE: 0.0027 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	37	21	57	16	43
1.0	341	203	60	138	40
1.5	1,017	595	59	422	41
2.0	1,952	1,134	58	818	42
2.5	3,107	1,799	58	1,308	42
3.0	4,458	2,576	58	1,882	42

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP113
N-S STREET: STAPLEY DR — 4-LANE ARTERIAL
E-W STREET: MAIN ST — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.002 FT/FT
WESTBOUND STREET SLOPE: 0.0035 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,237.6	0	0	0	0	0
1,237.8	5	3	60	2	40
1,238.0	26	16	62	10	38
1,238.2	67	40	60	27	40
1,238.4	165	108	65	57	35
1,238.6	353	210	59	143	41
1,238.8	548	347	63	201	37
1,239.0	864	509	59	355	41
1,239.2	1,158	667	58	491	42
1,239.4	1,532	887	58	645	42
1,239.6	1,948	1,132	58	816	42
1,240.6	4,579	2,685	59	1,894	41

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP114
N-S STREET: HORNE — 60-FT ROW COLLECTOR
E-W STREET: MAIN ST — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0019 FT/FT
WESTBOUND STREET SLOPE: 0.0001 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	23	4	17	19	83
1.0	145	39	27	106	73
1.5	383	115	30	268	70
2.0	700	218	31	482	69
2.5	1,086	346	32	740	68
3.0	1,532	496	32	1,036	68

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP115
N-S STREET: MESA DR — 4-LANE ARTERIAL
E-W STREET: MAIN ST — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0026 FT/FT
WESTBOUND STREET SLOPE: 0.0010 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,237.6	0	0	0	0	0
1,238.1	18	0	0	18	100
1,238.6	172	0	0	172	100
1,239.1	494	4	1	490	99
1,239.6	1,076	47	4	1,029	96
1,240.1	1,663	192	12	1,471	88
1,240.6	2,524	415	16	2,109	84
1,241.1	3,555	719	20	2,836	80

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP118
N-S STREET: GILBERT RD — 6-LANE ARTERIAL
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0023 FT/FT
WESTBOUND STREET SLOPE: 0.0034 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,242.6	0	0	0	0	0
1,242.8	1	1	100	0	0
1,243.0	10	8	80	2	20
1,243.2	35	23	66	12	34
1,243.4	93	58	62	35	38
1,243.6	200	132	66	68	34
1,243.8	364	234	64	130	36
1,244.0	638	376	59	262	41
1,244.2	940	544	58	396	42
1,244.4	1,285	736	57	549	43
1,244.6	1,684	950	56	734	44
1,245.6	4,277	2,321	54	1,956	46

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP121
N-S STREET: STAPLEY DR — 4-LANE ARTERIAL
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0011 FT/FT
WESTBOUND STREET SLOPE: 0.0010 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,232.8	0	0	0	0	0
1,233.2	5	1	20	4	80
1,233.6	36	5	14	31	86
1,234.0	152	38	25	114	75
1,234.4	360	122	34	238	66
1,234.8	637	241	38	396	62
1,235.2	974	390	40	584	60
1,235.6	1,570	770	49	800	51
1,236.0	2,039	996	49	1,043	51
1,236.8	2,842	1,239	44	1,603	56

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP122
N-S STREET: HORNE — 60-FT ROW COLLECTOR
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0015 FT/FT
WESTBOUND STREET SLOPE: 0.0004 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	25	8	32	17	68
1.0	172	78	45	94	55
1.5	467	229	49	238	51
2.0	865	437	51	428	49
2.5	1,350	692	51	658	49
3.0	1,912	991	52	921	48

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP123
N-S STREET: MESA DR — 4-LANE ARTERIAL
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0027 FT/FT
WESTBOUND STREET SLOPE: 0.0013 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,232.5	0	0	0	0	0
1,233.0	69	13	19	56	81
1,233.5	333	110	33	223	67
1,234.0	779	290	37	489	63
1,234.5	1,365	533	39	832	61
1,235.0	2,076	831	40	1,245	60
1,235.5	2,901	1,180	41	1,721	59
1,236.0	3,824	1,544	40	2,280	60

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP126
N-S STREET: 24TH ST — 80-FT ROW COLLECTOR
E-W STREET: 8TH AVE — 60-FT ROW COLLECTOR

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0015 FT/FT
WESTBOUND STREET SLOPE: 0.0008 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	28	12	43	16	57
1.0	184	69	37	115	63
1.5	479	174	36	305	64
2.0	871	313	36	558	64
2.5	1,345	480	36	865	64
3.0	1,892	672	36	1,220	64
3.5	2,506	887	35	1,619	65

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP127
N-S STREET: GILBERT RD — 6-LANE ARTERIAL
E-W STREET: 8TH AVE — 60-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0015 FT/FT
WESTBOUND STREET SLOPE: 0.0030 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,237.1	0	0	0	0	0
1,237.3	19	1	5	18	95
1,237.5	56	5	9	51	91
1,237.7	131	20	15	111	85
1,237.9	258	55	21	203	79
1,238.1	451	142	31	309	69
1,238.3	680	234	34	446	66
1,238.5	947	344	36	603	64
1,238.7	1,249	470	38	779	62
1,238.9	1,583	612	39	971	61
1,239.1	1,948	767	39	1,181	61
1,240.1	4,191	1,737	41	2,454	59

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP129
N-S STREET: STAPLEY DR — 4-LANE ARTERIAL
E-W STREET: 8TH AVE — 60-FT ROW COLLECTOR

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0023 FT/FT
WESTBOUND STREET SLOPE: 0.0007 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	30	11	37	19	63
1.0	252	64	25	188	75
1.5	713	163	23	550	77
2.0	1,340	293	22	1,047	78
2.5	2,109	449	21	1,660	79
3.0	3,007	629	21	2,378	79

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP130
N-S STREET: HORNE — 60-FT ROW COLLECTOR
E-W STREET: 8TH AVE — 60-FT ROW COLLECTOR

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0023 FT/FT
WESTBOUND STREET SLOPE: 0.0004 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	30	9	30	21	70
1.0	166	49	30	117	70
1.5	418	123	29	295	71
2.0	752	221	29	531	71
2.5	1,154	340	29	814	71
3.0	1,616	476	29	1,140	71

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP131
N-S STREET: MESA DR — 4-LANE ARTERIAL
E-W STREET: 8TH AVE — 60-FT ROW COLLECTOR

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0030 FT/FT
WESTBOUND STREET SLOPE: 0.0004 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	31	9	29	22	71
1.0	263	49	19	214	81
1.5	751	123	16	628	84
2.0	1,417	221	16	1,196	84
2.5	2,236	340	15	1,896	85
3.0	3,191	476	15	2,715	85

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP133
N-S STREET: 24TH ST — 80-FT ROW COLLECTOR
E-W STREET: SOUTHERN AVE — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0001 FT/FT
WESTBOUND STREET SLOPE: 0.0019 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	22	18	82	4	18
1.0	200	171	85	29	15
1.5	579	500	86	79	14
2.0	1,096	952	87	144	13
2.5	1,732	1,509	87	223	13
3.0	2,476	2,161	87	315	13

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP134
N-S STREET: GILBERT RD — 6-LANE ARTERIAL
E-W STREET: SOUTHERN AVE — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0021 FT/FT
WESTBOUND STREET SLOPE: 0.0016 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,232.3	0	0	0	0	0
1,232.8	34	0	0	34	100
1,233.3	548	274	50	274	50
1,233.8	1,619	834	52	785	48
1,234.3	3,054	1,574	52	1,480	48
1,234.8	4,904	2,506	51	2,398	49
1,235.3	7,080	3,596	51	3,484	49

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP136
N-S STREET: HARRIS DR — 80-FT ROW COLLECTOR
E-W STREET: SOUTHERN AVE — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0004 FT/FT
WESTBOUND STREET SLOPE: 0.0015 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	24	16	67	8	33
1.0	212	152	72	60	28
1.5	602	444	74	158	26
2.0	1,134	846	75	288	25
2.5	1,788	1,341	75	447	25
3.0	2,550	1,920	75	630	25

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP137
N-S STREET: STAPLEY DR — 4-LANE ARTERIAL
E-W STREET: SOUTHERN AVE — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0027 FT/FT
WESTBOUND STREET SLOPE: 0.0011 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,224.0	0	0	0	0	0
1,224.5	9	0	0	9	100
1,225.0	89	2	2	87	98
1,225.5	397	47	12	350	88
1,226.0	925	180	19	745	81
1,226.5	1,626	374	23	1,252	77
1,227.0	2,480	622	25	1,858	75
1,227.5	3,475	918	26	2,557	74
1,228.0	4,599	1,258	27	3,341	73

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP138
N-S STREET: HORNE — 80-FT ROW COLLECTOR
E-W STREET: SOUTHERN AVE — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0008 FT/FT
WESTBOUND STREET SLOPE: 0.0011 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	25	13	52	12	48
1.0	215	130	60	85	40
1.5	603	380	63	223	37
2.0	1,132	724	64	408	36
2.5	1,780	1,148	64	632	36
3.0	2,535	1,644	65	891	35

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP139
N-S STREET: MESA DR — 4-LANE ARTERIAL
E-W STREET: SOUTHERN AVE — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0050 FT/FT
WESTBOUND STREET SLOPE: 0.0007 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,219.4	0	0	0	0	0
1,219.9	21	0	0	21	100
1,220.4	172	4	2	168	98
1,220.9	560	64	11	496	89
1,221.4	1,138	186	16	952	84
1,221.9	1,873	355	19	1,518	81
1,222.4	2,750	565	21	2,185	79
1,222.9	3,758	812	22	2,946	78

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP202
N-S STREET: COUNTRY CLUB DR — 6-LANE ARTERIAL
E-W STREET: 8TH ST — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0022 FT/FT
WESTBOUND STREET SLOPE: 0.0028 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,247.0	0	0	0	0	0
1,247.5	48	19	40	29	60
1,248.0	319	152	48	167	52
1,248.5	839	391	47	448	53
1,249.0	1,533	707	46	826	54
1,249.5	2,375	1,089	46	1,286	54
1,250.0	3,349	1,530	46	1,819	54
1,250.5	4,444	2,024	46	2,420	54
1,251.0	5,647	2,565	45	3,082	55
1,251.5	6,952	3,151	45	3,801	55
1,252.0	8,351	3,778	45	4,573	55

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP204
N-S STREET: ALMA SCHOOL RD — 6-LANE ARTERIAL
E-W STREET: 8TH ST — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

NORTHBOUND STREET SLOPE: 0.0078 FT/FT
WESTBOUND STREET SLOPE: 0.0037 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,235.3	2	0	0	2	100
1,235.8	86	30	35	56	65
1,236.3	553	200	36	353	64
1,236.8	1,388	488	35	900	65
1,237.3	2,494	867	35	1,627	65
1,237.8	3,829	1,322	35	2,507	65
1,238.3	5,372	1,846	34	3,526	66
1,238.8	7,100	2,431	34	4,669	66
1,239.3	9,000	3,072	34	5,928	66
1,239.8	11,058	3,765	34	7,293	66
1,240.3	13,264	4,506	34	8,758	66

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP208
N-S STREET: COUNTRY CLUB DR — 6-LANE ARTERIAL
E-W STREET: UNIVERSITY DR — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0011 FT/FT
WESTBOUND STREET SLOPE: 0.0023 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	32	19	59	13	41
1.0	306	188	61	118	39
1.5	912	550	60	362	40
2.0	1,747	1,047	60	700	40
2.5	2,780	1,660	60	1,120	40
3.0	3,989	2,378	60	1,611	40
3.5	5,357	3,189	60	2,168	40
4.0	6,873	4,087	59	2,786	41
4.5	8,527	5,067	59	3,460	41
5.0	10,309	6,123	59	4,186	41

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP210
N-S STREET: ALMA SCHOOL RD — 6-LANE ARTERIAL
E-W STREET: UNIVERSITY DR — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0023 FT/FT
WESTBOUND STREET SLOPE: 0.0037 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	44	25	57	19	43
1.0	409	238	58	171	42
1.5	1,220	697	57	523	43
2.0	2,341	1,328	57	1,013	43
2.5	3,725	2,106	57	1,619	43
3.0	5,346	3,016	56	2,330	44
3.5	7,180	4,045	56	3,135	44
4.0	9,212	5,184	56	4,028	44
4.5	11,430	6,427	56	5,003	44
5.0	13,820	7,766	56	6,054	44

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP214
N-S STREET: COUNTRY CLUB DR — 6-LANE ARTERIAL
E-W STREET: MAIN ST — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0020 FT/FT
WESTBOUND STREET SLOPE: 0.0034 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,238.3	4	0	0	4	100
1,238.8	80	14	17	66	83
1,239.3	374	89	24	285	76
1,239.8	935	314	34	621	66
1,240.3	1,767	717	41	1,050	59
1,240.8	2,819	1,259	45	1,560	55
1,241.3	4,056	1,912	47	2,144	53
1,241.8	5,458	2,664	49	2,794	51
1,242.3	7,013	3,506	50	3,507	50
1,242.8	8,710	4,432	51	4,278	49
1,243.3	10,538	5,435	52	5,103	48

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP215
N-S STREET: EXTENSION RD — 80-FT ROW COLLECTOR
E-W STREET: MAIN ST — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0019 FT/FT
WESTBOUND STREET SLOPE: 0.0016 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	34	16	47	18	53
1.0	287	157	55	130	45
1.5	801	458	57	343	43
2.0	1,501	873	58	628	42
2.5	2,359	1,385	59	974	41
3.0	3,357	1,983	59	1,374	41
3.5	4,483	2,660	59	1,823	41
4.0	5,725	3,409	60	2,316	40
4.5	7,076	4,226	60	2,850	40
5.0	8,531	5,107	60	3,424	40

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP216
N-S STREET: ALMA SCHOOL RD — 6-LANE ARTERIAL
E-W STREET: MAIN ST — 6-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0053 FT/FT
WESTBOUND STREET SLOPE: 0.0034 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,230.5	0	0	0	0	0
1,231.0	18	18	100	0	0
1,231.5	174	137	79	37	21
1,232.0	705	454	64	251	36
1,232.5	1,622	939	58	683	42
1,233.0	2,853	1,551	54	1,302	46
1,233.5	4,340	2,275	52	2,065	48
1,234.0	6,054	3,099	51	2,955	49
1,234.5	7,977	4,016	50	3,961	50
1,235.0	10,093	5,019	50	5,074	50
1,235.5	12,389	6,103	49	6,286	51
1,236.0	14,851	7,261	49	7,590	51

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP217
N-S STREET: LONGMORE — 60-FT ROW COLLECTOR
E-W STREET: MAIN ST — 6-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0030 FT/FT
WESTBOUND STREET SLOPE: 0.0045 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	51	27	53	24	47
1.0	372	239	64	133	36
1.5	1,068	731	68	337	32
2.0	2,022	1,416	70	606	30
2.5	3,195	2,265	71	930	29
3.0	4,561	3,259	71	1,302	29
3.5	6,104	4,386	72	1,718	28
4.0	7,808	5,635	72	2,173	28
4.5	9,662	6,998	72	2,664	28
5.0	11,656	8,468	73	3,188	27

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP226
N-S STREET: EXTENSION RD — 80-FT ROW COLLECTOR
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0025 FT/FT
WESTBOUND STREET SLOPE: 0.0009 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	33	12	36	21	64
1.0	266	117	44	149	56
1.5	738	344	47	394	53
2.0	1,375	655	48	720	52
2.5	2,156	1,039	48	1,117	52
3.0	3,063	1,487	49	1,576	51
3.5	4,086	1,995	49	2,091	51
4.0	5,213	2,557	49	2,656	51
4.5	6,440	3,170	49	3,270	51
5.0	7,757	3,830	49	3,927	51

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP227
N-S STREET: ALMA SCHOOL RD — 6-LANE ARTERIAL
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0033 FT/FT
WESTBOUND STREET SLOPE: 0.0018 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,223.8	0	0	0	0	0
1,224.3	16	0	0	16	100
1,224.8	152	17	11	135	89
1,225.3	619	131	21	488	79
1,225.8	1,385	389	28	996	72
1,226.3	2,378	744	31	1,634	69
1,226.8	3,570	1,182	33	2,388	67
1,227.3	4,939	1,694	34	3,245	66
1,227.8	6,471	2,272	35	4,199	65
1,228.3	8,153	2,912	36	5,241	64
1,228.8	9,974	3,608	36	6,366	64

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP228
N-S STREET: LONGMORE — 80-FT ROW COLLECTOR
E-W STREET: BROADWAY RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0010 FT/FT
WESTBOUND STREET SLOPE: 0.0031 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	36	23	64	13	36
1.0	313	218	70	95	30
1.5	887	638	72	249	28
2.0	1,671	1,215	73	456	27
2.5	2,635	1,928	73	707	27
3.0	3,757	2,760	73	997	27
3.5	5,024	3,702	74	1,322	26
4.0	6,425	4,745	74	1,680	26
4.5	7,950	5,882	74	2,068	26
5.0	9,591	7,108	74	2,483	26

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP229
N-S STREET: DOBSON RD — 6-LANE ARTERIAL
E-W STREET: BROADWAY RD — 6-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0039 FT/FT
WESTBOUND STREET SLOPE: 0.0034 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,210.9	0	0	0	0	0
1,211.4	21	15	71	6	29
1,211.9	224	130	58	94	42
1,212.4	841	446	53	395	47
1,212.9	1,753	914	52	839	48
1,213.4	2,962	1,532	52	1,430	48
1,213.9	4,401	2,266	51	2,135	49
1,214.4	6,048	3,105	51	2,943	49
1,214.9	7,885	4,040	51	3,845	49
1,215.4	9,898	5,064	51	4,834	49
1,215.9	12,076	6,172	51	5,904	49

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP232
N-S STREET: COUNTRY CLUB DR — 6-LANE ARTERIAL
E-W STREET: 8TH AVE — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0049 FT/FT
WESTBOUND STREET SLOPE: 0.0038 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,224.4	0	0	0	0	0
1,224.9	37	0	0	37	100
1,225.4	303	71	23	232	77
1,225.9	922	283	31	639	69
1,226.4	1,796	606	34	1,190	66
1,226.9	2,880	1,015	35	1,865	65
1,227.4	4,147	1,499	36	2,648	64
1,227.9	5,581	2,050	37	3,531	63
1,228.4	7,166	2,662	37	4,504	63
1,228.9	8,890	3,328	37	5,562	63
1,229.4	10,745	4,046	38	6,699	62

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP233
N-S STREET: EXTENSION RD — 80-FT ROW COLLECTOR
E-W STREET: 8TH AVE — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0066 FT/FT
WESTBOUND STREET SLOPE: 0.0029 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,222.2	0	0	0	0	0
1,222.7	44	21	48	23	52
1,223.2	360	162	45	198	55
1,223.7	967	411	43	556	57
1,224.2	1,781	740	42	1,041	58
1,224.7	2,771	1,138	41	1,633	59
1,225.2	3,917	1,597	41	2,320	59
1,225.7	5,202	2,110	41	3,092	59
1,226.2	6,615	2,673	40	3,942	60
1,226.7	8,146	3,283	40	4,863	60
1,227.2	9,786	3,935	40	5,851	60

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP234
N-S STREET: ALMA SCHOOL RD — 6-LANE ARTERIAL
E-W STREET: 8TH AVE — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0030 FT/FT
WESTBOUND STREET SLOPE: 0.0022 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,218.2	1	0	0	1	100
1,218.7	67	26	39	41	61
1,219.2	377	144	38	233	62
1,219.7	916	338	37	578	63
1,220.2	1,623	589	36	1,034	64
1,220.7	2,474	890	36	1,584	64
1,221.2	3,452	1,233	36	2,219	64
1,221.7	4,547	1,615	36	2,932	64
1,222.2	5,747	2,032	35	3,715	65
1,222.7	7,046	2,482	35	4,564	65
1,223.2	8,436	2,961	35	5,475	65

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP235
N-S STREET: LONGMORE — 80-FT ROW COLLECTOR
E-W STREET: 8TH AVE/PUEBLO AVE — 80-FT ROW COLLECTOR

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0033 FT/FT
WESTBOUND STREET SLOPE: 0.0024 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,211.5	0	0	0	0	0
1,212.0	33	24	73	9	27
1,212.5	209	127	61	82	39
1,213.0	529	288	54	241	46
1,213.5	949	493	52	456	48
1,214.0	1,456	737	51	719	49
1,214.5	2,038	1,015	50	1,023	50
1,215.0	2,685	1,322	49	1,363	51
1,215.5	3,392	1,656	49	1,736	51
1,216.0	4,152	2,014	49	2,138	51
1,216.5	4,961	2,394	48	2,567	52

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP236
N-S STREET: DOBSON RD — 6-LANE ARTERIAL
E-W STREET: 8TH AVE — 60-FT ROW COLLECTOR

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0016 FT/FT
WESTBOUND STREET SLOPE: 0.0025 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	38	22	58	16	42
1.0	264	122	46	142	54
1.5	744	308	41	436	59
2.0	1,397	553	40	844	60
2.5	2,199	849	39	1,350	61
3.0	3,132	1,189	38	1,943	62
3.5	4,183	1,568	37	2,615	63
4.0	5,344	1,984	37	3,360	63
4.5	6,605	2,432	37	4,173	63
5.0	7,959	2,910	37	5,049	63

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP239
N-S STREET: COUNTRY CLUB DR — 6-LANE ARTERIAL
E-W STREET: SOUTHERN AVE — 6-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0041 FT/FT
WESTBOUND STREET SLOPE: 0.0027 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,216.3	0	0	0	0	0
1,216.8	56	32	57	24	43
1,217.3	373	212	57	161	43
1,217.8	1,042	534	51	508	49
1,218.3	2,003	976	49	1,027	51
1,218.8	3,192	1,516	47	1,676	53
1,219.3	4,582	2,141	47	2,441	53
1,219.8	6,155	2,845	46	3,310	54
1,220.3	7,896	3,621	46	4,275	54
1,220.8	9,792	4,463	46	5,329	54
1,221.3	11,834	5,368	45	6,466	55

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP240
N-S STREET: EXTENSION RD — 80-FT ROW COLLECTOR
E-W STREET: SOUTHERN AVE — 6-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0026 FT/FT
WESTBOUND STREET SLOPE: 0.0004 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	30	8	27	22	73
1.0	223	71	32	152	68
1.5	620	218	35	402	65
2.0	1,157	422	36	735	64
2.5	1,814	675	37	1,139	63
3.0	2,579	972	38	1,607	62
3.5	3,440	1,308	38	2,132	62
4.0	4,389	1,680	38	2,709	62
4.5	5,420	2,086	38	3,334	62
5.0	6,530	2,525	39	4,005	61

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP241
N-S STREET: ALMA SCHOOL RD — 8-LANE ARTERIAL
E-W STREET: SOUTHERN AVE — 6-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0069 FT/FT
WESTBOUND STREET SLOPE: 0.0024 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,211.6	1	0	0	1	100
1,212.1	89	25	28	64	72
1,212.6	592	182	31	410	69
1,213.1	1,589	476	30	1,113	70
1,213.6	2,946	884	30	2,062	70
1,214.1	4,607	1,383	30	3,224	70
1,214.6	6,538	1,962	30	4,576	70
1,215.1	8,718	2,615	30	6,103	70
1,215.6	11,127	3,335	30	7,792	70
1,216.1	13,748	4,118	30	9,630	70
1,216.6	16,570	4,959	30	11,611	70

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP242
N-S STREET: LONGMORE — 80-FT ROW COLLECTOR
E-W STREET: SOUTHERN AVE — 6-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0007 FT/FT
WESTBOUND STREET SLOPE: 0.0016 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	27	16	59	11	41
1.0	221	142	64	79	36
1.5	644	436	68	208	32
2.0	1,225	844	69	381	31
2.5	1,941	1,350	70	591	30
3.0	2,777	1,943	70	834	30
3.5	3,721	2,615	70	1,106	30
4.0	4,766	3,360	70	1,406	30
4.5	5,903	4,173	71	1,730	29
5.0	7,127	5,049	71	2,078	29

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP243
N-S STREET: DOBSON RD — 6-LANE ARTERIAL
E-W STREET: SOUTHERN AVE — 5-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0033 FT/FT
WESTBOUND STREET SLOPE: 0.0021 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,201.2	0	0	0	0	0
1,201.7	26	23	88	3	12
1,202.2	283	172	61	111	39
1,202.7	893	475	53	418	47
1,203.2	1,747	884	51	863	49
1,203.7	2,809	1,385	49	1,424	51
1,204.2	4,054	1,968	49	2,086	51
1,204.7	5,466	2,626	48	2,840	52
1,205.2	7,028	3,351	48	3,677	52
1,205.7	8,734	4,141	47	4,593	53
1,206.2	10,570	4,990	47	5,580	53

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP301
N-S STREET: EXTENSION RD — 80 FT ROW COLLECTOR
E-W STREET: BASELINE RD — 6-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0007 FT/FT
WESTBOUND STREET SLOPE: 0.0006 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	42	31	74	11	26
1.0	354	275	78	79	22
1.5	1,052	844	80	208	20
2.0	2,016	1,635	81	381	19
2.5	3,206	2,615	82	591	18
3.0	4,596	3,763	82	833	18

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP302
N-S STREET: ALMA SCHOOL RD — 4-LANE ARTERIAL
E-W STREET: BASELINE RD — 6-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0010 FT/FT
WESTBOUND STREET SLOPE: 0.0039 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,203.2	0	0	0	0	0
1,203.7	18	18	100	0	0
1,204.2	198	186	94	12	6
1,204.7	727	602	83	125	17
1,205.2	1,564	1,206	77	358	23
1,205.7	2,674	1,962	73	712	27

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP304
N-S STREET: DOBSON RD — 6-LANE ARTERIAL
E-W STREET: BASELINE RD — 6-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0035 FT/FT
WESTBOUND STREET SLOPE: 0.0020 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,196.7	0	0	0	0	0
1,196.9	3	1	33	2	67
1,197.1	22	7	32	15	68
1,197.3	69	22	32	47	68
1,197.5	163	48	29	115	71
1,197.7	348	116	33	232	67
1,197.9	597	198	33	399	67
1,198.1	914	322	35	592	65
1,198.3	1,303	473	36	830	64
1,198.5	1,733	633	37	1,100	63
1,198.7	2,232	832	37	1,400	63

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP308
N-S STREET: EXTENSION RD — 80 FT ROW COLLECTOR
E-W STREET: GUADALUPE RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: NO

SOUTHBOUND STREET SLOPE: 0.0001 FT/FT
WESTBOUND STREET SLOPE: 0.0004 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
0.0	0	0	0	0	0
0.5	12	8	67	4	33
1.0	108	78	72	30	28
1.5	308	229	74	79	26
2.0	580	436	75	144	25
2.5	915	692	76	223	24
3.0	1,306	991	76	315	24
3.5	1,747	1,329	76	418	24
4.0	2,235	1,704	76	531	24

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: CP309
N-S STREET: ALMA SCHOOL RD — 4-LANE ARTERIAL
E-W STREET: GUADALUPE RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.0015 FT/FT
WESTBOUND STREET SLOPE: 0.0007 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,199.2	0	0	0	0	0
1,199.7	16	6	37	10	63
1,200.2	178	69	39	109	61
1,200.7	611	244	40	367	60
1,201.2	1,258	504	40	754	60
1,201.7	2,081	833	40	1,248	60
1,202.2	3,065	1,233	40	1,832	60

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

TEMPE CANAL FLOODPLAIN DELINEATION STUDY
(FCD 2002-22)

INTERSECTION RATING CURVE

CONCENTRATION POINT: S310A
N-S STREET: DOBSON RD — 4-LANE ARTERIAL
E-W STREET: GUADALUPE RD — 4-LANE ARTERIAL

SURVEYED INTERSECTION: YES

SOUTHBOUND STREET SLOPE: 0.00094 FT/FT
WESTBOUND STREET SLOPE: 0.0049 FT/FT

WATER SURFACE ELEV. (FT)	COMBINED CAPACITY (CFS)	WESTBOUND CAPACITY		SOUTHBOUND CAPACITY	
		CFS	% TOTAL	CFS	% TOTAL
1,193.0	0	0	0	0	0
1,193.5	12	5	42	7	58
1,194.0	129	78	60	51	40
1,194.5	540	317	59	223	41
1,195.0	1,318	831	63	487	37
1,195.5	2,388	1,560	65	828	35
1,196.0	3,667	2,455	67	1,212	33

Rating curve data based on Normal Depth calculations, generated using FlowMaster software and either intersection survey data or typical street cross-sections.

D.5.5 STORM DRAIN SUMMARY

STORM DRAIN SUMMARY

Note: Pipe Capacity is based on Manning's Equation, with a Manning's 'n' value of 0.013, unless otherwise noted.

INTERSECTION	HEC-1 ID	PIPE FLOW LEAVING INTERSECTION					NOTE
		HEC-1 ID	Diameter (in.)	Slope (ft/ft)	Area (sq. ft.)	Capacity (cfs)	
STAPLEY DR	CP102	P102	36	0.0015	7.1	26	
UNIVERSITY DR							
HORNE	CP103	P103	33	0.0023	5.9	25	
8TH ST							
HORNE	CP104	P104	48	0.0015	12.6	56	Size and slope from as-built
UNIVERSITY DR							
MESA DR	CP106	P106	24	0.0007	3.1	6	
UNIVERSITY DR							
GILBERT RD	CP111						
MAIN ST		P111	48	0.002	12.6	64	
HARRIS DR	CP112						
MAIN ST		P112	60	0.001	19.6	83	
STAPLEY DR	CP113						
MAIN ST		P113	60	0.001	19.6	83	
HORNE	CP114						
MAIN ST		P114	78	0.001	33.2	166	
MESA DR	CP115						
MAIN ST		P115	78	0.001	33.2	166	
CENTER ST	CP116						Pipe flow leaves 100 Watershed
MAIN ST		P116	84	0.001	38.5	203	
GILBERT RD	CP118	P118	48	0.002	12.6	64	
BROADWAY RD							
WILLIAMS	CP119						Pipe flow is directed east to CP118
BROADWAY RD		P119 / IP119	36	0.001	7.1	21	
STAPLEY DR	CP121	P121	42	0.002	9.6	45	
BROADWAY RD							
HORNE	CP122						Pipe flow is directed east to CP121
BROADWAY RD		P122 / IP122	27	0.002	4.0	14	
MESA DR	CP123	P123	36	0.0025	7.1	33	
BROADWAY RD							
24TH ST	CP126	P126	48	0.0024	12.6	71	Pipe outlets to Silvergate Park located in sub-basin 134
8TH AVE							

INTERSECTION	HEC-1 ID	PIPE FLOW LEAVING INTERSECTION					NOTE
		HEC-1 ID	Diameter (in.)	Slope (ft/ft)	Area (sq. ft.)	Capacity (cfs)	
GILBERT RD	CP127	P127	48	0.002	12.6	64	
8TH AVE							
WILLIAMS	CP128						Pipe flow is directed east to CP127
8TH AVE		P128 / IP128	24	0.001	3.1	7	
STAPLEY DR	CP129	P129	42	0.002	9.6	45	
8TH AVE							
MESA DR	CP131	P131	48	0.0025	12.6	72	
8TH AVE							
24TH ST	CP133						
SOUTHERN AVE		P133	30	0.002	4.9	18	
GILBERT RD	CP134	P134	84	0.002	38.5	286	Pipe outlets to Emerald Park
SOUTHERN AVE							
TOLTEC	CP135						
SOUTHERN AVE		P135	36	0.0015	7.1	26	
HARRIS DR	CP136						
SOUTHERN AVE		P136	42	0.0015	9.6	39	
STAPLEY DR	CP137						
SOUTHERN AVE		P137	72	0.001	28.3	134	
HORNE	CP138	P138	72	0.001	28.3	134	Pipe outlets to Sherwood Park
SOUTHERN AVE							
MESA DR	CP139						
SOUTHERN AVE		P139	54	0.001	15.9	62	
CENTER ST	CP140	P140	60	0.001	19.6	83	Pipe outlets to Heritage Park
SOUTHERN AVE							
COUNTRY CLUB DR	CP202	P202	48	0.0005	12.6	32	Pipe flow leaves study area; Size and slope from as-built
8TH ST							
CHERRY	CP203						
8TH ST		P203	48	0.0017	12.6	59	
ALMA SCHOOL RD	CP204	N/A	84	0.00075	38.5	175	84" pipe reaches full capacity within the 100 watershed, and is therefore not modeled in the 200 watershed
8TH ST							
ALMA SCHOOL RD	CP205	N/A	84	0.00075	38.5	175	84" pipe reaches full capacity within the 100 watershed, and is therefore not modeled in the 200 watershed
TEMPE CANAL							
COUNTRY CLUB DR	CP208	P208 / IP208	36	0.0006	7.1	16	Size and slope from as-built
UNIVERSITY DR							
EXTENSION RD	CP209	P209	24	0.0016	3.1	9	
UNIVERSITY DR							

INTERSECTION	HEC-1 ID	PIPE FLOW LEAVING INTERSECTION					NOTE
		HEC-1 ID	Diameter (in.)	Slope (ft/ft)	Area (sq. ft.)	Capacity (cfs)	
ALMA SCHOOL RD	CP210	N/A	84	0.00075	38.5	175	84" pipe reaches full capacity within the 100 watershed, and is therefore not modeled in the 200 watershed
UNIVERSITY DR							
DOBSON RD	CP212	P212	54	0.0025	15.9	99	Pipe flow leaves study area
UNIVERSITY DR							
TEMPE CANAL	CP213						
UNIVERSITY DR		P213 / IP213	24	0.0025	3.1	11	
COUNTRY CLUB DR	CP214						84" pipe reaches full capacity within the 100 watershed, and is therefore not modeled in the 200 watershed
MAIN ST		N/A	84	0.00075	38.5	175	
EXTENSION RD	CP215						84" pipe reaches full capacity within the 100 watershed, and is therefore not modeled in the 200 watershed
MAIN ST		N/A	84	0.00075	38.5	175	
ALMA SCHOOL RD	CP216	N/A	84	0.00075	38.5	175	84" pipe reaches full capacity within the 100 watershed, and is therefore not modeled in the 200 watershed
MAIN ST							
LONGMORE	CP217						
MAIN ST		P217	18	0.0027	1.8	5	
DOBSON RD	CP218	P218 / IP218	54	0.0025	15.9	99	Large dip under railroad overpass; pumped
MAIN ST							
COUNTRY CLUB DR	CP220	P220	48	0.0023	12.6	69	
RAILROAD							
ALMA SCHOOL RD	CP227	P227	30	0.0025	4.9	21	
BROADWAY RD							
DOBSON RD	CP229	P229	27	0.0020	4.0	14	
BROADWAY RD							
TEMPE CANAL	CP220						Pipe flow leaves study area
BROADWAY RD		P230	48	0.0034	12.6	84	
RAILROAD	CP231						
8TH AVE		P231	36	0.0014	7.1	25	
COUNTRY CLUB DR	CP232	P232	60	0.0028	19.6	138	
8TH AVE							
ALMA SCHOOL RD	CP234	P234	54	0.0029	15.9	106	
8TH AVE							
LONGMORE	CP235						
PUEBLO ST (8TH AVE)		P235	30	0.0030	4.9	23	
DOBSON RD	CP236	P236	48	0.0020	12.6	64	
8TH AVE							
ROOSEVELT RD	CP227						
8TH AVE		P237	24	0.0025	3.1	11	

INTERSECTION	HEC-1 ID	PIPE FLOW LEAVING INTERSECTION					NOTE
		HEC-1 ID	Diameter (in.)	Slope (ft/ft)	Area (sq. ft.)	Capacity (cfs)	
COUNTRY CLUB DR	CP239	P239	72	0.002	28.3	190	
SOUTHERN AVE							
EXTENSION RD	CP240						Size and slope from as-built; capacity based on equivalent circular diameter of 42.4"
SOUTHERN AVE		P240	34" x 53"	0.00093	9.8	30	
ALMA SCHOOL RD	CP241	P241	54	0.0021	15.9	90	
SOUTHERN AVE							
LONGMORE	CP242						Size and slope from as-built
SOUTHERN AVE		P242	42	0.0025	9.6	50	
DOBSON RD	CP243						
SOUTHERN AVE		P243	66	0.0015	23.8	130	
COUNTRY CLUB DR	CP245						
ADOT CHANNEL		P245	72	0.002	28.3	190	
ALMA SCHOOL RD	CP302						
BASELINE RD		P302	48	0.0004	12.6	29	
LONGMORE	CP303						
BASELINE RD		P303	48	0.0011	12.6	48	
DOBSON RD	CP304						Pipe outlets to lake on the southwest corner of Baseline Rd and Dobson Rd
BASELINE RD		P304	48	0.0011	12.6	48	
SR 101	CP305						Pipe outlets to 84" ADOT pipe
BASELINE RD		P305	24	0.001	3.1	7	
ALMA SCHOOL RD	CP307	P307	36	0.0004	7.1	13	Pipe outlets to the Dobson Ranch golf course
MEDINA AVE							
EXTENSION RD	CP308						Pipe outlets to a retention basin within sub-basin 309
GUADALUPE RD		P308	36	0.0004	7.1	13	
ALMA SCHOOL RD	CP309						Pipe outlets to the Dobson Ranch golf course
GUADALUPE RD		P309	27	0.0004	4.0	6	
DOBSON RD	S310A						Pipe outlets to lake located in sub-basin 315
GUADALUPE RD		P310A	42	0.001	9.6	32	
SR 101	CP311						Pipe outlets to 84" ADOT pipe
GUADALUPE RD		P311	36	0.001	7.1	21	
EXTENSION RD	CP312						Pipe outlets to a retention basin in sub-basin 313
WESTERN CANAL		P312	54	0.0004	15.9	39	
ALMA SCHOOL RD	CP313						Pipe outlets to Palo Verde Park
WESTERN CANAL		P313	27	0.0013	4.0	11	
DOBSON RD	CP314						Pipe outlets to Carriage Lane Park
WESTERN CANAL		P314	24	0.0001	3.1	2	
SR 101	CP315	RP315	84	0.0001	38.5	64	ADOT pipe drains north to the Price Drainge Tunnel
WESTERN CANAL							

INTERSECTION	HEC-1 ID	PIPE FLOW LEAVING INTERSECTION					NOTE
		HEC-1 ID	Diameter (in.)	Slope (ft/ft)	Area (sq. ft.)	Capacity (cfs)	
SR 101	CP316	RP316	84	0.0001	38.5	64	ADOT pipe drains north to the Price Drainge Tunnel
WESTERN CANAL							
SR 101	CP317	N/A	84	0.0001	38.5	64	ADOT pipe drains north to the Price Drainge Tunnel
WESTERN CANAL							

D.5.6 ANALYSIS OF 54" PIPE P146A

ANALYSIS OF 54-INCH PIPE UNDER RAILROAD P146A

From field survey, City of Mesa storm drain quarter section maps, and ADOT Channel as-builts:
1-54" RCP
Length = 178 ft
Pipe Inv Upstream = 1205.18 ft
Approix. Pipe Slope = 0.10 %
Approx. Pipe Inv Downstream = 1205.18 – (178 ft)(0.001 ft/ft) = 1205.00 ft

Minimum top of channel elevation at upstream end of pipe = Spillway Elevation = 1213 ft
Maximum Headwater on Pipe = 1213 – 1205.18 = 7.82 ft

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

January 22, 2004

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft)	4.5
FHWA Chart Number	1
FHWA Scale Number (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.013
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	178.0
Invert Elevation at Downstream end of Culvert (ft)	1,205.0
Invert Elevation at Upstream end of Culvert (ft)	1,205.18
Culvert Slope (ft/ft)	0.001
Starting Flow Rate (cfs)	174.8
Incremental Flow Rate (cfs)	0.0
Ending Flow Rate (cfs)	174.8
Starting Tailwater Depth (ft)	4.5
Incremental Tailwater Depth (ft)	0.0
Ending Tailwater Depth (ft)	4.5

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
174.8	4.5	7.82	8.54	4.5	3.84	4.5	10.99

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Phone:(281)440-3787, Fax:(281)440-4742, Email:software@dodson-hydro.com
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Capacity of 54" Pipe with Headwater of 7.82 ft = 174.8 cfs = round to 175 cfs

D.5.7 SUB-BASIN DIVERSION VOLUME CALCULATIONS

100 WATERSHED SUB-BASIN DIVERSION VOLUME CALCULATIONS

For shallow retention areas with no detailed topographic information available, volumes were approximated from field observations and aerial photos, using a simple area times depth calculation:

SUB-BASIN	RETENTION LOCATION	PONDING DEPTH (FT)	APPROX. AREA (SQ FT)	RETENTION VOLUME (AF)
102	SCHOOL	0.5	522,720	6
105	SCHOOL	1	784,080	18
108	PARK	1	1,089,000	25
115	PARK	1	479,160	11
122	SCHOOL	1	1,176,120	27
129	PARK	1	435,600	10
134	PARK	1	1,045,440	24
136	SCHOOL	1	1,132,560	26
139	SCHOOL	0.5	348,480	4
140	SCHOOL	0.5	348,480	4
144	PARK	2	87,120	4
146	PARK	2	65,340	3

200 WATERSHED SUB-BASIN DIVERSION VOLUME CALCULATIONS

For shallow retention areas with no detailed topographic information available, volumes were approximated from field observations and aerial photos, using a simple area times depth calculation:

SUB-BASIN	RETENTION LOCATION	PONDING DEPTH (FT)	APPROX. AREA (SQ FT)	RETENTION VOLUME (AF)
204	SCHOOL	1	350,000	8
206	SCHOOL	1	165,000	4
208	PARK	1	167,000	4
210	SCHOOL	1	600,000	14
212	SCHOOL	1	82,000	2
223	SCHOOL	2.5	75,800	4
		1	75,000	2
224	SCHOOL	2.5	90,000	5
232	SCHOOL	2.5	68,000	4
234	PARK	1	750,000	17
236	SCHOOL	1	105,000	2
239	PARK	1	208,000	5
241	SCHOOL	1	630,000	14

For retention basins with topographic information available, volumes were calculated using the conic method, where Incremental Volume = h/3 (A1 + A2 + (A1*A2) ^ 0.5):

SUB-BASIN 249 – FIESTA MALL		
ELEVATION	AREA (SQ FT)	INCREMENTAL VOLUME (AF)
1190	32,000	
1200	64,000	11
1205	100,000	9
	TOTAL VOLUME	20

For commercial areas which were observed to have significant retention storage, the provided retention volume was calculated as 80% of the 100-year, 2-hour runoff volume:

SUB-BASIN 250 – MESA COMMUNITY COLLEGE			
LAND USE	AREA (Ac)	C	100-YEAR RUNOFF COEFFICIENT, C = 0.67 100-YEAR, 2-HOUR PRECIPITATION DEPTH, P = 2.60 INCHES AREA, A = 130 ACRES RETENTION VOLUME, V = C (P/12) A x 80% = 15 AF
GRASS	32	0.15	
DESERT LANDSCAPING	5	0.70	
ASPHALT PAVEMENT OR ROOF	93	0.85	
WEIGHTED RUNOFF COEFFICIENT	130	0.67	

SUB-BASIN 251 – DESERT SAMARITAN HOSPITAL			
LAND USE	AREA (Ac)	C	100-YEAR RUNOFF COEFFICIENT, C = 0.81 100-YEAR, 2-HOUR PRECIPITATION DEPTH, P = 2.60 INCHES AREA, A = 70 ACRES RETENTION VOLUME, V = C (P/12) A x 80% = 10 AF
GRASS	4	0.15	
DESERT LANDSCAPING	2	0.70	
ASPHALT PAVEMENT OR ROOF	64	0.85	
WEIGHTED RUNOFF COEFFICIENT	70	0.81	

300 WATERSHED SUB-BASIN DIVERSION VOLUME CALCULATIONS

For shallow retention areas with no detailed topographic information available, volumes were approximated from field observations and aerial photos, using a simple area times depth calculation:

SUB-BASIN	RETENTION LOCATION	PONDING DEPTH (FT)	APPROX. AREA (SQ FT)	RETENTION VOLUME (AF)
304	LAKES	5	217,800	25
307	PARK	3	348,480	24
310	GOLF COURSE	3	333,960	23
314	SCHOOL	0.5	174,240	2
		3	366,586	25

400 WATERSHED SUB-BASIN DIVERSION VOLUME CALCULATIONS

For shallow retention areas with no detailed topographic information available, volumes were approximated from field observations and aerial photos, using a simple area times depth calculation:

SUB-BASIN	RETENTION LOCATION	PONDING DEPTH (FT)	APPROX. AREA (SQ FT)	RETENTION VOLUME (AF)
401	Open Space	1	1437480	33
403	Park	1	914760	21

For commercial areas which were observed to have significant retention storage, the provided retention volume was calculated as 80% of the 100-year, 2-hour runoff volume:

SUB-BASIN 402			
LAND USE	**AREA (Ac)**	**C**	
Open Space	63	0.38	100-YEAR RUNOFF COEFFICIENT, C = 0.74 100-YEAR, 2-HOUR PRECIPITATION DEPTH, P = 2.6 INCHES AREA, A = 352 ACRES RETENTION VOLUME, V = C (P/12) A x 80% = 45 AF
Medium Density Residential	1	0.75	
Multi Family Residential	45	0.75	
Industrial	62	0.88	
Commercial	181	0.81	
WEIGHTED RUNOFF COEFFICIENT	352	0.74	

Appendix D: Hydrologic Analysis Supporting Documentation

D.6 Hydrologic Calculations

D.6.1 100-Year, 6-Hour HEC-1 Output
D.6.2 100-Year, 24-Hour HEC-1 Output

D.6.1 100-YR, 6-HR HEC-1 OUTPUT

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   27OCT06  TIME  11:13:57  *
*                                      *
****************************************
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****************************************
*                                      *
*    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

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1                                    HEC-1 INPUT                                                    PAGE  1

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

        1           ID   TEMPE CANAL FLOODPLAIN DELINEATION STUDY (FCD 2002-22)
        2           ID
        3           ID   100-YEAR, 6-HOUR HEC-1 MODEL
        4           ID   FILENAME: TC-6HR.DAT           DATE: OCTOBER 27, 2006
        5           ID
        6           ID
        7           ID   PREPARED BY HOSKIN-RYAN CONSULTANTS, INC. (HRC 03-023)
        8           ID   IN ASSOCIATION WITH COE & VAN LOO CONSULTANTS, INC.
        9           ID
       10           ID   THE TEMPE CANAL FDS MODEL AREA IS BOUNDED BY TEMPE CANAL AND PRICE ROAD TO
       11           ID   THE WEST, CONSOLIDATED CANAL AND SOUTHERN-PACIFIC RAILROAD TO THE EAST,
       12           ID   CROSSCUT CANAL TO THE NORTH, AND WESTERN CANAL AND US60 TO THE SOUTH.
       13           ID   THREE WATERSHED AREAS ARE INCLUDED IN THIS MODEL; THE 100, 200, AND 300
       14           ID   SERIES.  WATERSHED BOUNDARY DESCRIPTIONS ARE GIVEN IN THE MODEL.
       15           ID
       16           ID   INFLOW HYDROGRAPHS TO THE MODEL ARE INCLUDED IN THE FILE TC-6HR.DSS
       17           ID   AND COME FROM THE "CONSOLIDATED CANAL FLOODPLAIN DELINEATION STUDY,"
       18           ID   BY TETRA TECH INC., MARCH 2003, AND THE "GILBERT-CHANDLER ADMS,
       19           ID   VOL II-FUTURE CONDITIONS HYDROLOGY," BY FCDMC, JANUARY 1994.
       20           ID
       21           ID   NOTES:
       22           ID    - SUB-BASIN AND PRECIPITATION DATA WERE GENEREATED USING DDMSW VERSION 2.1.0
       23           ID    - NORMAL DEPTH ROUTING WAS USED FOR STREET FLOW ROUTING
       24           ID    - KINEMATIC WAVE ROUTING WAS USED FOR PIPE FLOW ROUTING
       25           ID    - STREET INTERSECTION FLOW SPLIT RATING CURVES WERE BASED ON NORMAL DEPTH
       26           ID    - PB WERE ADJUSTED BY AREAL REDUCTION FACTORS BASED ON THE FCDMC DRAINAGE
       27           ID      DESIGN MANUAL.  KEY CONCENTRATION POINTS WERE IDENTIFIED ALONG THE
       28           ID      TEMPE CANAL AND ADOT US60 CHANNEL, AND AT DOBSON LAKES AND CARRIAGE
       29           ID      LANE PARK.
       30           ID
                    *  ********************************************************************
                    *  *                                                                  *
                    *  * 100 SERIES WATERSHED -                                           *
                    *  * BOUNDED TO THE NORTH BY CROSSCUT CANAL, TO THE EAST BY CONSOLIDATED *
                    *  * CANAL, TO THE SOUTH BY US60 (SUPERSTITION) FREEWAY, AND TO THE   *
                    *  * WEST BY CENTER STREET AND THE SOUTHERN-PACIFIC RAILROAD.         *
                    *  *                                                                  *
                    *  ********************************************************************
                    *
                    *     CHANGED: START TIME, AT IF71 - CHANGED CONSTANT FLOW TO 33 HR AND ADDED
                    *     ZERO AT 34 HR, AT BS142 CHANGED FIRST Q FROM 60 TO 59.9 TO FIX TIME TO
                    *     PEAK, NO. OF TIME STEPS FROM 300 TO 600, AND
                    *     ADDED NDXMIN OF 6 TO ALL RK RECORDS   MIKE DUNCAN   FCD   05-04-04
                    *
                    *     CHANGED: TEXT NOTE ON RP147.  HOSKIN-RYAN CONSULTANTS, INC. 2006-10-27
                    *
```

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                 *
                 *DIAGRAM
 31              IT       5 01JUL93     600     600
 32              IO       5
1                                        HEC-1 INPUT                                                    PAGE  2

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

 33              KK   SB101
 34              KM  RUNOFF FROM SUB BASIN 101
 35              BA   0.070
 36              IN      15
 37              PB   2.81
 38              KM   AREAL REDUCTION BASED ON ENTIRE 100 SERIES AREA
 39              KM   AREA IS BOUNDED BY THE CONSOLIDATED CANAL ON THE WEST,US 60 ON THE SOUTH,
 40              KM   CENTER ST AND SOME PORTIONS EAST OF CENTER ST ON THE EAST AND TEMPE CANAL
 41              KM   ON THE NORTH.
 42              KM   TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 10.29 SQUARE MILES
 43              KM   AREA REDUCTION FACTOR = 0.937
 44              PC   0.000   0.013   0.019   0.029   0.044   0.057   0.069   0.081   0.095   0.107
 45              PC   0.122   0.138   0.160   0.206   0.290   0.466   0.677   0.807   0.877   0.919
 46              PC   0.947   0.961   0.974   0.987   1.000
 47              LG    0.20    0.26    4.80    0.37      44
 48              UC   0.333   0.210
 49              UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 50              UA     100
                 *

 51              KK    IF17
 52              KM  INFLOW IF17 - REFERENCE STATION 17-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
 53              KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
 54              BA       0
 55              ZR     =QI A=TEMPE  B=17-OUT  C=FLOW  F=CC6HR
                 *

 56              KK    RS17
 57              KM  CONSOLIDATED CANAL & STAPLEY DR: ROUTE STREET FLOW IF17 TO
 58              KM  CP101 VIA STAPLEY DR
 59              KM  4 LANE ARTERIAL
 60              RS       3    FLOW      -1
 61              RC   0.018   0.018   0.018    2630  0.0023
 62              RX       0       0      31      31      99      99     130     130
 63              RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

 64              KK    IF25
 65              KM  INFLOW IF25 - REFERENCE STATION 25-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
 66              KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
 67              BA       0
 68              ZR     =QI A=TEMPE  B=25-OUT  C=FLOW  F=CC6HR
                 *

 69              KK    RS25
 70              KM  CONSOLIDATED CANAL & 8TH ST: ROUTE STREET FLOW IF25 TO
 71              KM  CP101 VIA 8TH ST
 72              KM  60-FT RIGHT-OF-WAY COLLECTOR
 73              RS       3    FLOW      -1
 74              RC   0.018   0.018   0.018    2640  0.0023
 75              RX       0       0      13      13      47      47      60      60
 76              RY       4    0.33    0.33       0       0    0.33    0.33       4
                 *
1                                        HEC-1 INPUT                                                    PAGE  3

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

 77              KK   CP101
 78              KM  COMBINE 17-OUT,SB101,25-OUT
 79              HC       3
                 *

 80              KK   RS101
 81              KM  8TH ST & STAPLEY DR: ROUTE STREET FLOW CP101 TO CP102 VIA STAPLEY DR
 82              KM  4-LANE ARTERIAL
 83              RS       2    FLOW      -1
 84              RC   0.018   0.018   0.018    2630  0.0023
 85              RX       0       0      31      31      99      99     130     130
 86              RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

 87              KK   SB102
 88              KM  RUNOFF FROM SUB-BASIN 102
 89              BA   0.310
 90              LG    0.18    0.27    4.80    0.36      43
```

```
 91          UC   0.675   0.463
 92          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 93          UA     100
             *

 94          KK    D102
 95          KM  DIVERT RETENTION VOLUME FOR HAWTHORNE ELEMENTARY SCHOOL.
 96          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR THE PLAY FIELD
 97          KM  TOTAL VOLUME = 6 ACRE-FT
 98          DT  RET102       6
 99          DI       0   10000
100          DQ       0   10000
             *

101          KK   IFD36
102          KM  INFLOW IFD36 - REFERENCE STATION D36OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
103          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
104          BA       0
105          ZR     =QI A=TEMPE  B=D36OUT  C=FLOW  F=CC6HR
             *

106          KK   RSD36
107          KM  CONSOLIDATED CANAL & UNIVERSITY DR: ROUTE STREET FLOW IFD36 TO
108          KM  CP102 VIA UNIVERSITY DR
109          KM  4-LANE ARTERIAL
110          RS       6    FLOW      -1
111          RC   0.018   0.018   0.018    2630  0.0023
112          RX       0       0      31      31      99      99     130     130
113          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *
1                                          HEC-1 INPUT                                          PAGE  4

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

114          KK   CP102
115          KM  UNIVERSITY DR & STAPLEY DR: COMBINE RS101,SB102,D36OUT
116          HC       3
             *

117          KK    S102
118          KM  UNIVERSITY DR & STAPLEY DR: STREET FLOW S102 VS. PIPE FLOW P102
119          KM  36" RCP PIPE - CAPACITY = 26CFS
120          DT    P102
121          DI       0     100   10000
122          DQ       0      18      18
             *

123          KK   S102W
124          KM  UNIVERSITY DR & STAPLEY DR: STREET FLOW WEST S102W VS. STREET FLOW SOUTH S102S
125          KM  SURVEYED INTERSECTION
126          DT   S102S
127          DI       0      48     120     255     612     889    1192    1531    1907    2315
128          DQ       0      48     116     241     508     670     850    1045    1257    1483
             *

129          KK  RS102W
130          KM  UNIVERSITY DR & STAPLEY DR: ROUTE STREET FLOW CP102 TO CP104 VIA UNIVERSITY
131          KM  4-LANE ARTERIAL
132          RS      15    FLOW      -1
133          RC   0.018   0.018   0.018    2650  0.0004
134          RX       0       0      31      31      99      99     130     130
135          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

136          KK   SB103
137          KM  RUNOFF FROM SUB-BASIN 103
138          BA   0.230
139          LG    0.24    0.25    4.80    0.35      34
140          UC   0.621   0.417
141          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
142          UA     100
             *

143          KK   IFD21
144          KM  INFLOW IFD21 - REFERENCE STATION D21OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
145          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
146          BA       0
147          ZR     =QI A=TEMPE  B=D21OUT  C=FLOW  F=CC6HR
             *

148          KK   RSD21
149          KM  CONSOLIDATED CANAL & HORNE: ROUTE STREET FLOW IFD21 TO CP103 VIA HORNE
150          KM  60-FT RIGHT-OF-WAY COLLECTOR
151          RS       4    FLOW      -1
```

```
152          RC   0.018   0.018   0.018    2640  0.0023
153          RX       0       0      13      13      47      47      60      60
154          RY       4    0.33    0.33       0       0    0.33    0.33       4
             *
1                                    HEC-1 INPUT                                                    PAGE  5

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

155          KK   CP103
156          KM  8TH ST & HORNE: COMBINE RSD21,SB103
157          HC       2
             *

158          KK    S103
159          KM  8TH ST & HORNE: STREET FLOW S103 VS. PIPE FLOW P103
160          KM  36" RCP PIPE - CAPACITY = 25CFS
161          DT    P103
162          DI       0      25   10000
163          DQ       0      25      25
             *

164          KK   RS103
165          KM  8TH ST & HORNE: ROUTE STREET FLOW S103 TO CP104 VIA HORNE
166          KM  60-FT RIGHT-OF-WAY COLLECTOR
167          RS       3    FLOW      -1
168          RC   0.018   0.018   0.018    2640  0.0023
169          RX       0       0      13      13      47      47      60      60
170          RY       4    0.33    0.33       0       0    0.33    0.33       4
             *

171          KK   SB104
172          KM  RUNOFF FROM SUB-BASIN 104
173          BA   0.250
174          LG    0.24    0.25    4.80    0.36      37
175          UC   0.821    0.66
176          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
177          UA     100
             *

178          KK    P103
179          KM  RETURN DIVERTED PIPE FLOW FROM CP103
180          DR    P103
             *

181          KK   RP103
182          KM  ROUTE PIPE FLOW CP103 TO CP104 VIA HORNE
183          KM  33" RCP PIPE - CAPACITY = 25CFS
184          RK    2640  0.0023   0.013            CIRC    2.75                        6
             *

185          KK   CP104
186          KM  UNIVERSITY DR & HORNE: COMBINE RS103,RP103,SB104,RS102W
187          HC       4
             *

188          KK    S104
189          KM  UNIVERSITY DR & HORNE: STREET FLOW S104 VS. PIPE FLOW P104
190          KM  48" RCP PIPE - CAPACITY = 56CFS
191          DT    P104
192          DI       0      56   10000
193          DQ       0      56      56
             *
1                                    HEC-1 INPUT                                                    PAGE  6

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

194          KK   S104W
195          KM  UNIVERSITY DR & HORNE: STREET FLOW WEST S104W VS. STREET FLOW SOUTH S104S
196          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
197          KM  UNIVERSITY DR IS 4-LANE ARTERIAL, HORNE IS A 60-FT RIGHT-OF-WAY COLLECTOR
198          DT   S104S
199          DI       0      24     230     673    1283    2033    2911
200          DQ       0      16     152     444     846    1341    1920
             *

201          KK  RS104W
202          KM  UNIVERSITY DR & HORNE: ROUTE STREET FLOW S104W TO CP106 VIA UNIVERSITY DR
203          KM  4-LANE ARTERIAL
204          RS       9    FLOW      -1
205          RC   0.018   0.018   0.018    2650  0.0015
206          RX       0       0      31      31      99      99     130     130
207          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *
```

```
208          KK   SB105
209          KM  RUNOFF FROM SUB-BASIN 105
210          BA   0.230
211          LG    0.22    0.26    4.80    0.35      41
212          UC   0.671   0.505
213          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
214          UA     100
             *

215          KK    D105
216          KM  DIVERT RETENTION VOLUME FOR KINO JUNIOR HIGH SCHOOL
217          KM  APPROXIMATELY 1 FT OF RETENTION DEPTH FOR BASEBALL AND TRACK FIELDS
218          KM  TOTAL VOLUME = 18 ACRE-FT
219          DT  RET105      18
220          DI       0    5000
221          DQ       0    5000
             *

222          KK   RS105
223          KM  8TH ST & MESA DRIVE: ROUTE STREET FLOW D105 TO CP106 VIA MESA DR
224          KM  4-LANE ARTERIAL
225          RS       6    FLOW      -1
226          RC   0.018   0.018   0.018    2750  0.0022
227          RX       0       0      31      31      99      99     130     130
228          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

229          KK   SB106
230          KM  RUNOFF FROM SUB-BASIN 106
231          BA   0.230
232          LG    0.23    0.25    4.80    0.36      42
233          UC   0.838   0.663
234          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
235          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE   7

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

236          KK   CP106
237          KM  UNIVERSITY DR & MESA DR: COMBINE RS105,SB106,RS104W
238          HC       3
             *

239          KK    S106
240          KM  UNIVERSITY DR & MESA DR: STREET FLOW S106 VS. PIPE FLOW P106
241          KM  24" RCP PIPE - CAPACITY = 6CFS
242          DT    P106
243          DI       0       6   10000
244          DQ       0       6       6
             *

245          KK   S106W
246          KM  UNIVERSITY DR & MESA DR: STREET FLOW WEST S106W VS. STREET FLOW SOUTH S106S
247          KM  SURVEYED INTERSECTION
248          DT   S106S
249          DI       0      94     402     870    1470    2186
250          DQ       0      66     229     456     738    1067
             *

251          KK  RS106W
252          KM  UNIVERSITY DR & MESA DR: ROUTE STREET FLOW S106W TO CP108 VIA UNIVERSITY DR
253          KM  4-LANE ARTERIAL
254          RS       5    FLOW      -1
255          RC   0.018   0.018   0.018    2650  0.0015
256          RX       0       0      31      31      99      99     130     130
257          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

258          KK   SB107
259          KM  RUNOFF FROM SUB-BASIN 107
260          BA   0.240
261          LG    0.21    0.27    4.80    0.34      43
262          UC   0.675   0.487
263          UA       0       5    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
264          UA     100
             *

265          KK   SB109
266          KM  RUNOFF FROM SUB-BASIN 109
267          BA   0.080
268          LG    0.24    0.26    4.80    0.35      39
269          UC   0.471   0.413
```

```
 270          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 271          UA     100
              *

 272          KK   CP107
 273          KM  8TH ST & CENTER ST: COMBINE SB107,SB109
 274          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 275          KK   RS107
 276          KM  8TH ST & CENTER ST: ROUTE STREET FLOW CP107 TO CP108 VIA CENTER ST
 277          KM  80-FT RIGHT-OF-WAY COLLECTOR
 278          RS       3    FLOW      -1
 279          RC   0.018   0.018   0.018    2650  0.0015
 280          RX       0       0      17      17      63      63      80      80
 281          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

 282          KK   SB108
 283          KM  RUNOFF FROM SUB-BASIN 108
 284          BA   0.250
 285          LG    0.18    0.25    4.80    0.42      49
 286          UC    1.35   1.046
 287          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 288          UA     100
              *

 289          KK    D108
 290          KM  DIVERT RETENTION VOLUME FOR FITCH PARK
 291          KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR OPEN SPACE AND PLAY FIELDS
 292          KM  TOTAL VOLUME = 25 ACRE-FT
 293          DT  RET108      25
 294          DI       0    5000
 295          DQ       0    5000
              *

 296          KK   SB110
 297          KM  RUNOFF FROM SUB-BASIN 110
 298          BA   0.080
 299          LG    0.23    0.25    4.80    0.36      41
 300          UC   0.633   0.641
 301          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 302          UA     100
              *

 303          KK   CP108
 304          KM  UNIVERSITY DR & CENTER ST: COMBINE SB110,RS107,D108,RS106W
 305          HC       4
              *

 306          KK   RS108
 307          KM  UNIVERSITY DR & CENTER ST: ROUTE STREET FLOW CP108 TO CP116 VIA CENTER ST
 308          KM  4-LANE ARTERIAL
 309          RS       4    FLOW      -1
 310          RC   0.018   0.018   0.018    2650  0.0019
 311          RX       0       0      31      31      99      99     130     130
 312          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                          HEC-1 INPUT                                          PAGE  9

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

 313          KK   SB111
 314          KM  RUNOFF FROM SUB-BASIN 111
 315          BA   0.030
 316          LG    0.25    0.15    8.00    0.10      45
 317          UC   0.346   0.286
 318          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 319          UA     100
              *

 320          KK    IF34
 321          KM  INFLOW IF34 - REFERENCE STATION 34-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
 322          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
 323          BA       0
 324          ZR     =QI A=TEMPE  B=34-OUT  C=FLOW  F=CC6HR
              *

 325          KK    RS34
 326          KM  CONSOLIDATED CANAL & GILBERT RD: ROUTE STREET FLOW IF34 TO
```

```
327          KM  CP111 VIA GILBERT RD
328          KM  6-LANE ARTERIAL
329          RS      2    FLOW      -1
330          RC  0.018   0.018   0.018    1420  0.0015
331          RX      0       0      21      21     109     109     130     130
332          RY      4   0.014   0.014       0       0    0.14    0.14       4
             *

333          KK   IF44B
334          KM  INFLOW IF44B - REFERENCE STATION 44BOUT FROM "CONSOLIDATED CANAL FLOOPLAIN
335          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
336          BA      0
337          ZR    =QI A=TEMPE  B=44BOUT  C=FLOW  F=CC6HR
             *

338          KK   RS44B
339          KM  CONSOLIDATED CANAL & MAIN ST: ROUTE STREET FLOW IF44B TO
340          KM  CP111 VIA MAIN ST
341          KM  6-LANE ARTERIAL
342          RS      2    FLOW      -1
343          RC  0.018   0.018   0.018    1195  0.0015
344          RX      0       0      21      21     109     109     130     130
345          RY      4   0.014   0.014       0       0    0.14    0.14       4
             *

346          KK  IPMAIN
347          KM  INLFOW FROM 48" PIPE ALONG MAIN ST ENTERING THE STUDY AREA AT MAIN ST AND THE
348          KM  CONSOLIDATED CANAL. PIPE FLOW IS MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE
349          KM  PIPE CAPACITY.
350          KM  48" RCP PIPE - CAPACITY = 64CFS
351          BA      0
352          IN     15
353          QI     64      64      64      64      64      64      64      64      64      64
354          QI     64      64      64      64      64      64      64      64      64      64
355          QI     64      64      64      64      64
             *
1                                          HEC-1 INPUT                                          PAGE 10

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

356          KK   CP111
357          KM  MAIN ST & GILBERT RD: COMBINE 34-OUT,RS44B,IPMAIN,SB111
358          HC      4
             *

359          KK    S111
360          KM  MAIN ST & GILBERT RD: STREET FLOW S111 VS. PIPE FLOW P111
361          KM  48" RCP PIPE - CAPACITY = 64CFS
362          DT    P111
363          DI      0     100   10000
364          DQ      0      64      64
             *

365          KK   S111W
366          KM  MAIN ST & GILBERT RD: STREET FLOW WEST S111W VS. STREET FLOW SOUTH S111S
367          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
368          KM  MAIN ST IS A 4-LANE ARTERIAL, GILBERT RD IS A 6-LANE ARTERIAL
369          DT   S111S
370          DI      0      37     341    1017    1952    3107    4458
371          DQ      0      16     138     422     818    1308    1882
             *

372          KK  RS111W
373          KM  MAIN ST & GILBERT RD: ROUTE STREET FLOW S111W TO CP112 VIA MAIN ST
374          KM  4-LANE ARTERIAL
375          RS      4    FLOW      -1
376          RC  0.018   0.018   0.018    2650  0.0019
377          RX      0       0      31      31      99      99     130     130
378          RY      4    0.18    0.18       0       0    0.18    0.18       4
             *

379          KK   SB112
380          KM  RUNOFF FROM SUB-BASIN 112
381          BA   0.220
382          LG    0.21    0.25    4.90    0.35      44
383          UC    0.65   0.441
384          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
385          UA     100
             *

386          KK    P111
387          KM  RETURN DIVERTED PIPE FLOW FROM CP111
388          KM  FOR ROUTING WEST TO CP112
389          DR    P111
```

```
                 *
390              KK   RP111
391              KM  ROUTE PIPE FLOW P111 TO CP113 VIA STAPLEY DR
392              KM  36" RCP PIPE - CAPACITY = 26CFS
393              RK    2614    .002   0.013            CIRC       6                        6
                 *
1                                                HEC-1 INPUT                                                    PAGE 11

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


394              KK   CP112
395              KM  MAIN ST & HARRIS DR: COMBINE SB112,RP111,RS111W
396              HC       3
                 *

397              KK    S112
398              KM  MAIN ST & HARRIS DR: STREET FLOW S112 VS. PIPE FLOW P112
399              KM  60" RCP PIPE - CAPACITY = 83CFS
400              DT    P112
401              DI       0      83   10000
402              DQ       0      83      83
                 *

403              KK   RS112
404              KM  MAIN ST & HARRIS DR: ROUTE STREET FLOW S112 TO CP113 VIA MAIN ST
405              KM  4-LANE ARTERIAL
406              RS       4    FLOW      -1
407              RC   0.018   0.018   0.018    2610  0.0019
408              RX       0       0      31      31      99      99     130     130
409              RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

410              KK   S102S
411              KM  RETURN DIVERTED STREET FLOW FROM CP102
412              KM  FOR ROUTING SOUTH TO CP113
413              DR   S102S
                 *

414              KK  RS102S
415              KM  ROUTE STREET FLOW S102S TO CP113 ALONG STAPLEY DR
416              KM  4-LANE ARTERIAL
417              RS       3    FLOW      -1
418              RC   0.018   0.018   0.018    2610  0.0019
419              RX       0       0      31      31      99      99     130     130
420              RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

421              KK    P102
422              KM  RETURN DIVERTED PIPE FLOW FROM CP102
423              KM  FOR ROUTING SOUTH TO CP113
424              DR    P102
                 *

425              KK   RP102
426              KM  ROUTE PIPE FLOW P102 TO CP113 VIA STAPLEY DR
427              KM  36" RCP PIPE - CAPACITY = 26CFS
428              RK    2630  0.0015   0.013            CIRC       3                        6
                 *
1                                                HEC-1 INPUT                                                    PAGE 12

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


429              KK   SB113
430              KM  RUNOFF FROM SUB-BASIN 113
431              BA   0.250
432              LG    0.21    0.25    4.80    0.37      43
433              UC   0.758     0.6
434              UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
435              UA     100
                 *

436              KK    P112
437              KM  RETURN DIVERTED PIPE FLOW FROM CP112
438              KM  FOR ROUTING WEST TO CP113
439              DR    P112
                 *

440              KK   RP112
441              KM  ROUTE PIPE FLOW P112 TO CP113 VIA MAIN ST
442              KM  60" RCP PIPE - CAPACITY = 83CFS
443              RK    2600   0.001   0.013            CIRC       5                        6
                 *
```

```
 444          KK   CP113
 445          KM  MAIN ST. & STAPLEY DR: COMBINE RS102S,RP102,SB113,RP112,RS112
 446          HC       5
              *

 447          KK    S113
 448          KM  MAIN ST. & STAPLEY DR: STREET FLOW S113 VS. PIPE FLOW P113
 449          KM  60" RCP PIPE - CAPACITY = 83CFS
 450          DT    P113
 451          DI       0      83   10000
 452          DQ       0      83      83
              *

 453          KK   S113W
 454          KM  MAIN ST & STAPLEY DR: STREET FLOW WEST S113W VS. STREET FLOW SOUTH S113S
 455          KM  SURVEYED INTERSECTION
 456          DT   S113S
 457          DI       0       5      26      67     165     353     548     864    1158    1532
 458          DI    1948    4579
 459          DQ       0       2      10      27      57     143     201     355     491     645
 460          DQ     816    1894
              *

 461          KK  RS113W
 462          KM  MAIN ST & STAPLEY DR: ROUTE STREET FLOW S113W TO CP114 VIA MAIN ST
 463          KM  4-LANE ARTERIAL
 464          RS       6    FLOW      -1
 465          RC   0.018   0.018   0.018    2630  0.0015
 466          RX       0       0      31      31      99      99     130     130
 467          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
```

1 HEC-1 INPUT PAGE 13

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

 468          KK   S104S
 469          KM  RETURN DIVERTED STREET FLOW FROM CP104
 470          KM  FOR ROUTING SOUTH TO CP114
 471          DR   S104S
              *

 472          KK  RS104S
 473          KM  ROUTE STREET FLOW S104S TO CP114 VIA HORNE
 474          KM  60-FT RIGHT-OF-WAY COLLECTOR
 475          RS       4    FLOW      -1
 476          RC   0.018   0.018   0.018    2680  0.0001
 477          RX       0       0      13      13      47      47      60      60
 478          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

 479          KK   SB114
 480          KM  RUNOFF FROM SUB-BASIN 114
 481          BA   0.250
 482          LG    0.22    0.25    4.80    0.37      41
 483          UC   0.963    0.75
 484          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 485          UA     100
              *

 486          KK    P113
 487          KM  RETURN DIVERTED PIPE FLOW FROM CP113
 488          KM  FOR ROUTING WEST TO CP114
 489          DR    P113
              *

 490          KK   RP113
 491          KM  ROUTE PIPE FLOW CP113 TO CP114 VIA MAIN ST
 492          KM  60" RCP PIPE - CAPACITY = 83CFS
 493          RK    2680   0.001   0.013            CIRC      5                       6
              *

 494          KK    P104
 495          KM  RETURN DIVERTED PIPE FLOW FROM CP104
 496          KM  FOR ROUTING SOUTH TO CP114
 497          DR    P104
              *

 498          KK   RP104
 499          KM  ROUTE PIPE FLOW P104 TO CP114 VIA HORNE
 500          KM  48" RCP PIPE - CAPACITY = 56CFS
 501          RK    2630  0.0015   0.013            CIRC      4                       6
              *
```

```
502          KK   CP114
503          KM  MAIN ST & HORNE: COMBINE RS104S,RP104,SB114,RP113,RS113W
504          HC       5
             *
1                                        HEC-1 INPUT                                                    PAGE 14

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


505          KK    S114
506          KM  MAIN ST & HORNE: STREET FLOW S114 VS. PIPE FLOW P114
507          KM  78" RCP PIPE -  CAPACITY = 166CFS
508          DT    P114
509          DI       0     166   10000
510          DQ       0     166     166
             *

511          KK   S114W
512          KM  MAIN ST & HORNE: STREET FLOW WEST S114W VS. STREET FLOW SOUTH S114S
513          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
514          KM  MAIN ST IS A 4-LANE ARTERIAL, HORNE IS A 60-FT RIGHT-OF-WAY COLLECTOR
515          DT   S114S
516          DI       0      23     145     383     700    1086    1532
517          DQ       0      19     106     268     482     740    1036
             *

518          KK  RS114W
519          KM  MAIN ST & HORNE: ROUTE STREET FLOW S114W TO CP115 VIA MAIN ST
520          KM  4-LANE ARTERIAL
521          RS       9    FLOW      -1
522          RC   0.018   0.018   0.018    2640  0.0011
523          RX       0       0      31      31      99      99     130     130
524          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

525          KK   S106S
526          KM  RETURN DIVERTED STREET FLOW FROM CP106
527          KM  FOR ROUTING SOUTH TO CP115
528          DR   S106S
             *

529          KK  RS106S
530          KM  ROUTE STREET FLOW S106S TO CP115 VIA MESA DR
531          KM  4-LANE ARTERIAL
532          RS       4    FLOW      -1
533          RC   0.018   0.018   0.018    2640  0.0011
534          RX       0       0      31      31      99      99     130     130
535          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

536          KK    P106
537          KM  RETURN DIVERTED PIPE FLOW FROM CP106
538          KM  FOR ROUTING SOUTH TO CP115
539          DR    P106
             *

540          KK   RP106
541          KM  ROUTE PIPE FLOW CP106 TO CP115 VIA MESA DR
542          KM  24" RCP PIPE - CAPACITY = 6CFS
543          RK    2640  0.0007   0.013            CIRC       2                       6
             *
1                                        HEC-1 INPUT                                                    PAGE 15

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


544          KK   SB115
545          KM  RUNOFF FROM SUB-BASIN 115
546          BA   0.260
547          LG    0.20    0.25    4.80    0.38      42
548          UC   1.033   0.753
549          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
550          UA     100
             *

551          KK    D115
552          KM  DIVERT RETENTION VOLUME FOR PIONEER PARK
553          KM  APPROXIMATELY 1 FT OF DEPTH FOR RETENTION
554          KM  TOTAL VOLUME = 11 ACRE-FT
555          DT  RET115      11
556          DI       0   10000
557          DQ       0   10000
             *

558          KK    P114
```

```
559          KM  RETURN DIVERTED PIPE FLOW FROM CP114
560          KM  FOR ROUTING WEST TO CP115
561          DR    P114
             *

562          KK   RP114
563          KM  ROUTE PIPE FLOW CP114 TO CP115 VIA MAIN ST
564          KM  78" RCP PIPE - CAPACITY = 166CFS
565          RK    2690   0.001   0.013            CIRC     6.5                        6
             *

566          KK   CP115
567          KM  MAIN ST & MESA DR: COMBINE RS106S,RP106,D115,RP114,RS114W
568          HC       5
             *

569          KK    S115
570          KM  MAIN ST & MESA DR: STREET FLOW S115 VS. PIPE FLOW P115
571          KM  78" RCP PIPE - CAPACITY = 166CFS
572          DT    P115
573          DI       0     166   10000
574          DQ       0     166     166
             *

575          KK   S115W
576          KM  MAIN ST & MESA DR: STREET FLOW WEST S115W VS. STREET FLOW SOUTH S115S
577          KM  SURVEYED INTERSECTION
578          DT   S115S
579          DI       0      18     172     494    1076    1663    2524    3555
580          DQ       0      18     172     490    1029    1471    2109    2836
             *
1                                          HEC-1 INPUT                                          PAGE 16

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

581          KK  RS115W
582          KM  MAIN ST & MESA DR: ROUTE STREET FLOW S115W TO CP116 VIA MAIN ST
583          KM  4-LANE ARTERIAL
584          RS      18    FLOW      -1
585          RC   0.018   0.018   0.018    2590  0.0004
586          RX       0       0      31      31      99      99     130     130
587          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *
             *

588          KK   SB116
589          KM  RUNOFF FROM SUB-BASIN 116
590          BA   0.240
591          LG    0.15    0.23    4.80    0.39      48
592          UC   1.204   0.985
593          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
594          UA     100
             *

595          KK   SB117
596          KM  RUNOFF FROM SUB-BASIN 117
597          BA   0.080
598          LG    0.18    0.25    4.80    0.38      59
599          UC     0.6   0.596
600          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
601          UA     100
             *

602          KK    P115
603          KM  RETURN DIVERTED PIPE FLOW FROM CP115
604          KM  FOR ROUTING WEST TO CP116
605          DR    P115
             *

606          KK   RP115
607          KM  ROUTE PIPE FLOW CP115 TO CP116 VIA MAIN ST
608          KM  78" RCP PIPE - CAPACITY = 166CFS
609          RK    2590   0.001   0.013            CIRC     6.5                        6
             *

610          KK   CP116
611          KM  MAIN ST & CENTER ST: COMBINE SB117,RS108,SB116,RP115,RS115W
612          HC       5
             *

613          KK    S116
614          KM  MAIN ST & CENTER ST: STREET FLOW S116 VS. PIPE FLOW P116
615          KM  84" RCP PIPE - CAPACITY = 203CFS. 84" PIPE CONTINUES WEST IN MAIN ST, NORTH
616          KM  IN ALMA SCHOOL RD AND OUTLETS TO THE TEMPE WASTEWAY. THE PIPE REACHES CAPACITY
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```
617          KM  WITHIN THE 100 WATERSHED AND, THEREFORE, WAS NOT MODELED IN THE 200 WATERSHED.
618          DT    P116
619          DI       0     203   10000
620          DQ       0     203     203
             *
1                                        HEC-1 INPUT                                          PAGE 17

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


621          KK   RS116
622          KM  ROUTE STREET FLOW S116 TO CP124 VIA CENTER ST
623          KM  4-LANE ARTERIAL
624          RS       3    FLOW      -1
625          RC   0.018   0.018   0.018    2620  0.0011
626          RX       0       0      31      31      99      99     130     130
627          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

628          KK   SB118
629          KM  RUNOFF FROM SUB-BASIN 118
630          BA   0.220
631          LG    0.24    0.15    8.00    0.10      35
632          UC   0.667   0.458
633          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
634          UA     100
             *

635          KK   IP119
636          KM  BROADWAY RD & GILBERT RD: PIPE FLOW ROUTED EAST FROM CP119
637          KM  TO CP118 CREATES A LOOP. THEREFORE, PIPE FLOW IS MODELED AS AN INFLOW
638          KM  HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
639          KM  36" RCP PIPE - CAPACITY = 21CFS
640          BA       0
641          IN      15
642          QI      21      21      21      21      21      21      21      21      21      21
643          QI      21      21      21      21      21      21      21      21      21      21
644          QI      21      21      21      21      21
             *

645          KK   S111S
646          KM  RETURN DIVERTED STREET FLOW FROM CP111
647          DR   S111S
             *

648          KK  RS111S
649          KM  ROUTE STREET FLOW S111S TO CP118 VIA GILBERT RD
650          KM  6-LANE ARTERIAL
651          RS       5    FLOW      -1
652          RC   0.018   0.018   0.018    2630  0.0015
653          RX       0       0      21      21     109     109     130     130
654          RY       4   0.014   0.014       0       0    0.14    0.14       4
             *

655          KK   IFD48
656          KM  INFLOW IFD48 - REFERENCE STATION D48OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
657          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
658          BA       0
659          ZR     =QI A=TEMPE  B=D48OUT  C=FLOW  F=CC6HR
             *
1                                        HEC-1 INPUT                                          PAGE 18

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


660          KK   RSD48
661          KM  CONSOLIDATED CANAL & BROADWAY RD: ROUTE STREET FLOW IFD48 TO
662          KM  CP118 VIA BROADWAY RD
663          KM  4-LANE ARTERIAL
664          RS       7    FLOW      -1
665          RC   0.018   0.018   0.018    3631  0.0026
666          RX       0       0      31      31      99      99     130     130
667          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

668          KK   CP118
669          KM  BROADWAY RD & GILBERT RD: COMBINE IP119,RS11S,SB118,RSD48
670          HC       4
             *

671          KK    S118
672          KM  BROADWAY RD & GILBERT RD: STREET FLOW S118 VS. PIPE FLOW P118
673          KM  48" RCP PIPE - CAPCITY = 64CFS
674          DT    P118
675          DI       0      64   10000
```

```
676          DQ       0      64      64
             *

677          KK   S118W
678          KM  BROADWAY RD & GILBERT RD: STREET FLOW WEST S118W VS. STREET FLOW SOUTH S118S
679          KM  SURVEYED INTERSECTION
680          DT   S118S
681          DI       0       1      10      35      93     200     364     638     940    1285
682          DI    1684    4277
683          DQ       0       0       2      12      35      68     130     262     396     549
684          DQ     734    1956
             *

685          KK  RS118W
686          KM  BROADWAY RD & GILBERT RD: ROUTE STREET FLOW S118W TO CP119 VIA BROADWAY RD
687          KM  4-LANE ARTERIAL
688          RS       2    FLOW      -1
689          RC   0.018   0.018   0.018    2650  0.0026
690          RX       0       0      31      31      99      99     130     130
691          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

692          KK   SB119
693          KM  RUNOFF FROM SUB-BASIN 119
694          BA   0.180
695          LG     0.2    0.25    4.80    0.37      49
696          UC   0.592   0.459
697          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
698          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 19

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

699          KK   CP119
700          KM  BROADWAY RD & WILLIAMS: COMBINE SB119,RS118W
701          HC       2
             *

702          KK    S119
703          KM  BROADWAY RD & WILLIAMS: STREET FLOW S119 VS. PIPE FLOW P119
704          KM  36" RCP PIPE - CAPCITY = 21CFS
705          DT    P119
706          DI       0      21   10000
707          DQ       0      21      21
             *

708          KK   RS119
709          KM  BROADWAY RD & WILLIAMS: ROUTE STREET FLOW S119 TO CP120 VIA BROADWAY RD
710          KM  4-LANE ARTERIAL
711          RS       2    FLOW      -1
712          RC   0.018   0.018   0.018    1240  0.0008
713          RX       0       0      31      31      99      99     130     130
714          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

715          KK   SB120
716          KM  RUNOFF FROM SUB-BASIN 120
717          BA   0.150
718          LG    0.24    0.25    4.80    0.35      32
719          UC   0.471   0.323
720          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
721          UA     100
             *

722          KK   CP120
723          KM  BROADWAY RD & BARKLEY: COMBINE SB120,RS119
724          HC       2
             *

725          KK   RS120
726          KM  BROADWAY RD & BARKLEY: ROUTE STREET FLOW S120 TO CP121 VIA BROADWAY RD
727          KM  4-LANE ARTERIAL
728          RS       2    FLOW      -1
729          RC   0.018   0.018   0.018    1700  0.0024
730          RX       0       0      31      31      99      99     130     130
731          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

732          KK   IP122
733          KM  BROADWAY RD & STAPLEY DR: PIPE FLOW ROUTED EAST FROM CP122
734          KM  TO CP121 CREATES A LOOP. THEREFORE, PIPE FLOW IS MODELED AS AN INFLOW
735          KM  HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
736          KM  27" RCP PIPE - CAPACITY = 14CFS
```

```
 737          BA       0
 738          IN      15
 739          QI      14      14      14      14      14      14      14      14      14      14
 740          QI      14      14      14      14      14      14      14      14      14      14
1                                          HEC-1 INPUT                                          PAGE 20

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

 741          QI      14      14      14      14      14
              *

 742          KK   S113S
 743          KM  RETURN DIVERTED STREET FLOW FROM CP113
 744          KM  FOR ROUTING SOUTH TO CP121
 745          DR   S113S
              *

 746          KK  RS113S
 747          KM  ROUTE STREET FLOW S113S TO CP121 VIA STAPLEY DR
 748          KM  4-LANE ARTERIAL
 749          RS       4    FLOW      -1
 750          RC   0.018   0.018   0.018    2630  0.0015
 751          RX       0       0      31      31      99      99     130     130
 752          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

 753          KK   SB121
 754          KM  RUNOFF FROM SUB-BASIN 121
 755          BA   0.160
 756          LG    0.20    0.25    4.80    0.38      52
 757          UC   0.658   0.491
 758          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 759          UA     100
              *

 760          KK   CP121
 761          KM  BROADWAY RD & STAPLEY DR: COMBINE IP122,RS113S,SB121,RS120
 762          HC       4
              *

 763          KK    S121
 764          KM  BROADWAY RD & STAPLEY DR: STREET FLOW S121 VS. PIPE FLOW P121
 765          KM  42" RCP PIPE - CAPACITY = 45CFS
 766          DT    P121
 767          DI       0      45   10000
 768          DQ       0      45      45
              *

 769          KK   S121W
 770          KM  BROADWAY RD & STAPLEY DR: STREET FLOW WEST S121W VS. STREET FLOW SOUTH S121S
 771          KM  SURVEYED INTERSECTION
 772          DT   S121S
 773          DI       0      36     152     360     637     974    1570    2039    2842
 774          DQ       0      31     114     238     396     584     800    1043    1603
              *

 775          KK  RS121W
 776          KM  BROADWAY RD & STAPLEY DR: ROUTE STREET FLOW S121W TO CP122 VIA BROADWAY RD
 777          KM  4-LANE ARTERIAL
 778          RS       5    FLOW      -1
 779          RC   0.018   0.018   0.018    2670  0.0004
 780          RX       0       0      31      31      99      99     130     130
 781          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                          HEC-1 INPUT                                          PAGE 21

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

 782          KK   S114S
 783          KM  RETURN DIVERTED STREET FLOW FROM CP114
 784          KM  FOR ROUTING SOUTH TO CP122
 785          DR   S114S
              *

 786          KK  RS114S
 787          KM  ROUTE STREET FLOW S114S TO CP122 VIA HORNE
 788          KM  60-FT RIGHT-OF-WAY COLLECTOR
 789          RS       2    FLOW      -1
 790          RC   0.018   0.018   0.018    2660  0.0019
 791          RX       0       0      13      13      47      47      60      60
 792          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

 793          KK   SB122
```

```
794          KM  RUNOFF FROM SUB-BASIN 122
795          BA   0.260
796          LG    0.21    0.25    4.80    0.37      37
797          UC   0.908   0.629
798          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
799          UA     100
             *

800          KK    D122
801          KM  DIVERT RETENTION VOLUME FOR MESA JUNIOR HIGH SCHOOL AND ELLSWORTH PARK
802          KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR OPEN SPACE AND PLAY FIELDS
803          KM  TOTAL VOLUME = 27 ACRE-FT
804          DT  RET122      27
805          DI       0   10000
806          DQ       0   10000
             *

807          KK   CP122
808          KM  BROADWAY RD & HORNE: COMBINE RS114S,D122,RS121W
809          HC       3
             *

810          KK    S122
811          KM  BROADWAY RD & HORNE: STREET FLOW S122 VS. PIPE FLOW P122
812          KM  27" RCP PIPE - CAPACITY = 14CFS
813          DT    P122
814          DI       0      14   10000
815          DQ       0      14      14
             *

816          KK   S122W
817          KM  BROADWAY RD & HORNE: STREET FLOW WEST S122W VS. STREET FLOW SOUTH S122W
818          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
819          KM  BROADWAY RD IS A 4-LANE ARTERIAL, HORNE IS A 60-FT RIGHT-OF-WAY COLLECTOR
820          DT   S122S
821          DI       0      25     172     467     865    1350    1912
822          DQ       0      17      94     238     428     658     921
             *
1                                          HEC-1 INPUT                                          PAGE 22

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

823          KK  RS122W
824          KM  BROADWAY RD & HORNE: ROUTE STREET FLOW CP122 TO CP123 VIA BROADWAY RD
825          KM  4-LANE ARTERIAL
826          RS       5    FLOW      -1
827          RC   0.018   0.018   0.018    2690  0.0004
828          RX       0       0      31      31      99      99     130     130
829          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

830          KK   S115S
831          KM  RETURN DIVERTED STREET FLOW FROM CP115
832          KM  FOR ROUTING SOUTH TO CP123
833          DR   S115S
             *

834          KK  RS115S
835          KM  ROUTE STREET FLOW S115S TO CP123 VIA MESA DR
836          KM  4-LANE ARTERIAL
837          RS       3    FLOW      -1
838          RC   0.018   0.018   0.018    2650  0.0015
839          RX       0       0      31      31      99      99     130     130
840          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

841          KK   SB123
842          KM  RUNOFF FROM SUB-BASIN 123
843          BA   0.260
844          LG    0.21    0.22    4.80    0.38      44
845          UC   1.033    0.76
846          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
847          UA     100
             *

848          KK   CP123
849          KM  BROADWAY RD & MESA DR: COMBINE RS115S,SB123,RS122W
850          HC       3
             *

851          KK    S123
852          KM  BROADWAY RD & MESA DR: STREET FLOW S123 VS. PIPE FLOW P123
853          KM  36" RCP PIPE - CAPACITY = 33CFS
854          DT    P123
```

```
855          DI       0      33   10000
856          DQ       0      33      33
             *

857          KK   S123W
858          KM  BROADWAY RD & MESA DR: STREET FLOW WEST S123W VS. STREET FLOW SOUTH S123S
859          KM  SURVEYED INTERSECTION
860          DT   S123S
861          DI       0      69     333     779    1365    2076    2901    3824
862          DQ       0      56     223     489     832    1245    1721    2280
             *
1                                          HEC-1 INPUT                                          PAGE 23

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

863          KK  RS123W
864          KM  BROADWAY RD & MESA DR: ROUTE STREET FLOW S123W TO CP124 VIA BROADWAY RD
865          KM  4-LANE ARTERIAL
866          RS       3    FLOW      -1
867          RC   0.018   0.018   0.018    2600  0.0008
868          RX       0       0      31      31      99      99     130     130
869          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

870          KK   SB124
871          KM  RUNOFF FROM SUB-BASIN 124
872          BA   0.250
873          LG    0.15    0.25    4.80    0.40      63
874          UC   1.392   1.158
875          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
876          UA     100
             *

877          KK   SB125
878          KM  RUNOFF FROM SUB-BASIN 125
879          BA   0.130
880          LG    0.10    0.26    4.80    0.41      74
881          UC   0.854   0.789
882          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
883          UA     100
             *

884          KK   CP124
885          KM  BROADWAY RD & CENTER ST: COMBINE SB125,RS116,SB124,RS123W
886          HC       4
             *

887          KK   RS124
888          KM  ROUTE STREET FLOW CP124 TO CP132 VIA CENTER STREET
889          KM  80-FT RIGHT-OF-WAY COLLECTOR
890          RS       2    FLOW      -1
891          RC   0.018   0.018   0.018    2650  0.0026
892          RX       0       0      17      17      63      63      80      80
893          RY       4    0.27    0.27       0       0    0.27    0.27       4
             *

894          KK   SB126
895          KM  RUNOFF FROM SUB-BASIN 126
896          BA   0.180
897          LG    0.25    0.15    9.70    0.06      31
898          UC   0.492   0.325
899          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
900          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 24

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

901          KK    S126
902          KM  8TH AVE & 24TH ST: STREET FLOW S126 VS. PIPE P126
903          KM  48" RCP PIPE - CAPACITY = 71CFS
904          DT    P126
905          DI       0      71   10000
906          DQ       0      71      71
             *

907          KK   S126W
908          KM  8TH AVE & 24TH ST: STREET FLOW WEST S126W VS. STREET FLOW SOUTH S126S
909          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
910          KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, 24TH ST IS AN 80-FT RIGHT-OF-WAY
911          KM  COLLECTOR
912          DT   S126S
913          DI       0      28     184     479     871    1345    1892    2506
```

```
914          DQ       0      16     115     305     558     865    1220    1619
             *

915          KK  RS126W
916          KM  8TH AVE & 24TH ST: ROUTE STREET FLOW S126W TO CP127 VIA 8TH AVE
917          KM  60-FT RIGHT-OF-WAY COLLECTOR
918          RS       7    FLOW      -1
919          RC   0.018   0.018   0.018    2560  0.0008
920          RX       0       0      13      13      47      47      60      60
921          RY       4    0.33    0.33       0       0    0.33    0.33       4
             *

922          KK   IP128
923          KM  8TH AVE & GILBERT RD: PIPE FLOW ROUTED EAST FROM CP128
924          KM  TO CP127 CREATES A LOOP. THEREFORE, PIPE FLOW IS MODELED AS AN INFLOW
925          KM  HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
926          KM  24" RCP PIPE - CAPACITY = 7CFS
927          BA       0
928          IN      15
929          QI       7       7       7       7       7       7       7       7       7       7
930          QI       7       7       7       7       7       7       7       7       7       7
931          QI       7       7       7       7       7
             *

932          KK   S118S
933          KM  RETURN DIVERTED STREET FLOW FROM CP118
934          KM  FOR ROUTING SOUTH TO CP127
935          DR   S118S
             *

936          KK  RS118S
937          KM  ROUTE STREET FLOW S118S TO CP127 VIA GILBERT RD
938          KM  6-LANE ARTERIAL
939          RS       4    FLOW      -1
940          RC   0.018   0.018   0.018    2620  0.0023
941          RX       0       0      21      21     109     109     130     130
942          RY       4   0.014   0.014       0       0    0.14    0.14       4
             *
1                                          HEC-1 INPUT                                                    PAGE 25

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

943          KK   SB127
944          KM  RUNOFF FROM SUB-BASIN 127
945          BA   0.250
946          LG    0.23    0.15    9.70    0.06      36
947          UC   0.546   0.352
948          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
949          UA     100
             *

950          KK    P118
951          KM  RETURN DIVERTED PIPE FLOW FROM CP118
952          KM  FOR ROUTING SOUTH TO CP127
953          DR    P118
             *

954          KK   RP118
955          KM  ROUTE PIPE FLOW P118 TO CP127 VIA GILBERT RD
956          KM  48" RCP PIPE - CAPACITY = 64CFS
957          RK    2620   0.002   0.013            CIRC       4                       6
             *

958          KK   CP127
959          KM  8TH AVE & GILBERT RD: COMBINE IP128,RS118S,RP118,SB127,RS126W
960          HC       5
             *

961          KK    S127
962          KM  8TH AVE & GILBERT RD: STREET FLOW S127 VS. PIPE FLOW P127
963          KM  48" RCP PIPE - CAPACITY = 64CFS
964          DT    P127
965          DI       0      64   10000
966          DQ       0      64      64
             *

967          KK   S127W
968          KM  8TH AVE & GILBERT RD: STREET FLOW WEST S127W VS. STREET FLOW SOUTH S127S
969          KM  SURVEYED INTERSECTION
970          DT   S127S
971          DI       0      19      56     131     258     451     680     947    1249    1583
972          DI    1948    4191
973          DQ       0      18      51     111     203     309     446     603     779     971
974          DQ    1181    2454
```

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                *

 975            KK  RS127W
 976            KM  8TH AVE & GILBERT RD: ROUTE STREET FLOW S127W TO CP128 VIA 8TH AVE
 977            KM  60-FT RIGHT-OF-WAY COLLECTOR
 978            RS       3    FLOW      -1
 979            RC   0.018   0.018   0.018    1970  0.0015
 980            RX       0       0      13      13      47      47      60      60
 981            RY       4    0.33    0.33       0       0    0.33    0.33       4
                *
1                                          HEC-1 INPUT                                                    PAGE 26

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


 982            KK   SB128
 983            KM  RUNOFF FROM SUB-BASIN 128
 984            BA   0.190
 985            LG    0.23    0.26    5.30    0.28      36
 986            UC   0.567   0.412
 987            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 988            UA     100
                *

 989            KK   CP128
 990            KM  8TH AVE & WILLIAMS: COMBINE SB128,RS127W
 991            HC       2
                *

 992            KK    S128
 993            KM  8TH AVE & WILLIAMS: STREET FLOW S128 VS. PIPE FLOW P128
 994            KM  PIPE DIRECTS FLOW EAST. THE PIPE FLOW IS DIVERTED OUT OF S128
 995            KM  AND ADDED AS AN INFLOW HYDROGRAPH (IP128) TO CP127
 996            KM  24" RCP PIPE - CAPACITY = 7CFS
 997            DT    P128
 998            DI       0       7   10000
 999            DQ       0       7       7
                *

1000            KK   RS128
1001            KM  8TH AVE & WILLIAMS: ROUTE STREET FLOW CP128 TO CP129 VIA 8TH AVE
1002            KM  60-FT RIGHT-OF-WAY COLLECTOR
1003            RS       3    FLOW      -1
1004            RC   0.018   0.018   0.018    3220  0.0019
1005            RX       0       0      13      13      47      47      60      60
1006            RY       4    0.33    0.33       0       0    0.33    0.33       4
                *

1007            KK   S121S
1008            KM  RETURN DIVERTED STREET FLOW FROM CP121
1009            KM  FOR ROUTING SOUTH TO CP129
1010            DR   S121S
                *

1011            KK  RS121S
1012            KM  ROUTE STREET FLOW S121S TO CP129 VIA STAPLEY DR
1013            KM  4-LANE ARTERIAL
1014            RS       3    FLOW      -1
1015            RC   0.018   0.018   0.018    2650  0.0011
1016            RX       0       0      31      31      99      99     130     130
1017            RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

1018            KK   SB129
1019            KM  RUNOFF FROM SUB-BASIN 129
1020            BA   0.310
1021            LG    0.24    0.25    4.80    0.37      32
1022            UC   0.992   0.732
1023            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1                                          HEC-1 INPUT                                                    PAGE 27

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

1024            UA     100
                *

1025            KK    D129
1026            KM  DIVERT RETENTION VOLUME FOR REED SKATE PARK
1027            KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR SKATE AREA
1028            KM  TOTAL VOLUME = 10 ACRE-FT
1029            DT  RET129      10
1030            DI       0   10000
1031            DQ       0   10000
                *
```

```
KK    P121
KM  RETURN DIVERTED PIPE FLOW FROM CP121
KM  FOR ROUTING SOUTH TO CP129
DR    P121
*

KK   RP121
KM  ROUTE PIPE FLOW P121 TO CP129 VIA STAPLEY DR
KM  42" RCP PIPE - CAPACITY = 45CFS
RK    2650   0.002   0.013            CIRC     3.5                        6
*

KK   CP129
KM  8TH AVE & STAPLEY DR: COMBINE RS121S,RP121,D129,RS128
HC       4
*

KK    S129
KM  8TH AVE & STAPLEY DR: STREET FLOW S129 VS. PIPE FLOW P129
KM  42" RCP PIPE - CAPACITY = 45CFS
DT    P129
DI       0      45   10000
DQ       0      45      45
*

KK   S129W
KM  8TH AVE & STAPLEY DR: STREET FLOW WEST S129W VS. STREET FLOW SOUTH S129S
KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, STAPLEY IS A 4-LANE ARTERIAL
DT   S129S
DI       0      30     252     713    1340    2109    3007
DQ       0      19     188     550    1047    1660    2378
*

KK  RS129W
KM  8TH AVEE & STAPLEY DR: ROUTE STREET FLOW SP129W TO CP130 VIA 8TH AVE
KM  60-FT RIGHT-OF-WAY COLLECTOR
RS       4    FLOW      -1
RC   0.018   0.018   0.018    2670  0.0007
RX       0       0      13      13      47      47      60      60
RY       4    0.33    0.33       0       0    0.33    0.33       4
*
```



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

KK   S122S
KM  RETURN DIVERTED STREET FLOW FROM CP122
KM  FOR ROUTING SOUTH TO CP130
DR   S122S
*

KK  RS122S
KM  ROUTE STREET FLOW S122S TO CP130 VIA HORNE
KM  60-FT RIGHT-OF-WAY COLLECTOR
RS       2    FLOW      -1
RC   0.018   0.018   0.018    2620  0.0015
RX       0       0      13      13      47      47      60      60
RY       4    0.33    0.33       0       0    0.33    0.33       4
*

KK   SB130
KM  RUNOFF FROM SUB-BASIN 130
BA   0.250
LG    0.24    0.25    4.80    0.35      32
UC   1.004    0.74
UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
UA     100
*

KK   CP130
KM  8TH AVE & HORNE: COMBINE RS122S,SB130,RS129W
HC       3
*

KK   S130W
KM  8TH AVE & HORNE: STREET FLOW WEST S130W VS. STREET FLOW SOUTH S130S
KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, HORNE IS A 60-FT RIGHT-OF-WAY
KM  COLLECTOR
DT   S130S
DI       0      30     166     418     752    1154    1616
DQ       0      21     117     295     531     814    1140
*
```

```
1092          KK  RS130W
1093          KM  8TH AVE & HORNE: ROUTE STREET FLOW S130W TO CP131 VIA 8TH AVE
1094          KM  60-FT RIGHT-OF-WAY COLLECTOR
1095          RS       5    FLOW      -1
1096          RC   0.018   0.018   0.018    2680  0.0004
1097          RX       0       0      13      13      47      47      60      60
1098          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

1099          KK   S123S
1100          KM  RETURN DIVERTED STREET FLOW FROM CP123
1101          KM  FOR ROUTING SOUTH TO CP131
1102          DR   S123S
              *
1                                        HEC-1 INPUT                                                PAGE 29

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

1103          KK  RS123S
1104          KM  ROUTE STREET FLOW S123S TO CP131 VIA MESA DR
1105          KM  4-LANE ARTERIAL
1106          RS       2    FLOW      -1
1107          RC   0.018   0.018   0.018    2600  0.0023
1108          RX       0       0      31      31      99      99     130     130
1109          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1110          KK   SB131
1111          KM  RUNOFF FROM SUB-BASIN 131
1112          BA   0.250
1113          LG    0.23    0.25    4.80    0.36      39
1114          UC   0.921   0.714
1115          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1116          UA     100
              *

1117          KK    P123
1118          KM  RETURN DIVERTED PIPE FLOW FROM CP123
1119          KM  FOR ROUTING SOUTH TO CP131
1120          DR    P123
              *

1121          KK   RP123
1122          KM  ROUTE PIPE FLOW P123 TO CP131 VIA MESA DR
1123          KM  36" RCP PIPE - CAPACITY = 33CFS
1124          RK    2600  0.0025   0.013            CIRC       3                       6
              *

1125          KK   CP131
1126          KM  8TH AVE & MESA DR: COMBINE RS123S,RP123,SB131,RS130W
1127          HC       4
              *

1128          KK    S131
1129          KM  8TH AVE & MESA DR: STREET FLOW S131 VS. PIPE FLOW P131
1130          KM  48" RCP PIPE - CAPACITY = 72CFS
1131          DT    P131
1132          DI       0      72   10000
1133          DQ       0      72      72
              *

1134          KK   S131W
1135          KM  8TH AVE & MESA DR: STREET FLOW WEST S131W VS. STREET FLOW SOUTH S131S
1136          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1137          KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, MESA DR IS A 4-LANE ARTERIAL
1138          DT   S131S
1139          DI       0      31     263     751    1417    2236    3191
1140          DQ       0      22     214     628    1196    1896    2715
              *
1                                        HEC-1 INPUT                                                PAGE 30

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

1141          KK  RS131W
1142          KM  8TH AVE & MESA DR: ROUTE STREET FLOW S131W TO CP132 VIA 8TH AVE
1143          KM  60-FT RIGHT-OF-WAY COLLECTOR
1144          RS       6    FLOW      -1
1145          RC   0.018   0.018   0.018    2600  0.0004
1146          RX       0       0      13      13      47      47      60      60
1147          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *
```

```
1148          KK   SB132
1149          KM  RUNOFF FROM SUB-BASIN 132
1150          BA   0.250
1151          LG    0.21    0.25    4.80    0.37      42
1152          UC   0.821   0.591
1153          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1154          UA     100
              *

1155          KK   CP132
1156          KM  8TH AVE & CENTER ST: COMBINE RS124,SB132,RS131W
1157          HC       3
              *

1158          KK   RS132
1159          KM  ROUTE DIVERTED FLOW FROM CP132 TO CP140 VIA CENTER ST
1160          KM  80-FT RIGHT-OF-WAY COLLECTOR
1161          RS       1    FLOW      -1
1162          RC   0.018   0.018   0.018    2630  0.0027
1163          RX       0       0      17      17      63      63      80      80
1164          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1165          KK   SB133
1166          KM  RUNOFF FROM SUB-BASIN 133
1167          BA   0.280
1168          LG    0.27    0.15    9.70    0.05      16
1169          UC   0.629   0.416
1170          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1171          UA     100
              *

1172          KK   S126S
1173          KM  RETURN DIVERTED STREET FLOW FROM CP126
1174          KM  FOR ROUTING SOUTH TO CP133
1175          DR   S126S
              *

1176          KK  RS126S
1177          KM  ROUTE STREET FLOW SP126S TO CP133 VIA 24TH ST
1178          KM  80-FT RIGHT-OF-WAY COLLECTOR
1179          RS       5    FLOW      -1
1180          RC   0.018   0.018   0.018    2640  0.0015
1181          RX       0       0      17      17      63      63      80      80
1182          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
1                                        HEC-1 INPUT                                          PAGE 31

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

1183          KK    IF51
1184          KM  INFLOW IF51 - REFERENCE STATION 51-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
1185          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
1186          BA       0
1187          ZR     =QI A=TEMPE  B=51-OUT  C=FLOW  F=CC6HR
              *

1188          KK    RS51
1189          KM  CONSOLIDATED CANAL & SOUTHERN AVE: ROUTE STREET FLOW IF51 TO
1190          KM  CP133 VIA SOUTHERN AVE
1191          KM  4-LANE ARTERIAL
1192          RS       7    FLOW      -1
1193          RC   0.018   0.018   0.018    3420  0.0019
1194          RX       0       0      31      31      99      99     130     130
1195          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1196          KK    IF67
1197          KM  INFLOW IF67 - REFERENCE STATION 67-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
1198          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
1199          BA       0
1200          ZR     =QI A=TEMPE  B=67-OUT  C=FLOW  F=CC6HR
              *

1201          KK    RS67
1202          KM  CONSOLIDATED CANAL & SOUTHERN AVE: ROUTE STREET FLOW IF67 TO
1203          KM  CP133 VIA SOUTHERN AVE
1204          KM  4-LANE ARTERIAL
1205          RS       7    FLOW      -1
1206          RC   0.018   0.018   0.018    3420  0.0019
1207          RX       0       0      31      31      99      99     130     130
1208          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
```

```
1209          KK   CP133
1210          KM  SOUTHERN AVE & 24TH ST: COMBINE RS126S,SB133,IF51,IF67
1211          HC       4
              *

1212          KK    S133
1213          KM  SOUTHERN AVE & 24TH ST: STREET FLOW S133 VS. PIPE FLOW P133
1214          KM  30" RCP PIPE - CAPACITY = 18CFS
1215          DT    P133
1216          DI       0      18   10000
1217          DQ       0      18      18
              *

1218          KK   S133W
1219          KM  SOUTHERN AVE & 24TH ST: STREET FLOW WEST S133W VS STREET FLOW SOUTH S133S
1220          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1221          KM  SOUTHERN AVE IS A 4-LANE ARTERIAL, 24TH ST IS AN 80-FT RIGHT-OF-WAY COLLECTOR
1222          DT   S133S
1223          DI       0      22     200     579    1096    1732    2476
1224          DQ       0       4      29      79     144     223     315
              *
1                                        HEC-1 INPUT                                                PAGE 32

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

1225          KK  RS133W
1226          KM  SOUTHERN AVE & 24TH ST: ROUTE STREET FLOW S133W TO CP134 VIA SOUTHERN AVE
1227          KM  4-LANE ARTERIAL
1228          RS       3    FLOW      -1
1229          RC   0.018   0.018   0.018    2590  0.0019
1230          RX       0       0      31      31      99      99     130     130
1231          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1232          KK    P133
1233          KM  RETURN DIVERTED PIPE FLOW FROM CP133
1234          KM  FOR ROUTING WEST TO CP134A
1235          DR    P133
              *

1236          KK   RP133
1237          KM  ROUTE PIPE FLOW P133 TO CP134A VIA SOUTHERN AVE
1238          KM  30" RCP PIPE - CAPACITY = 18CFS
1239          RK    2590   0.002   0.012            CIRC     2.5                        6
              *

1240          KK  CP134A
1241          KM  COMBINE RP133,RS133W
1242          HC       2
              *

1243          KK   S127S
1244          KM  RETURN DIVERTED STREET FLOW FROM CP127
1245          KM  FOR ROUTING SOUTH TO CP134
1246          DR   S127S
              *

1247          KK  RS127S
1248          KM  ROUTE STREET FLOW S127S TO CP134 VIA GILBERT RD
1249          KM  6-LANE ARTERIAL
1250          RS       3    FLOW      -1
1251          RC   0.018   0.018   0.018    2620  0.0027
1252          RX       0       0      21      21     109     109     130     130
1253          RY       4   0.014   0.014       0       0    0.14    0.14       4
              *

1254          KK   SB134
1255          KM  RUNOFF FROM SUB-BASIN 134
1256          BA   0.250
1257          LG    0.22    0.15    9.70    0.06      37
1258          UC   0.596   0.411
1259          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1260          UA     100
              *
1                                        HEC-1 INPUT                                                PAGE 33

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

1261          KK    D134
1262          KM  DIVERT RETENTION VOLUME FOR SILVERGATE PARK
1263          KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR OPEN SPACE AND PLAY FIELDS
1264          KM  TOTAL VOLUME = 24 ACRE-FT
1265          DT  RET134      24
```

```
1266          DI       0    5000
1267          DQ       0    5000
              *

1268          KK    P126
1269          KM  RETURN DIVERTED PIPE FLOW FROM CP126
1270          KM  FOR ROUTING SOUTHWEST TO CP134
1271          DR    P126
              *

1272          KK   RP126
1273          KM  ROUTE PIPE P126 TO CP134 VIA 24TH ST
1274          KM  48" RCP PIPE - CAPACITY = 71CFS
1275          RK    1320  0.0024   0.013            CIRC       4                        6
              *

1276          KK    P127
1277          KM  RETURN DIVERTED PIPE FLOW FROM CP127
1278          KM  FOR ROUTING SOUTH TO CP134
1279          DR    P127
              *

1280          KK   RP127
1281          KM  ROUTE PIPE FLOW P127 TO CP134 VIA GILBERT RD
1282          KM  48" RCP PIPE - CAPACITY = 64CFS
1283          RK    2620   0.002   0.013            CIRC       4                        6
              *

1284          KK   CP134
1285          KM  SOUTHERN AVE & GILBERT RD: COMBINE RS127S,RP127,RP126,D134,CP134A
1286          HC       5
              *

1287          KK    S134
1288          KM  SOUTHERN AVE & GILBERT RD: STREET FLOW S134 VS. PIPE FLOW P134
1289          KM  84" RCP PIPE - CAPACITY = 286CFS
1290          DT    P134
1291          DI       0     286   10000
1292          DQ       0     286     286
              *

1293          KK   S134W
1294          KM  SOUTHERN AVE & GILBERT RD: STREET FLOW WEST S134W VS. STREET FLOW SOUTH S134S
1295          KM  SURVEYED INTERSECTION
1296          DT   S134S
1297          DI       0      34     548    1619    3054    4904    7080
1298          DQ       0      34     274     785    1480    2398    3484
              *
1                                          HEC-1 INPUT                                          PAGE 34

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

1299          KK  RS134W
1300          KM  SOUTHERN AVE & GILBERT RD: ROUTE STREET FLOW S134W TO CP135 VIA SOUTHERN AVE
1301          KM  4-LANE ARTERIAL
1302          RS       2    FLOW      -1
1303          RC   0.018   0.018   0.018    1280  0.0016
1304          RX       0       0      31      31      99      99     130     130
1305          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1306          KK   SB135
1307          KM  RUNOFF FROM SUB-BASIN 135
1308          BA   0.120
1309          LG    0.21    0.15    9.70    0.06      43
1310          UC   0.583    0.53
1311          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1312          UA     100
              *

1313          KK   CP135
1314          KM  SOUTHERN AVE & TOLTEC: COMBINE SB135,RS134W
1315          HC       2
              *

1316          KK    S135
1317          KM  SOUTHERN AVE & TOLTEC: STREET FLOW S135 VS. PIPE FLOW P135
1318          KM  36" RCP PIPE - CAPACITY = 26CFS
1319          DT    P135
1320          DI       0      26   10000
1321          DQ       0      26      26
              *

1322          KK   RS135
```

```
KM  SOUTHERN AVE & TOLTEC: ROUTE STREET FLOW S135 TO CP136 VIA SOUTHERN AVE
KM  4-LANE ARTERIAL
RS       2    FLOW      -1
RC   0.018   0.018   0.018    1280  0.0016
RX       0       0      31      31      99      99     130     130
RY       4    0.18    0.18       0       0    0.18    0.18       4
*

KK   SB136
KM  RUNOFF FROM SUB-BASIN 136
BA   0.120
LG    0.20    0.15    8.80    0.07      33
UC   0.504    0.41
UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
UA     100
*
```



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

KK    D136
KM  DIVERT RETENTION VOLUME FOR MESA HIGH SCHOOL
KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR PLAY FIELDS
KM  TOTAL VOLUME = 26 ACRE-FT
DT  RET136      26
DI       0    5000
DQ       0    5000
*

KK    P135
KM  RETURN DIVERTED PIPE FLOW FROM CP135
KM  FOR ROUTING WEST TO CP136
DR    P135
*

KK   RP135
KM  ROUTE PIPE FLOW P135 TO CP136 VIA SOUTHERN AVE
KM  36" RCP PIPE - CAPACITY = 26CFS
RK    1310  0.0015   0.013            CIRC       3                       6
*

KK   CP136
KM  SOUTHERN AVE & HARRIS DR: COMBINE D136,RP135,RS135
HC       3
*

KK    S136
KM  SOUTHERN AVE & HARRIS DR: STREET FLOW S136 VS. PIPE FLOW P136
KM  42" RCP PIPE - CAPACITY = 39CFS
DT    P136
DI       0      39   10000
DQ       0      39      39
*

KK   S136W
KM  SOUTHERN AVE & HARRIS DR: STREET FLOW WEST S136W VS. STREET FLOW SOUTH S136S
KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
KM  SOUTHERN AVE IS A 4-LANE ARTERIAL, HARRIS DR IS AN 80-FT RIGHT-OF-WAY COLLECTO
DT   S136S
DI       0      24     212     602    1134    1788    2550
DQ       0       8      60     158     288     447     630
*

KK  RS136W
KM  SOUTHERN AVE & HARRIS DR: ROUTE STREET FLOW S136W TO CP137 VIA SOUTHERN AVE
KM  4-LANE ARTERIAL
RS       4    FLOW      -1
RC   0.018   0.018   0.018    2600  0.0015
RX       0       0      31      31      99      99     130     130
RY       4    0.18    0.18       0       0    0.18    0.18       4
*
```



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

KK   S129S
KM  RETURN DIVERTED STREET FLOW FROM CP129
KM  FOR ROUTING SOUTH TO CP137
DR   S129S
*

KK  RS129S
KM  ROUTE STREET FLOW S129S TO CP137 VIA STAPLEY DR
```

```
1380          KM  4-LANE ARTERIAL
1381          RS       2    FLOW      -1
1382          RC   0.018   0.018   0.018    2620  0.0023
1383          RX       0       0      31      31      99      99     130     130
1384          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1385          KK   SB137
1386          KM  RUNOFF FROM SUB-BASIN 137
1387          BA   0.250
1388          LG    0.23    0.16    7.00    0.14      37
1389          UC   0.683   0.517
1390          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1391          UA     100
              *

1392          KK    P129
1393          KM  RETURN DIVERTED PIPE FLOW FROM CP129
1394          KM  FOR ROUTING SOUTH TO CP137
1395          DR    P129
              *

1396          KK   RP129
1397          KM  ROUTE PIPE FLOW P129 TO CP137 VIA STAPLEY DR
1398          KM  42" RCP PIPE - CAPACITY = 45 CFS
1399          RK    2620   0.002   0.013            CIRC     3.5                        6
              *

1400          KK    P136
1401          KM  RETURN DIVERTED PIPE FLOW FROM CP136
1402          KM  FOR ROUTING WEST TO CP137
1403          DR    P136
              *

1404          KK   RP136
1405          KM  ROUTE PIPE FLOW P136 TO CP137 VIA SOUTHERN AVE
1406          KM  42" RCP PIPE - CAPACITY = 39 CFS
1407          RK    2600  0.0015   0.012            CIRC     3.5                        6
              *

1408          KK   CP137
1409          KM  SOUTHERN AVE & STAPLEY DR: COMBINE RS129S,RP129,SB137,RP136,RS136W
1410          HC       5
              *
```



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

1411          KK    S137
1412          KM  SOUTHERN AVE & STAPLEY DR: STREET FLOW S137 VS. PIPE FLOW P137
1413          KM  72" RCP PIPE - CAPACITY = 134CFS
1414          DT    P137
1415          DI       0     134   10000
1416          DQ       0     134     134
              *

1417          KK   S137W
1418          KM  SOUTHERN AVE & STAPLEY DR: STREET FLOW WEST S137W VS. STREET FLOW SOUTH S137S
1419          KM  SURVEYED INTERSECTION
1420          DT   S137S
1421          DI       0       9      89     397     925    1626    2480    3475    4599
1422          DQ       0       9      87     350     745    1252    1858    2557    3341
              *

1423          KK  RS137W
1424          KM  SOUTHERN AVE & STAPLEY DR: ROUTE STREET FLOW S137W TO CP138 VIA SOUTHERN AVE
1425          KM  4-LANE ARTERIAL
1426          RS       5    FLOW      -1
1427          RC   0.018   0.018   0.018    2660  0.0008
1428          RX       0       0      31      31      99      99     130     130
1429          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1430          KK   S130S
1431          KM  RETURN DIVERTED STREET FLOW FROM CP130
1432          KM  FOR ROUTING SOUTH TO CP138
1433          DR   S130S
              *

1434          KK  RS130S
1435          KM  ROUTE STREET FLOW S130S TO CP138 VIA HORNE
1436          KM  60-FT RIGHT-OF-WAY COLLECTOR
1437          RS       2    FLOW      -1
1438          RC   0.018   0.018   0.018    2630  0.0023
```

```
1439          RX       0       0      13      13      47      47      60      60
1440          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

1441          KK   SB138
1442          KM  RUNOFF FROM SUB-BASIN 138
1443          BA   0.250
1444          LG    0.22    0.23    6.40    0.18      31
1445          UC   0.692   0.507
1446          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1447          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1448          KK    P137
1449          KM  RETURN DIVERTED PIPE FLOW FROM CP137
1450          KM  FOR ROUTING WEST TO CP138
1451          DR    P137
              *

1452          KK   RP137
1453          KM  ROUTE PIPE FLOW P137 TO CP138 VIA SOUTHERN AVE
1454          KM  72" RCP PIPE - CAPACITY = 134CFS
1455          RK    2600   0.001   0.013            CIRC       6                       6
              *

1456          KK   CP138
1457          KM  SOUTHERN AVE & HORNE: COMBINE RS130S,SB138,RP137,RS137W
1458          HC       4
              *

1459          KK    S138
1460          KM  SOUTHERN AVE & HORNE: STREET FLOW S138 VS. PIPE FLOW P138
1461          KM  72" RCP PIPE - CAPACITY = 134CFS
1462          DT    P138
1463          DI       0     134    1000
1464          DQ       0     134     134
              *

1465          KK   S138W
1466          KM  SOUTHERN AVE & HORNE: STREET FLOW WEST S138W VS. STREET FLOW SOUTH S138S
1467          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1468          KM  SOUTHERN AVE IS A 4-LANE ARTERIAL, HORNE IS AN 80-FT RIGHT-OF-WAY COLLECTOR
1469          DT   S138S
1470          DI       0      25     215     603    1132    1780    2535
1471          DQ       0      12      85     223     408     632     891
              *

1472          KK  RS138W
1473          KM  SOUTHERN AVE & HORNE: ROUTE STREET FLOW S138W TO CP139 VIA SOUTHERN AVE
1474          KM  4-LANE ARTERIAL
1475          RS       5    FLOW      -1
1476          RC   0.018   0.018   0.018    2660  0.0011
1477          RX       0       0      31      31      99      99     130     130
1478          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1479          KK   S131S
1480          KM  RETURN DIVERTED STREET FLOW FROM CP131
1481          KM  FOR ROUTING SOUTH TO CP139
1482          DR   S131S
              *
1                                          HEC-1 INPUT                                          PAGE 39

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

1483          KK  RS131S
1484          KM  ROUTE STREET FLOW S131S TO CP139 VIA MESA DR
1485          KM  4-LANE ARTERIAL
1486          RS       2    FLOW      -1
1487          RC   0.018   0.018   0.018    2650   0.003
1488          RX       0       0      31      31      99      99     130     130
1489          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1490          KK   SB139
1491          KM  RUNOFF FROM SUB-BASIN 139
1492          BA   0.250
1493          LG    0.21    0.25    5.00    0.34      44
1494          UC   0.738   0.563
1495          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
1496          UA     100
              *

1497          KK    D139
1498          KM  DIVERT RETENTION VOLUME FOR HOLMES ELEMENTARY SCHOOL
1499          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR THE PLAY FIELD
1500          KM  TOTAL VOLUME = 4 ACRE-FT
1501          DT  RET139       4
1502          DI       0    5000
1503          DQ       0    5000
              *

1504          KK    P131
1505          KM  RETURN DIVERTED PIPE FLOW FROM 131
1506          KM  FOR ROUTING SOUTH TO CP139
1507          DR    P131
              *

1508          KK   RP131
1509          KM  ROUTE PIPE FLOW P131 TO CP139 VIA MESA DR
1510          KM  48" RCP PIPE - CAPACITY = 72CFS
1511          RK    2650  0.0025   0.013            CIRC       4                        6
              *

1512          KK   CP139
1513          KM  SOUTHERN AVE & MESA DR: COMBINE RS131S,RP131,D139,RS138W
1514          HC       4
              *

1515          KK    S139
1516          KM  SOUTHERN AVE & MESA DR: STREET FLOW S139 VS. PIPE FLOW P139
1517          KM  54" RCP PIPE - CAPACITY = 62CFS
1518          DT    P139
1519          DI       0      62   10000
1520          DQ       0      62      62
              *
```



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

1521          KK   S139W
1522          KM  SOUTHERN AVE & MESA DR: STREET FLOW WEST S139W VS. STREET FLOW SOUTH S139S
1523          KM  SURVEYED INTERSECTION
1524          DT   S139S
1525          DI       0      21     172     560    1138    1873    2750    3758
1526          DQ       0      21     168     496     952    1518    2185    2946
              *

1527          KK  RS139W
1528          KM  SOUTHERN AVE & MESA DR: ROUTE STREET FLOW S139W TO CP140 VIA SOUTHERN AVE
1529          KM  4-LANE ARTERIAL
1530          RS       5    FLOW      -1
1531          RC   0.018   0.016   0.018    2660  0.0008
1532          RX       0       0      31      31      99      99     130     130
1533          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1534          KK   SB140
1535          KM  RUNOFF FROM SUB-BASIN 140
1536          BA   0.250
1537          LG    0.17    0.25    4.80    0.38      59
1538          UC     0.8   0.631
1539          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1540          UA     100
              *

1541          KK    D140
1542          KM  DIVERT RETENTION VOLUME FOR LINCOLN ELEMENTARY SCHOOL
1543          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR THE PLAY FIELD
1544          KM  TOTAL VOLUME = 4 ACRE-FT
1545          DT  RET140       4
1546          DI       0    5000
1547          DQ       0    5000
              *

1548          KK    P139
1549          KM  RETURN DIVERTED PIPE FLOW FROM CP139
1550          KM  FOR ROUTING WEST TO CP140
1551          DR    P139
              *

1552          KK   RP139
1553          KM  ROUTE PIPE FLOW P139 TO CP140 VIA SOUTHERN AVE
1554          KM  54" RCP PIPE - CAPACITY = 62CFS
```

```
1555          RK    2660   0.001   0.013            CIRC     4.5                        6
              *

1556          KK   CP140
1557          KM  SOUTHERN AVE & CENTER ST: COMBINE RS132,D140,RP139,RS139W
1558          HC       4
              *
1                                          HEC-1 INPUT                                                    PAGE 41

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

1559          KK    S140
1560          KM  SOUTHERN AVE & CENTER ST: STREET FLOW S140 VS. PIPE FLOW P140
1561          KM  60" RCP PIPE - CAPACITY = 83CFS
1562          DT    P140
1563          DI       0      83   10000
1564          DQ       0      83      83
              *

1565          KK   RS140
1566          KM  ROUTE STREET FLOW S140S TO CP147 VIA CENTER ST
1567          KM  80-FT RIGHT-OF-WAY COLLECTOR
1568          RS       1    FLOW      -1
1569          RC   0.018   0.018   0.018    2400  0.0017
1570          RX       0       0      17      17      63      63      80      80
1571          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1572          KK   SB141
1573          KM  RUNOFF FROM SUB-BASIN 141
1574          BA   0.320
1575          LG    0.21    0.17    8.80    0.07      34
1576          UC   0.667    0.48
1577          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1578          UA     100
              *

1579          KK    IF71
1580          KM  INFLOW FROM ADOT CHANNEL EAST OF THE STUDY AREA
1581          KM  INFLOW IS EQUAL TO THE CAPACITY OF THE 2-24" PIPES CONVEYING CHANNEL FLOW
1582          KM  2-24" RCP PIPE - CAPACITY = 30CFS
1583          BA     0.1
1584          IN      60
1585          QI       0      30      30      30      30      30      30      30      30      30
1586          QI      30      30      30      30      30      30      30    30.1      30      30
1587          QI      30      30      30      30      30      30      30      30      30      30
1588          QI      30      30      30      30       0
              *

1589          KK    RC71
1590          KM  US 60 & CONSOLIDATED CANAL: ROUTE CHANNEL FLOW IF71 TO CP142 VIA US 60
1591          KM  ADOT CHANNEL CROSS SECTION
1592          RS       3    FLOW      -1
1593          RC   0.014   0.014   0.014    3740  0.0012
1594          RX       0       1       2      16      48      62      63      64
1595          RY      10       7       7       0       0       7       7      10
              *

1596          KK   S133S
1597          KM  RETURN DIVERTED STREET FLOW FROM CP133
1598          KM  FOR ROUTING SOUTH TO CP141
1599          DR   S133S
              *
1                                          HEC-1 INPUT                                                    PAGE 42

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

1600          KK  RS133S
1601          KM  ROUTE STREET FLOW S133S TO CP141 VIA 24TH ST
1602          KM  80-FT RIGHT-OF-WAY COLLECTOR
1603          RS      16    FLOW      -1
1604          RC   0.018   0.018   0.018    2550  0.0001
1605          RX       0       0      17      17      63      63      80      80
1606          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1607          KK   CP141
1608          KM  ADOT US 60 CHANNEL: COMBINE RS133S,SB141,RI71
1609          HC       3
              *

1610          KK   RC141
1611          KM  ADOT US 60 CHANNEL: ROUTE CHANNEL FLOW CP141 TO CP142 VIA US 60
```

```
1612          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BULIT INFORMATION
1613          RS       1    FLOW      -1
1614          RC   0.014   0.014   0.014    2640  0.0026
1615          RX       0       1       2      12      14      24      25      26
1616          RY      10       5       5       0       0       5       5      10
              *

1617          KK   S134S
1618          KM  RETURN DIVERTED STREET FLOW FROM CP134
1619          KM  FOR ROUTING SOUTH TO CP142
1620          DR   S134S
              *

1621          KK  RS134S
1622          KM  ROUTE STREET FLOW S134S TO CP142 VIA GILBERT RD
1623          KM  6-LANE ARTERIAL
1624          RS       3    FLOW      -1
1625          RC   0.018   0.018   0.018    2400  0.0021
1626          RX       0       0      21      21     109     109     130     130
1627          RY       4   0.014   0.014       0       0    0.14    0.14       4
              *

1628          KK   SB142
1629          KM  RUNOFF FROM SUB-BASIN 142
1630          BA   0.230
1631          LG    0.21    0.15    8.80    0.08      39
1632          UC   1.500   1.405
1633          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1634          UA     100
              *

1635          KK   CP142
1636          KM  ADOT US 60 CHANNEL: COMBINE RS134S,SB142,RC141
1637          HC       3
              *
1                                        HEC-1 INPUT                                          PAGE 43

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

1638          KK   BS142
1639          KM  KINGSBOROUGH PARK RETENTION BASIN
1640          KM  STAGE STORAGE ASSUMES LOW FLOW REMAINS IN THE CHANNEL.
1641          KM  LOW FLOW IN THE CHANNEL IS BASED ON THE OPENING AT THE DIVERSION GATE
1642          KM  INTENDED TO DIVERT FLOWS INTO THE RETENTION BASIN. FLOWS CONTINUING
1643          KM  IN THE CHANNEL IS BASED ON THE ORIFICE EQUATION WITH THE HEAD BEING EQUAL
1644          KM  TO THE WEIR ELEVATION INTO THE BASIN AND THE DIMENSIONS OF THE GATE
1645          KM  BASED ON FIELD OBSERVATION
1646          KM  OVERFLOW BASED ON WEIR DIMENSIONS
1647          RS       1    STOR       0
1648          SA     2.5       3       6      18      19      20      22      23
1649          SE    1212    1213    1214    1231    1233    1235    1236    1239
1650          SQ    59.9      60      60      60     166     777    1276    3289
              *

1651          KK   RC142
1652          KM  ADOT US60 CHANNEL & GILBERT RD: ROUTE BS142 TO CP143 ALONG US60
1653          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1654          RS       6    FLOW      -1
1655          RC   0.014   0.014   0.014    2560  0.0022
1656          RX       0       1       2      12      14      24      25      26
1657          RY      10       5       5       0       0       5       5      10
              *

1658          KK   S136S
1659          KM  RETURN DIVERTED STREET FLOW FROM CP136
1660          KM  FOR ROUTING SOUTH TO CP143
1661          DR   S136S
              *

1662          KK  RS136S
1663          KM  ROUTE STREET FLOW S136S TO CP143 VIA HARRIS DR
1664          KM  80-FT RIGHT-OF-WAY COLLECTOR
1665          RS       8    FLOW      -1
1666          RC   0.018   0.018   0.018    2450  0.0004
1667          RX       0       0      17      17      63      63      80      80
1668          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1669          KK   SB143
1670          KM  RUNOFF FROM SUB-BASIN 143
1671          BA    0.23
1672          LG    0.21    0.15    9.70    0.06      39
1673          UC   0.767   0.606
1674          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
1675          UA     100
              *

1676          KK    P134
1677          KM  RETURN DIVERTED PIPE FLOW FROM CP134
1678          KM  FOR ROUTING SOUTHWEST TO CP143
1679          DR    P134
              *
1                                    HEC-1 INPUT                                                    PAGE 44

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


1680          KK   RP134
1681          KM  ROUTE PIPE FLOW CP134 TO CP143 VIA GILBERT RD TO EMERALD PARK
1682          KM  84" RCP PIPE - CAPACITY = 286CFS
1683          RK    2400   0.002   0.013            CIRC       7                        6
              *

1684          KK   CP143
1685          KM  US 60 & HARRIS DR: COMBINE RS136S,SB143,RP134,RC142
1686          HC       4
              *

1687          KK   BS143
1688          KM  EMERALD PARK RETENTION BASIN
1689          KM  STAGE STORAGE ASSUMES LOW FLOW REMAINS IN THE CHANNEL.
1690          KM  LOW FLOW IN THE CHANNEL IS BASED ON THE OPENING AT THE DIVERSION GATE
1691          KM  INTENDED TO DIVERT FLOWS INTO THE RETENTION BASIN. FLOWS CONTINUING
1692          KM  IN THE CHANNEL IS BASED ON THE ORIFICE EQUATION WITH THE HEAD BEING EQUAL
1693          KM  TO THE WEIR ELEVATION INTO THE BASIN AND THE DIMENSIONS OF THE GATE
1694          KM  BASED ON FEILD OBSERVATION
1695          KM  OVERFLOW BASED ON WEIR DIMENSIONS
1696          RS       1    STOR       0
1697          SA     3.8       4       8      11    11.5      12    12.5
1698          SE    1210    1211    1214    1222    1224    1226    1227
1699          SQ      50      50      50      50     836    2459    3545
              *

1700          KK   RC143
1701          KM  ADOT US60 CHANNEL& HARRIS DR: ROUTE BS143 TO CP144 VIA US60
1702          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1703          RS       4    FLOW      -1
1704          RC   0.014   0.014   0.014    2630   0.002
1705          RX       0       1       2      12      14      24      25      26
1706          RY      10       5       5       0       0       5       5      10
              *

1707          KK   S137S
1708          KM  RETURN DIVERTED STREET FLOW FROM CP137
1709          KM  FOR ROUTING SOUTH TO CP144
1710          DR   S137S
              *

1711          KK  RS137S
1712          KM  ROUTE STREET FLOW S137S TO CP144 VIA STAPLEY DR
1713          KM  4-LANE ARTERIAL
1714          RS       2    FLOW      -1
1715          RC   0.018   0.018   0.018    2350  0.0013
1716          RX       0       0      31      31      99      99     130     130
1717          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                    HEC-1 INPUT                                                    PAGE 45

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


1718          KK   SB144
1719          KM  RUNOFF FROM SUB-BASIN 144
1720          BA   0.230
1721          LG    0.22    0.15    9.70    0.06      41
1722          UC   1.171   0.953
1723          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1724          UA     100
              *

1725          KK    D144
1726          KM  DIVERT RETENTION VOLUME FOR RETENTION BASIN
1727          KM  LOCATED ON THE SOUTH SIDE OF HILTON EAST OF STAPLEY DR
1728          KM  APPROXIMATELY 2 FT OF DEPTH FOR RETENTION. TOTAL VOLUME = 4 ACRE-FEET
1729          DT  RET144       4
1730          DI       0   10000
1731          DQ       0   10000
              *
```

```
1732          KK   CP144
1733          KM  ADOT US 60 CHANNEL & STAPLEY DR: COMBINE RS137S,D144,RC143
1734          HC       3
              *

1735          KK   RC144
1736          KM  ADOT US 60 CHANNEL & STAPLEY DR: ROUTE CP144 TO CP145 VIA US60
1737          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1738          RS       1    FLOW      -1
1739          RC   0.014   0.014   0.014    2660  0.0012
1740          RX       0       1       2      14      16      28      29      30
1741          RY      10       6       6       0       0       6       6      10
              *

1742          KK   S138S
1743          KM  RETURN DIVERTED STREET FLOW FROM CP138
1744          KM  FOR ROUTING SOUTH TO CP145
1745          DR   S138S
              *

1746          KK  RS138S
1747          KM  ROUTE STREET FLOW S138S TO CP145 VIA HORNE
1748          KM  80-FT RIGHT-OF-WAY COLLECTOR
1749          RS       2    FLOW      -1
1750          RC   0.018   0.018   0.018    2400  0.0008
1751          RX       0       0      17      17      63      63      80      80
1752          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1753          KK   SB145
1754          KM  RUNOFF FROM SUB-BASIN 145
1755          BA   0.240
1756          LG    0.22    0.15    9.70    0.06      34
1757          UC   0.729   0.531
1758          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1759          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE 46

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

1760          KK    P138
1761          KM  RETURN DIVERTED PIPE FLOW FROM CP138
1762          KM  FOR ROUTING SOUTH TO CP145
1763          DR    P138
              *

1764          KK   RP138
1765          KM  ROUTE PIPE FLOW P138 TO CP145 VIA HORNE
1766          KM  72" RCP PIPE - CAPACITY = 134CFS
1767          RK    2200   0.001   0.013            CIRC       6                       6
              *

1768          KK   SB148
1769          KM  RUNOFF FROM SUB-BASIN 148
1770          BA    0.15
1771          LG    0.05    0.25     4.8    0.25      90
1772          UC   0.892    2.12
1773          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1774          UA     100
              *

1775          KK   CP145
1776          KM  ADOT US 60 CHANNEL & HORNE: COMBINE RS138S,RP138,SB145,RC144,SB148
1777          HC       5
              *

1778          KK   BS145
1779          KM  SHERWOOD PARK RETENTION BASIN
1780          KM  STAGE STORAGE ASSUMES LOW FLOW REMAINS IN THE CHANNEL.
1781          KM  LOW FLOW IN THE CHANNEL IS BASED ON THE OPENING AT THE DIVERSION GATE
1782          KM  INTENDED TO DIVERT FLOWS INTO THE RETENTION BASIN. FLOWS CONTINUING
1783          KM  IN THE CHANNEL IS BASED ON THE ORIFICE EQUATION WITH THE HEAD BEING EQUAL
1784          KM  TO THE WEIR ELEVATION INTO THE BASIN AND THE DIMENSIONS OF THE GATE
1785          KM  BASED ON FEILD OBSERVATION
1786          KM  OVERFLOW BASED ON WEIR DIMENSIONS
1787          RS       1    STOR       0
1788          SA       1     1.5       4       8      11      15    15.2    15.5      16
1789          SE    1203    1204    1206    1208    1210    1218    1219    1221    1222
1790          SQ     180     180     180     180     180     180     465    1817    2820
              *

1791          KK   RC145
1792          KM  ADOT US60 CHANNEL & HORNE: ROUTE CP145 TO CP146 VIA US60
```

```
1793          KM  ADOT CHANNEL CROSS SECTION
1794          RS       1    FLOW      -1
1795          RC   0.014   0.014   0.014    2640  0.0016
1796          RX       0       1       2      16      24      38      39      40
1797          RY      10       7       7       0       0       7       7      10
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1798          KK   S139S
1799          KM  RETURN DIVERTED FLOW FROM CP139
1800          KM  FOR ROUTING SOUTH TO CP146
1801          DR   S139S
              *

1802          KK  RS139S
1803          KM  ROUTE STREET FLOW S139S TO CP146 VIA MESA DR
1804          KM  4-LANE ARTERIAL
1805          RS       2    FLOW      -1
1806          RC   0.018   0.018   0.018    2250  0.0009
1807          RX       0       0      31      31      99      99     130     130
1808          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1809          KK   SB146
1810          KM  RUNOFF FROM SUB-BASIN 146
1811          BA   0.240
1812          LG    0.23    0.15    7.30    0.13      37
1813          UC   0.817   0.607
1814          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1815          UA     100
              *

1816          KK    D146
1817          KM  DIVERT RETENTION VOLUME FOR RETENTION BASIN
1818          KM  LOCATED ON HOLMES AVE WEST OF HOBSON
1819          KM  APPROXIMATELY 2 FT OF DEPTH FOR RETENTION. TOTAL VOLUME = 3 ACRE-FEET
1820          DT  RET146       3
1821          DI       0   10000
1822          DQ       0   10000
              *

1823          KK   SB149
1824          KM  RUNOFF FROM SUB-BASIN 149
1825          BA    0.06
1826          LG    0.05    0.25     4.8    0.25      90
1827          UC   0.288   0.323
1828          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1829          UA     100
              *

1830          KK   CP146
1831          KM  ADOT US 60 CHANNEL & MESA DR: COMBINE RS139S,D146,RC145,SB149
1832          HC       4
              *

1833          KK   RC146
1834          KM  US60 & MESA DR: ROUTE CP146 TO CP147 VIA US60
1835          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1836          RS       1    FLOW      -1
1837          RC   0.014   0.014   0.014    2670  0.0012
1838          RX       0       1       2      16      24      38      39      40
1839          RY      10       7       7       0       0       7       7      10
              *
1                                          HEC-1 INPUT                                                    PAGE 48

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


1840          KK   S146A
1841          KM  DIVERT 175CFS TO 200 SERIES WATERSHED THROUGH A 54" PIPE UNDER RAILROAD
1842          DT   P146A
1843          DI       0     175   10000
1844          DQ       0     175     175
              *

1845          KK   S146B
1846          KM  DIVERT 50% OF THE REMAINING FLOW SOUTH TO BE ROUTED THROUGH THE 10' X 10'
1847          KM  BOX CULVERT. ASSUMES WEIR ELEVATION ON THE SOUTH SIDE OF THE ADOT CHANNEL IS
1848          KM  THE SAME AS THE WEIR ELEVATION ON THE NORTH SIDE WHICH DRAINS INTO THE
1849          KM  HERITAGE PARK BASIN
1850          DT   P146B
1851          DI       0    5000   10000
```

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1852          DQ       0    2500    5000
              *

1853          KK   SB147
1854          KM  RUNOFF FROM SUB-BASIN 147
1855          BA   0.230
1856          LG     0.2    0.25    4.80    0.39      42
1857          UC   0.992    0.68
1858          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1859          UA     100
              *

1860          KK    P140
1861          KM  RETURN DIVERTED PIPE FLOW FROM CP140
1862          KM  FOR ROUTING SOUTH TO CP147
1863          DR    P140
              *

1864          KK   RP140
1865          KM  ROUTE PIPE FLOW P140 TO CP147 VIA CENTER ST
1866          KM  60" RCP PIPE - CAPACITY = 83CFS
1867          RK    2200   0.001   0.013            CIRC       5                        6
              *

1868          KK   CP147
1869          KM  ADOT US 60 CHANNEL & CENTER ST: COMBINE RS140,RP140,SB147,S146B
1870          HC       4
              *

1871          KK   BS147
1872          KM  HERITAGE PARK RETENTION BASIN
1873          KM  OUTFLOW BASED ON THE WEIR STRUCTURE LOCATED ADJACENT TO THE ADOT CHANNEL.
1874          KM  ONCE THE PARK BASIN FILLS, FLOWS WILL DISCHARGE OVER THE WEIR STRUCTURE BACK
1875          KM  INTO THE ADOT CHANNEL WHERE FLOWS WILL DISCHARGE TO THE SOUTH WEIR
1876          KM  AND BE ROUTED TO THE CENTER ST BASIN.
1877          KM  VOLUME BASED ON SURVEY DATA
1878          RS       1    STOR       0
1879          SA       7      13    18.5      19    19.5      20
1880          SE    1200    1208    1213    1215    1218    1220
1881          SQ       0       0       0     430    2146    3785
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1882          KK   P146B
1883          KM  RETURN DIVERTED FLOW S146B
1884          KM  REPRESENTS HALF OF THE ADOT CHANNAL CAPACITY MINUS THE CAPACITY OF THE 54"
1885          KM  PIPE UNDER THE RAILROAD
1886          DR   P146B
              *

1887          KK  CP147A
1888          KM  COMBINE BS147,P146B
1889          HC       2
              *

1890          KK  RP147A
1891          KM  ROUTE FLOW FROM THE ADOT CHANNEL TO CENTER ST BASIN
1892          KM  10' X 10' BOX CULVERT
1893          RK     900   0.002   0.013            DEEP      10                        6
              *

1894          KK  IFHC23
1895          KM  INFLOW FROM GILBERT-CHANDLER ADMS VOLUME II (1994)
1896          KM  SUB-BASIN 23
1897          KM  FLOWS WILL COMBINE WITH FLOWS GENERATED NORTH OF THE US 60
1898          BA       0
1899          ZR     =QI  A=GCADMSFUTURE  B=HC23  C=FLOW  F=6HR FLU FWY
              *

1900          KK  CPCSTB
1901          KM  CENTER ST BASIN: COMBINE RP147A,IFHC23
1902          HC       2
              *

1903          KK   BSCST
1904          KM  CENTER ST RETENTION BASIN
1905          KM  VOLUME BASED ON AS-BUILT INFORMATION
1906          RS       1    STOR       0
1907          SA     1.1    15.4   19.99    21.5    22.9   253.8     500
1908          SE    1196    1198    1202    1206    1210    1214    1215
1909          SQ       0       0       0       0       0       0   10000
1910          ZW    A=TEMPE  B=BSCST  C=FLOW  F=WEST
```

```
                *
                * ******************************************************************
                * *                                                                *
                * * 200 SERIES WATERSHED -                                         *
                * * BOUNDED TO THE WEST BY TEMPE CANAL, TO THE NORTH BY CROSSCUT CANAL, *
                * * TO THE EAST BY CENTER STREET AND SOUTHERN-PACIFIC RAILROAD, AND TO *
                * * THE SOUTH BY US60 (SUPERSTITION) FREEWAY.                       *
                * *                                                                *
                * ******************************************************************
                *
                *   CHANGED: START TIME AND DATE, NO. OF TIME STEPS FROM 2000 TO 600, AND
                *   ADDED NDXMIN OF 2 TO ALL RK RECORDS   MIKE DUNCAN   FCD   05-19-04
                *
1                                          HEC-1 INPUT                                          PAGE 50

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

1911            KK   SB202
1912            KM  RUNOFF FROM SUB-BASIN 202
1913            BA   0.162
1914            IN      15
1915            PB    2.91
1916            KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY TEMPE CANAL TO THE
1917            KM  NORTH AND WEST, SPRR TO THE SOUTH, AND COUNTRY CLUB DR. TO THE EAST.
1918            KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 3.73 SQUARE MILES,
1919            KM  AREAL REDUCTION FACTOR = 0.969
1920            PC   0.000   0.013   0.019   0.028   0.044   0.057   0.068   0.080   0.093   0.106
1921            PC   0.120   0.136   0.158   0.204   0.288   0.466   0.677   0.809   0.878   0.920
1922            PC   0.947   0.961   0.974   0.987   1.000
1923            LG    0.22    0.25     4.8    0.37      45
1924            UC   0.621   0.452
1925            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1926            UA     100
                *

1927            KK   IP208
1928            KM  UNIVERSITY DR & COUNTRY CLUB DR: PIPE FLOW ROUTED NORTH FROM CP208
1929            KM  TO CP202 CREATES A LOOP IN THE HEC-1 MODEL, THEREFORE PIPE FLOW IS
1930            KM  MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
1931            KM  1-36" RCP FLOWS NORTH ALONG COUNTRY CLUB DR.
1932            KM  PIPE CAPACITY = 16 CFS
1933            BA       0
1934            IN      15
1935            QI      16      16      16      16      16      16      16      16      16      16
1936            QI      16      16      16      16      16      16      16      16      16      16
1937            QI      16      16      16      16      16
                *

1938            KK   CP202
1939            KM  8TH ST & COUNTRY CLUB DR: COMBINE SB202, IP208
1940            HC       2
                *

1941            KK    S202
1942            KM  8TH ST & COUNTRY CLUB DR: STREET FLOW S202 VS. PIPE FLOW P202
1943            KM  1-48" RCP FLOWS NORTH ALONG COUNTRY CLUB TO OUT OF STUDY AREA
1944            KM  PIPE CAPACITY = 32 CFS
1945            DT    P202
1946            DI       0      32   10000
1947            DQ       0      32      32
                *

1948            KK   S202W
1949            KM  8TH ST & COUNTRY CLUB DR: STREET FLOW WEST S202W VS. STREET FLOW SOUTH S202S
1950            KM  SURVEYED INTERSECTION
1951            DT   S202S
1952            DI       0      48     319     839    1533    2375    3349    4444    5647    6952
1953            DI    8351
1954            DQ       0      29     167     448     826    1286    1819    2420    3082    3801
1955            DQ    4573
                *
1                                          HEC-1 INPUT                                          PAGE 51

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

1956            KK  RS202W
1957            KM  8TH ST & COUNTRY CLUB DR: ROUTE STREET FLOW S202W WEST TO CHERRY VIA 8TH ST
1958            KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
1959            RS       4    FLOW      -1
1960            RC   0.018   0.018   0.018    1900  0.0017
1961            RX       0       0      17      17      63      63      80      80
1962            RY       4    0.27    0.27       0       0    0.27    0.27       4
                *
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1963          KK   SB203
1964          KM  RUNOFF FROM SUB-BASIN 203
1965          BA   0.179
1966          LG    0.24    0.25    4.80    0.36      40
1967          UC   0.479   0.282
1968          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1969          UA     100
              *

1970          KK   CP203
1971          KM  8TH ST & CHERRY: COMBINE RS202W AND SB203
1972          HC       2
              *

1973          KK    S203
1974          KM  8TH ST & CHERRY: STREET FLOW S203 VS. PIPE FLOW P203
1975          KM  1-48" RCP FLOWS WEST ALONG 8TH ST TO ALMA SCHOOL RD
1976          KM  PIPE CAPACITY = 59 CFS
1977          DT    P203
1978          DI       0      59   10000
1979          DQ       0      59      59
              *

1980          KK   RS203
1981          KM  8TH ST & CHERRY: ROUTE STREET FLOW S203 WEST TO ALMA SCHOOL RD VIA 8TH ST
1982          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
1983          RS       4    FLOW      -1
1984          RC   0.018   0.018   0.018    3120  0.0017
1985          RX       0       0      17      17      63      63      80      80
1986          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1987          KK    P203
1988          KM  8TH ST & CHERRY: RETURN DIVERTED PIPE FLOW FROM CP203
1989          KM  FOR ROUTING WEST TO CP204
1990          DR    P203
              *

1991          KK   RP203
1992          KM  8TH ST & CHERRY: ROUTE PIPE FLOW P203 WEST TO CP204
1993          KM  1-48" RCP FLOWS WEST ALONG 8TH ST TO ALMA SCHOOL RD
1994          KM  PIPE CAPACITY = 59 CFS
1995          RK    3120  0.0017   0.013            CIRC       4                       2
              *
1                                        HEC-1 INPUT                                          PAGE 52

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

1996          KK   SB204
1997          KM  RUNOFF FROM SUB-BASIN 204
1998          BA   0.238
1999          LG    0.23    0.25    4.70    0.37      42
2000          UC   0.596   0.383
2001          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2002          UA     100
              *

2003          KK    D204
2004          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WESTWOOD HIGH SCHOOL.
2005          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE BASEBALL AND TRACK FIELDS.
2006          KM  APPROX. 8 ACRE-FEET OF RETENTION
2007          DT  RET204       8
2008          DI       0   10000
2009          DQ       0   10000
              *

2010          KK   CP204
2011          KM  8TH ST & ALMA SCHOOL RD: COMBINE RS203, RP203, D204
2012          HC       3
              *

2013          KK   S204W
2014          KM  8TH ST & ALMA SCHOOL RD: STREET FLOW NORTH S204N VS. STREET FLOW WEST S204W
2015          KM  SURVEYED INTERSECTION
2016          DT   S204N
2017          DI       0       2      86     553    1388    2494    3829    5372    7100    9000
2018          DI   11058   13264
2019          DQ       0       2      56     353     900    1627    2507    3526    4669    5928
2020          DQ    7293    8758
              *

2021          KK  RS204W
2022          KM  8TH ST & ALMA SCHOOL RD: ROUTE STREET FLOW S204W WEST TO CP206 VIA 8TH ST
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2023          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2024          RS       3    FLOW      -1
2025          RC   0.018   0.018   0.018    2675  0.0049
2026          RX       0       0      17      17      63      63      80      80
2027          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2028          KK   SB206
2029          KM  RUNOFF FROM SUB-BASIN 206
2030          BA   0.139
2031          LG    0.24    0.25    4.60    0.39      34
2032          UC   0.413   0.283
2033          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2034          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 53

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

2035          KK    D206
2036          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WHITTIER ELEMENTARY SCHOOL.
2037          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
2038          KM  APPROX. 4 ACRE-FEET OF RETENTION
2039          DT  RET206       4
2040          DI       0   10000
2041          DQ       0   10000
              *

2042          KK   CP206
2043          KM  8TH ST & LONGMORE: COMBINE RS204W, D206
2044          HC       2
              *

2045          KK   RS206
2046          KM  8TH ST & LONGMORE: ROUTE STREET FLOW CP206 WEST TO TEMPE CANAL VIA 8TH ST
2047          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2048          RS       1    FLOW      -1
2049          RC   0.018   0.018   0.018     470    0.02
2050          RX       0       0      17      17      63      63      80      80
2051          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2052          KK   SB207
2053          KM  RUNOFF FROM SUB-BASIN 207
2054          BA   0.124
2055          LG    0.24    0.25    4.30    0.48      40
2056          UC   0.438   0.374
2057          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2058          UA     100
              *

2059          KK   CP207
2060          KM  8TH ST & TEMPE CANAL: COMBINE RS206, SB207
2061          HC       2
              *

2062          KK   S202S
2063          KM  8TH ST & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S202S
2064          KM  FOR ROUTING SOUTH TO CP208
2065          DR   S202S
              *

2066          KK  RS202S
2067          KM  8TH ST & COUNTRY CLUB DR: ROUTE STREET FLOW S202S SOUTH
2068          KM  TO UNIVERSITY DR VIA COUNTRY CLUB DR
2069          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2070          RS       7    FLOW      -1
2071          RC   0.018   0.018   0.018    2645  0.0008
2072          RX       0       0      21      21     109     109     130     130
2073          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                          HEC-1 INPUT                                          PAGE 54

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

2074          KK   SB208
2075          KM  RUNOFF FROM SUB-BASIN 208
2076          BA   0.165
2077          LG    0.22    0.25    4.80    0.37      40
2078          UC   0.708   0.589
2079          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2080          UA     100
              *
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2081          KK    D208
2082          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WHITTIER ELEMENTARY SCHOOL.
2083          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
2084          KM  APPROX. 4 ACRE-FEET OF RETENTION
2085          DT  RET208       4
2086          DI       0   10000
2087          DQ       0   10000
              *

2088          KK   CP208
2089          KM  UNVERSITY DR & COUNTRY CLUB DR: COMBINE RS202S AND D208
2090          HC       2
              *

2091          KK    S208
2092          KM  UNIVERSITY DR & COUNTRY CLUB DR: STREET FLOW S208 VS. PIPE FLOW P208
2093          KM  1-36" RCP FLOWS NORTH ALONG COUNTRY CLUB TO CP202
2094          KM  PIPE CAPACITY = 16 CFS
2095          DT    P208
2096          DI       0      16   10000
2097          DQ       0      16      16
              *

2098          KK   S208W
2099          KM  UNIVERSITY DR & COUNTRY CLUB DR: STREET FLOW WEST S208W
2100          KM  VS. STREET FLOW SOUTH S208S
2101          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2102          KM  UNIVERSITY DR IS 4-LANE ARTERIAL, COUNTRY CLUB DR IS 6-LANE ARTERIAL
2103          DT   S208S
2104          DI       0      32     306     912    1747    2780    3989    5357    6873    8527
2105          DI   10309
2106          DQ       0      13     118     362     700    1120    1611    2168    2786    3460
2107          DQ    4186
              *

2108          KK  RS208W
2109          KM  UNIVERSITY DR & COUNTRY CLUB DR: ROUTE STREET FLOW S208W WEST
2110          KM  TO EXTENSION RD VIA UNIVERSITY DR
2111          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2112          RS       5    FLOW      -1
2113          RC   0.018   0.018   0.018    2530  0.0017
2114          RX       0       0      31      31      99      99     130     130
2115          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                        HEC-1 INPUT                                          PAGE 55

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

2116          KK   SB209
2117          KM  RUNOFF FROM SUB-BASIN 209
2118          BA   0.195
2119          LG    0.22    0.25    4.80    0.36      41
2120          UC   0.658   0.418
2121          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2122          UA     100
              *

2123          KK   CP209
2124          KM  UNIVERSITY DR & EXTENSION RD: COMBINE RS208W AND SB209
2125          HC       2
              *

2126          KK    S209
2127          KM  UNIVERSITY DR & EXTENSION RD: STREET FLOW S209 VS. PIPE FLOW P209
2128          KM  1-24" RCP FLOWS SOUTH ALONG EXTENSION RD TO CP215
2129          KM  PIPE CAPACITY = 9 CFS
2130          DT    P209
2131          DI       0       9   10000
2132          DQ       0       9       9
              *

2133          KK   RS209
2134          KM  UNIVERSITY DR & EXTENSION RD: ROUTE STREET FLOW S209 WEST
2135          KM  TO ALMA SCHOOL RD VIA UNIVERSITY DR
2136          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2137          RS       5    FLOW      -1
2138          RC   0.018   0.018   0.018    2520  0.0007
2139          RX       0       0      31      31      99      99     130     130
2140          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2141          KK   SB210
2142          KM  RUNOFF FROM SUB-BASIN 210
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```
2143          BA   0.175
2144          LG    0.21    0.25    4.80    0.36      59
2145          UC   0.767   0.622
2146          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2147          UA     100
              *

2148          KK    D210
2149          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WESTWOOD HIGH, CARSON
2150          KM  JUNIOR HIGH, AND EMERSON ELEMENTARY SCHOOLS.  APPROX. 1 FT OF
2151          KM  DEPTH FOR PONDING ON FIELDS.  APPROX. 14 ACRE-FEET OF RETENTION.
2152          DT  RET210      14
2153          DI       0   10000
2154          DQ       0   10000
              *
1                                        HEC-1 INPUT                                        PAGE 56

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


2155          KK   CP210
2156          KM  UNIVERSITY DR & ALMA SCHOOL RD: COMBINE RS209W, D210
2157          HC       2
              *

2158          KK   S210W
2159          KM  UNIVERSITY DR & ALMA SCHOOL RD: STREET FLOW WEST S210W VS.
2160          KM  STREET FLOW SOUTH S210S
2161          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2162          KM  UNIVERSITY DR IS 4-LANE ARTERIAL, ALMA SCHOOL RD IS 6-LANE ARTERIAL
2163          DT   S210S
2164          DI       0      44     409    1220    2341    3725    5346    7180    9212   11430
2165          DI   13820
2166          DQ       0      19     171     523    1013    1619    2330    3135    4028    5003
2167          DQ    6054
              *

2168          KK  RS210W
2169          KM  UNIVERSITY DR & ALMA SCHOOL RD: ROUTE STREET FLOW S210W WEST
2170          KM  TO LONGMORE VIA UNIVERSITY DR
2171          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2172          RS       4    FLOW      -1
2173          RC   0.018   0.018   0.018    2715   0.004
2174          RX       0       0      31      31      99      99     130     130
2175          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2176          KK   SB211
2177          KM  RUNOFF FROM SUB-BASIN 211
2178          BA   0.262
2179          LG    0.21    0.25    5.10    0.32      47
2180          UC   0.683    0.44
2181          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2182          UA     100
              *

2183          KK   CP211
2184          KM  UNIVERSITY DR & LONGMORE: COMBINE RS210W AND SB211
2185          HC       2
              *

2186          KK   RS211
2187          KM  UNIVERSITY DR & LONGMORE: ROUTE COMBINED FLOW CP211 WEST
2188          KM  TO DOBSON RD VIA UNIVERSITY DR
2189          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2190          RS       3    FLOW      -1
2191          RC   0.018   0.018   0.018    2750   0.005
2192          RX       0       0      31      31      99      99     130     130
2193          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                        HEC-1 INPUT                                        PAGE 57

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


2194          KK   SB212
2195          KM  RUNOFF FROM SUB-BASIN 212
2196          BA   0.207
2197          LG    0.21    0.25    4.70    0.38      46
2198          UC   0.538   0.389
2199          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2200          UA     100
              *

2201          KK    D212
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KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WEBSTER ELEMENTARY SCHOOL.
KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
KM  APPROX. 2 ACRE-FEET OF RETENTION
DT  RET212       2
DI       0   10000
DQ       0   10000
*

KK   IP213
KM  UNIVERSITY DR & TEMPE CANAL: PIPE FLOW ROUTED EAST FROM CP213 TO
KM  CP212 CREATES A LOOP IN THE HEC-1 MODEL, THEREFORE PIPE FLOW IS
KM  MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
KM  1-24" RCP FLOWS EAST ALONG UNIVERSITY DR.
KM  PIPE CAPACITY = 11 CFS
BA       0
IN      15
QI      11      11      11      11      11      11      11      11      11      11
QI      11      11      11      11      11      11      11      11      11      11
QI      11      11      11      11      11
*

KK   IP218
KM  MAIN ST & DOBSON RD: PIPE FLOW ROUTED NORTH FROM CP218 TO
KM  CP212 CREATES A LOOP IN THE HEC-1 MODEL, THEREFORE PIPE FLOW IS
KM  MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
KM  1-54" RCP FLOWS NORTH ALONG DOBSON RD.
KM  PIPE CAPACITY = 99 CFS
BA       0
IN      15
QI      99      99      99      99      99      99      99      99      99      99
QI      99      99      99      99      99      99      99      99      99      99
QI      99      99      99      99      99
*

KK   CP212
KM  UNIVERSITY DR & DOBSON RD: COMBINE RS211, D212, IP213, IP218
HC       4
*
```

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

KK    S212
KM  UNIVERSITY DR & DOBSON RD: STREET FLOW S212 VS. PIPE FLOW P212
KM  1-54" RCP FLOWS NORTH ALONG DOBSON RD TO OUT OF STUDY AREA
KM  PIPE CAPACITY = 99 CFS
DT    P212
DI       0      99   10000
DQ       0      99      99
*

KK   RS212
KM  UNIVERSITY DR & DOBSON RD: ROUTE STREET FLOW S212 WEST
KM  TO TEMPE CANAL VIA UNIVERSITY DR
KM  4-LANE ARTERIAL STREET ROUTING SECTION
RS       1    FLOW      -1
RC   0.018   0.018   0.018     825  0.0055
RX       0       0      31      31      99      99     130     130
RY       4    0.18    0.18       0       0    0.18    0.18       4
*

KK   SB213
KM  RUNOFF FROM SUB-BASIN 213
BA   0.189
LG    0.25    0.25    4.15    0.51      32
UC   0.571   0.476
UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
UA     100
*

KK   CP213
KM  TEMPE CANAL & UNIVERSITY DR: COMBINE RS212, SB213
HC       2
*

KK    S213
KM  UNIVERSITY DR & TEMPE CANAL: FLOW S213 VS. PIPE FLOW P213
KM  1-24" RCP FLOWS EAST ALONG UNIVERISTY DR TO CP212
KM  PIPE CAPACITY = 11 CFS
DT    P213
DI       0      11   10000
DQ       0      11      11
*
```

```
2265          KK     CPA
2266          KM  COMBINE CP207 AND S213 IN ORDER TO REDUCE THE NUMBER OF HYDROGRAPHS
2267          KM  IN THE MODEL.  CPA IS NOT REPRESENTATIVE OF A PHYSICAL CONCENTRATION
2268          KM  POINT.
2269          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 59

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


2270          KK   S208S
2271          KM  UNIVERSITY DR & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S208S
2272          KM  FOR ROUTING SOUTH TO CP214
2273          DR   S208S
              *

2274          KK  RS208S
2275          KM  UNIVERSITY DR & COUNTRY CLUB DR: ROUTE STREET FLOW S208S SOUTH
2276          KM  TO MAIN ST VIA COUNTRY CLUB DR
2277          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2278          RS       6    FLOW      -1
2279          RC   0.018   0.018   0.018    2650  0.0015
2280          RX       0       0      21      21     109     109     130     130
2281          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2282          KK   SB214
2283          KM  RUNOFF FROM SUB-BASIN 214
2284          BA   0.169
2285          LG    0.18    0.25    4.80    0.38      58
2286          UC   0.729   0.594
2287          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2288          UA     100
              *

2289          KK   CP214
2290          KM  MAIN ST & COUNTRY CLUB DR: COMBINE RS208S, SB214
2291          HC       2
              *

2292          KK   S214W
2293          KM  MAIN ST & COUNTRY CLUB DR: STREET FLOW WEST S214W VS. STREET FLOW SOUTH S214S
2294          KM  SURVEYED INTERSECTION
2295          DT   S214S
2296          DI       0       4      80     374     935    1767    2819    4056    5458    7013
2297          DI    8710   10538
2298          DQ       0       4      66     285     621    1050    1560    2144    2794    3507
2299          DQ    4278    5103
              *

2300          KK  RS214W
2301          KM  MAIN ST & COUNTRY CLUB DR: ROUTE STREET FLOW S214W WEST
2302          KM  TO EXTENSION RD VIA MAIN ST
2303          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2304          RS       6    FLOW      -1
2305          RC   0.018   0.018   0.018    2540  0.0011
2306          RX       0       0      31      31      99      99     130     130
2307          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                          HEC-1 INPUT                                          PAGE 60

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


2308          KK    P209
2309          KM  UNIVERSITY DR & EXTENSION RD: RETURN DIVERTED PIPE FLOW FROM CP209
2310          KM  FOR ROUTING SOUTH TO CP215
2311          DR    P209
              *

2312          KK   RP209
2313          KM  UNIVERSITY DR & EXTENSION RD: ROUTE PIPE FLOW P209 SOUTH TO CP215
2314          KM  1-24" RCP FLOWS SOUTH ALONG EXTENSION RD TO MAIN ST
2315          KM  PIPE CAPACITY = 9 CFS
2316          RK    2640  0.0016   0.013            CIRC       2                       2
              *

2317          KK   SB215
2318          KM  RUNOFF FROM SUB-BASIN 215
2319          BA   0.165
2320          LG    0.21    0.25    4.90    0.35      43
2321          UC   0.746   0.593
2322          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2323          UA     100
```

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                *

2324            KK   CP215
2325            KM  MAIN ST & EXTENSION RD: COMBINE RS214W, RP209, SB215
2326            HC       3
                *

2327            KK   S215W
2328            KM  MAIN ST & EXTENSION RD: STREET FLOW WEST S215W VS. STREET FLOW SOUTH S215S
2329            KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2330            KM  EXTENSION RD IS 80-FT ROW COLLECTOR, MAIN ST IS 4-LANE ARTERIAL
2331            DT   S215S
2332            DI       0      34     287     801    1501    2359    3357    4483    5725    7076
2333            DI    8531
2334            DQ       0      18     130     343     628     974    1374    1823    2316    2850
2335            DQ    3424
                *

2336            KK  RS215W
2337            KM  MAIN ST & EXTENSION RD: ROUTE STREET FLOW S215W WEST
2338            KM  TO ALMA SCHOOL RD VIA MAIN ST
2339            KM  4-LANE ARTERIAL STREET ROUTING SECTION
2340            RS       5    FLOW      -1
2341            RC   0.018   0.018   0.018    2530  0.0016
2342            RX       0       0      31      31      99      99     130     130
2343            RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

2344            KK   S210S
2345            KM  UNIVERSITY DR & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S210S
2346            KM  FOR ROUTING SOUTH TO CP216
2347            DR   S210S
                *
1                                          HEC-1 INPUT                                          PAGE 61

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

2348            KK  RS210S
2349            KM  UNIVERSITY DR & ALMA SCHOOL RD: ROUTE STREET FLOW S210S SOUTH
2350            KM  TO MAIN ST VIA ALMA SCHOOL RD
2351            KM  6-LANE ARTERIAL STREET ROUTING SECTION
2352            RS       5    FLOW      -1
2353            RC   0.018   0.018   0.018    2630  0.0015
2354            RX       0       0      21      21     109     109     130     130
2355            RY       4    0.14    0.14       0       0    0.14    0.14       4
                *

2356            KK   SB216
2357            KM  RUNOFF FROM SUB-BASIN 216
2358            BA   0.238
2359            LG    0.21    0.17    6.80    0.16      47
2360            UC   0.646   0.423
2361            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2362            UA     100
                *

2363            KK   CP216
2364            KM  MAIN ST & ALMA SCHOOL RD: COMBINE RS215W, RS210S, SB216
2365            HC       3
                *

2366            KK   S216W
2367            KM  MAIN ST & ALMA SCHOOL RD: STREET FLOW WEST S216W VS. STREET FLOW SOUTH S216S
2368            KM  SURVEYED INTERSECTION
2369            DT   S216S
2370            DI       0      18     174     705    1622    2853    4340    6054    7977   10093
2371            DI   12389   14851
2372            DQ       0       0      37     251     683    1302    2065    2955    3961    5074
2373            DQ    6286    7590
                *

2374            KK  RS216W
2375            KM  MAIN ST & ALMA SCHOOL RD: ROUTE STREET FLOW S216W WEST
2376            KM  TO LONGMORE VIA MAIN ST
2377            KM  6-LANE ARTERIAL STREET ROUTING SECTION
2378            RS       3    FLOW      -1
2379            RC   0.018   0.018   0.018    2700  0.0026
2380            RX       0       0      21      21     109     109     130     130
2381            RY       4    0.14    0.14       0       0    0.14    0.14       4
                *

2382            KK   SB217
2383            KM  RUNOFF FROM SUB-BASIN 217
2384            BA   0.112
```

```
2385          LG    0.20    0.25    4.90    0.36      47
2386          UC   0.579   0.492
2387          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2388          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 62

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


2389          KK   CP217
2390          KM  MAIN ST & LONGMORE: COMBINE RS216W AND SB217
2391          HC       2
              *

2392          KK    S217
2393          KM  MAIN ST & LONGMORE: STREET FLOW S217 VS. PIPE FLOW P217
2394          KM  1-18" RCP FLOWS WEST ALONG MAIN ST TO CP218
2395          KM  PIPE CAPACITY = 5 CFS
2396          DT    P217
2397          DI       0       5   10000
2398          DQ       0       5       5
              *

2399          KK   S217W
2400          KM  MAIN ST & LONGMORE: STREET FLOW WEST S217W VS. STREET FLOW SOUTH S217S
2401          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2402          KM  LONGMORE IS 60-FT ROW COLLECTOR, MAIN ST IS 6-LANE ARTERIAL
2403          DT   S217S
2404          DI       0      51     372    1068    2022    3195    4561    6104    7808    9662
2405          DI   11656
2406          DQ       0      24     133     337     606     930    1302    1718    2173    2664
2407          DQ    3188
              *

2408          KK  RS217W
2409          KM  MAIN ST & LONGMORE: ROUTE STREET FLOW S217W WEST
2410          KM  TO DOBSON RD VIA MAIN ST
2411          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2412          RS       3    FLOW      -1
2413          RC   0.018   0.018   0.018    2745  0.0036
2414          RX       0       0      21     109     109     130     130
2415          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2416          KK    P217
2417          KM  MAIN ST & LONGMORE: RETURN DIVERTED PIPE FLOW FROM CP217
2418          KM  FOR ROUTING WEST TO CP218
2419          DR    P217
              *

2420          KK   RP217
2421          KM  MAIN ST & LONGMORE: ROUTE PIPE FLOW P217 WEST TO CP218
2422          KM  1-18" RCP FLOWS WEST ALONG MAIN ST TO DOBSON RD
2423          KM  PIPE CAPACITY = 5 CFS
2424          RK    2745  0.0027   0.013            CIRC     1.5                        2
              *

2425          KK   SB218
2426          KM  RUNOFF FROM SUB-BASIN 218
2427          BA   0.056
2428          LG    0.17    0.25    4.80    0.39      56
2429          UC    0.55   0.698
2430          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1                                          HEC-1 INPUT                                          PAGE 63

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

2431          UA     100
              *

2432          KK   CP218
2433          KM  MAIN ST & DOBSON RD: COMBINE RS217W, RP217, SB218
2434          HC       3
              *

2435          KK    S218
2436          KM  MAIN ST & DOBSON RD: STREET FLOW S218 VS. PIPE FLOW P218
2437          KM  1-54" RCP FLOWS NORTH ALONG DOBSON RD TO CP212
2438          KM  PIPE CAPACITY = 99 CFS
2439          DT    P218
2440          DI       0      99   10000
2441          DQ       0      99      99
              *
```

```
2442          KK   RS218
2443          KM  MAIN ST & DOBSON RD: ROUTE STREET FLOW S218W WEST
2444          KM  TO TEMPE CANAL VIA MAIN ST
2445          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2446          RS       4    FLOW      -1
2447          RC   0.018   0.018   0.018    3065  0.0047
2448          RX       0       0      21      21     109     109     130     130
2449          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2450          KK   SB219
2451          KM  RUNOFF FROM SUB-BASIN 219
2452          BA   0.177
2453          LG    0.24    0.25    4.50    0.42      36
2454          UC   0.508   0.336
2455          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2456          UA     100
              *

2457          KK   CP219
2458          KM  TEMPE CANAL & MAIN ST: COMBINE RS218, SB219
2459          HC       2
              *

2460          KK   BS219
2461          KM  RETENTION STORAGE ALONG TEMPE CANAL, NORTH OF MAIN ST
2462          KM  CONTOUR AREAS MEASURED FOR VOLUME CALCULATIONS WERE REDUCED BY
2463          KM  THE BUILDING SQUARE FOOTAGES.  OUTFLOW FROM UNEVEN WEIR CALCULATION
2464          KM  BASED ON TEMPE CANAL AND MAIN ST SURVEYED ELEVATIONS
2465          RS       1    STOR       0
2466          SA     2.4     8.8      15
2467          SE    1204    1205    1206
2468          SQ       0     160    4187
              *
1                                   HEC-1 INPUT                                    PAGE 64

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

2469          KK   S215S
2470          KM  MAIN ST & EXTENSION RD: RETURN DIVERTED STREET FLOW S215S
2471          KM  FOR ROUTING SOUTH TO CP221
2472          DR   S215S
              *

2473          KK  RS215S
2474          KM  MAIN ST & EXTENSION RD: ROUTE STREET FLOW S215S SOUTH
2475          KM  TO RAILROAD VIA EXTENSION RD
2476          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2477          RS       3    FLOW      -1
2478          RC   0.018   0.018   0.018    1490  0.0022
2479          RX       0       0      17      17      63      63      80      80
2480          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2481          KK   SB221
2482          KM  RUNOFF FROM SUB-BASIN 221
2483          BA   0.085
2484          LG    0.17    0.25    4.80    0.39      60
2485          UC   0.458    0.37
2486          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2487          UA     100
              *

2488          KK   CP221
2489          KM  RAILROAD & EXTENSION RD: COMBINE RS215S, SB221
2490          HC       2
              *

2491          KK   RC221
2492          KM  RAILROAD & EXTENSION RD: ROUTE FLOW CP221 WEST
2493          KM  TO ALMA SCHOOL RD ALONG THE RAILROAD
2494          RS       3    FLOW      -1
2495          RC    0.03    0.03    0.03    2540   0.002
2496          RX       0       0       5      20      30    32.5      33      33
2497          RY       5       4       4       0       0       1       1       6
              *

2498          KK   S216S
2499          KM  MAIN ST & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S216S
2500          KM  FOR ROUTING SOUTH TO CP222
2501          DR   S216S
              *

2502          KK  RS216S
```

```
2503          KM  MAIN ST & ALMA SCHOOL RD: ROUTE STREET FLOW S216S SOUTH
2504          KM  TO RAILROAD VIA ALMA SCHOOL RD
2505          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2506          RS       2    FLOW      -1
2507          RC   0.018   0.018   0.018    1325   0.002
2508          RX       0       0      21      21     109     109     130     130
2509          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                          HEC-1 INPUT                                                    PAGE 65

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


2510          KK   SB222
2511          KM  RUNOFF FROM SUB-BASIN 222
2512          BA   0.123
2513          LG    0.15    0.25    4.80    0.40      64
2514          UC   0.579   0.472
2515          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2516          UA     100
              *

2517          KK   CP222
2518          KM  RAILROAD & ALMA SCHOOL RD: COMBINE RC221, RS216S, AND SB222
2519          HC       3
              *

2520          KK   RC222
2521          KM  RAILROAD & ALMA SCHOOL RD: ROUTE FLOW CP222 WEST
2522          KM  TO LONGMORE ALONG THE RAILROAD
2523          RS       2    FLOW      -1
2524          RC    0.03    0.03    0.03    2700   0.002
2525          RX       0       0       5      20      30    32.5      33      33
2526          RY       5       4       4       0       0       1       1       6
              *

2527          KK   S217S
2528          KM  MAIN ST & LONGMORE: RETURN DIVERTED STREET FLOW S217S
2529          KM  FOR ROUTING SOUTH TO CP223
2530          DR   S217S
              *

2531          KK  RS217S
2532          KM  MAIN ST & LONGMORE: ROUTE STREET FLOW S217S SOUTH TO RAILROAD VIA LONGMORE
2533          KM  60-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2534          RS       2    FLOW      -1
2535          RC   0.018   0.018   0.018    1325   0.003
2536          RX       0       0      13      13      47      47      60      60
2537          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

2538          KK   SB223
2539          KM  RUNOFF FROM SUB-BASIN 223
2540          BA   0.128
2541          LG    0.15    0.26    4.80    0.37      69
2542          UC   0.508   0.414
2543          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2544          UA     100
              *

2545          KK    D223
2546          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT EAST VALLEY INSTITUTE OF
2547          KM  TECHNOLOGY.  APPROX. AVERAGE 2.5 FT DEPTH FOR PONDING WITHIN LARGE
2548          KM  RETENTION BASINS AT SOUTH AND EAST ENDS OF CAMPUS.
2549          KM  APPROX. 6 ACRE-FEET OF RETENTION.
2550          DT  RET223       6
2551          DI       0   10000
1                                          HEC-1 INPUT                                                    PAGE 66

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

2552          DQ       0   10000
              *

2553          KK   CP223
2554          KM  RAILROAD & LONGMORE: COMBINE RC222, RS217S, AND D223
2555          HC       3
              *

2556          KK   RC223
2557          KM  RAILROAD & LONGMORE: ROUTE FLOW CP223 WEST
2558          KM  TO DOBSON RD ALONG THE RAILROAD
2559          RS       2    FLOW      -1
2560          RC    0.03    0.03    0.03    2740   0.002
2561          RX       0       0       5      20      30    32.5      33      33
```

```
2562          RY       5       4       4       0       0       1       1       6
              *

2563          KK   SB224
2564          KM  RUNOFF FROM SUB-BASIN 224
2565          BA   0.131
2566          LG    0.14    0.25    4.80    0.39      64
2567          UC   0.575   0.457
2568          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2569          UA     100
              *

2570          KK    D224
2571          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT EAST VALLEY ACADEMY.
2572          KM  APPROX. AVERAGE 2.5 FT DEPTH FOR PONDING WITHIN LARGE
2573          KM  RETENTION BASINS AT WEST END OF CAMPUS.
2574          KM  APPROX. 5 ACRE-FEET OF RETENTION.
2575          DT  RET224       5
2576          DI       0   10000
2577          DQ       0   10000
              *

2578          KK   CP224
2579          KM  RAILROAD & DOBSON RD: COMBINE RC223 AND D224
2580          HC       2
              *

2581          KK   RC224
2582          KM  RAILROAD & DOBSON RD: ROUTE FLOW S224 WEST TO
2583          KM  TEMPE CANAL ALONG THE RAILROAD
2584          RS       3    FLOW      -1
2585          RC    0.03    0.03    0.03    4160   0.003
2586          RX       0       0       5      20      30    32.5      33      33
2587          RY       5       4       4       0       0       1       1       6
              *
1                                        HEC-1 INPUT                                          PAGE 67

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

2588          KK   SB225
2589          KM  RUNOFF FROM SUB-BASIN 225
2590          BA   0.174
2591          LG    0.22    0.25    4.80    0.36      50
2592          UC   0.663    0.63
2593          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2594          UA     100
              *

2595          KK   CP225
2596          KM  RAILROAD & TEMPE CANAL: COMBINE RC224, SB225
2597          HC       2
              *

2598          KK   BS225
2599          KM  RETENTION STORAGE ALONG TEMPE CANAL, NORTH OF RAILROAD.
2600          KM  CONTOUR AREAS MEASURED FOR VOLUME CALCULATIONS WERE REDUCED BY
2601          KM  THE BUILDING SQUARE FOOTAGES.  OUTFLOW FROM UNEVEN WEIR CALCULATION BASED
2602          KM  ON TEMPE CANAL AND RAILROAD SURVEYED ELEVATIONS.
2603          RS       1    STOR       0
2604          SA     0.4     0.7       8    16.5
2605          SE    1200    1202    1204    1205
2606          SQ       0       0     324    4116
              *

2607          KK     CPB
2608          KM  COMBINE BS219 AND BS225 IN ORDER TO REDUCE THE NUMBER OF HYDROGRAPHS
2609          KM  IN THE MODEL.  CPB IS NOT REPRESENTATIVE OF A PHYSICAL CONCENTRATION
2610          KM  POINT.
2611          HC       2
              *

2612          KK     CPC
2613          KM  COMBINE CPA AND CPB IN ORDER TO REDUCE THE NUMBER OF HYDROGRAPHS
2614          KM  IN THE MODEL.  CPC IS NOT REPRESENTATIVE OF A PHYSICAL CONCENTRATION
2615          KM  POINT.
2616          HC       2
              *

2617          KK   SB226
2618          KM  RUNOFF FROM SUB-BASIN 226
2619          BA   0.051
2620          PB    2.92
2621          KM  AREA REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
2622          KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
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2623          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.82 SQUARE MILES
2624          KM  AREAL REDUCTION FACTOR = 0.975
2625          LG    0.15    0.25    4.80    0.35      70
2626          UC   0.729   0.855
2627          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2628          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE 68

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


2629          KK   S226W
2630          KM  EXTENSION RD & BROADWAY RD: STREET FLOW WEST S226W VS. STREET FLOW SOUTH S226S
2631          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2632          KM  EXTENSION IS 80-FT ROW COLLECTOR, BROADWAY IS 4-LANE ARTERIAL
2633          DT   S226S
2634          DI       0      33     266     738    1375    2156    3063    4086    5213    6440
2635          DI    7757
2636          DQ       0      21     149     394     720    1117    1576    2091    2656    3270
2637          DQ    3927
              *

2638          KK  RS226W
2639          KM  EXTENSION RD & BROADWAY RD: ROUTE STREET FLOW S226W WEST
2640          KM  TO ALMA SCHOOL RD VIA BROADWAY RD
2641          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2642          RS       7    FLOW      -1
2643          RC   0.018   0.018   0.018    2525  0.0018
2644          RX       0       0      31      31      99      99     130     130
2645          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2646          KK   SB227
2647          KM  RUNOFF FROM SUB-BASIN 227
2648          BA   0.117
2649          LG    0.13    0.25    4.80    0.39      72
2650          UC   0.629   0.552
2651          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2652          UA     100
              *

2653          KK   CP227
2654          KM  BROADWAY RD & ALMA SCHOOL RD: COMBINE RS226W, AND SB227
2655          HC       2
              *

2656          KK    S227
2657          KM  BROADWAY RD & ALMA SCHOOL RD: STREET FLOW S227 VS. PIPE FLOW P227
2658          KM  1-30" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO CP234
2659          KM  PIPE CAPACITY = 21 CFS
2660          DT    P227
2661          DI       0      21   10000
2662          DQ       0      21      21
              *

2663          KK   S227W
2664          KM  BROADWAY RD & ALMA SCHOOL RD: STREET FLOW WEST S227W VS.
2665          KM  STREET FLOW SOUTH S227S
2666          KM  SURVEYED INTERSECTION
2667          DT   S227S
2668          DI       0      16     152     619    1385    2378    3570    4939    6471    8153
2669          DI    9974
2670          DQ       0      16     135     488     996    1634    2388    3245    4199    5241
2671          DQ    6366
              *
1                                        HEC-1 INPUT                                          PAGE 69

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


2672          KK  RS227W
2673          KM  BROADWAY RD & ALMA SCHOOL RD: ROUTE STREET FLOW S227W WEST
2674          KM  TO LONGMORE VIA BROADWAY RD
2675          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2676          RS       7    FLOW      -1
2677          RC   0.018   0.018   0.018    2730  0.0027
2678          RX       0       0      31      31      99      99     130     130
2679          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2680          KK   SB228
2681          KM  RUNOFF FROM SUB-BASIN 228
2682          BA   0.129
2683          PB    2.92
```

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2684        KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
2685        KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
2686        KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.73 SQUARE MILES
2687        KM  AREAL REDUCTION FACTOR = 0.975
2688        LG    0.10    0.26    4.80    0.41      74
2689        UC   0.579   0.521
2690        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2691        UA     100
            *

2692        KK   CP228
2693        KM  BROADWAY RD & LONGMORE: COMBINE RS227W, SB228
2694        HC       2
            *

2695        KK   S228W
2696        KM  BROADWAY RD & LONGMORE: STREET FLOW WEST S228W VS. STREET FLOW SOUTH S228S
2697        KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2698        KM  BROADWAY RD IS 4-LANE ARTERIAL, LONGMORE IS 80-FT ROW COLLECTOR
2699        DT   S228S
2700        DI       0      36     313     887    1671    2635    3757    5024    6425    7950
2701        DI    9591
2702        DQ       0      13      95     249     456     707     997    1322    1680    2068
2703        DQ    2483
            *

2704        KK  RS228W
2705        KM  BROADWAY RD & LONGMORE: ROUTE STREET FLOW S228W WEST
2706        KM  TO DOBSON RD VIA BROADWAY RD
2707        KM  4-LANE ARTERIAL STREET ROUTING SECTION
2708        RS       5    FLOW      -1
2709        RC   0.018   0.018   0.018    2715  0.0024
2710        RX       0       0      31      31      99      99     130     130
2711        RY       4    0.18    0.18       0       0    0.18    0.18       4
            *
1                                        HEC-1 INPUT                                        PAGE 70

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

2712        KK   SB229
2713        KM  RUNOFF FROM SUB-BASIN 229
2714        BA   0.129
2715        LG    0.10    0.28    4.80    0.37      55
2716        UC   0.613   0.513
2717        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2718        UA     100
            *

2719        KK   CP229
2720        KM  BROADWAY RD & DOBSON RD: COMBINE RS228W, AND SB229
2721        HC       2
            *

2722        KK    S229
2723        KM  BROADWAY RD & DOBSON RD: STREET FLOW S229 VS. PIPE FLOW P229
2724        KM  1-27" RCP FLOWS SOUTH ALONG DOBSON RD TO 8TH AVE
2725        KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 14 CFS.  PIPE CAPACITY
2726        KM  WAS REDUCED TO 13.9 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
2727        KM  DUE TO A SURCHARGED FLOW CONDITION AT 14.0 CFS.
2728        DT    P229
2729        DI       0    13.9   10000
2730        DQ       0    13.9    13.9
            *

2731        KK   S229W
2732        KM  BROADWAY RD & DOBSON RD: STREET FLOW WEST S229W VS. STREET FLOW SOUTH S229S
2733        KM  SURVEYED INTERSECTION
2734        DT   S229S
2735        DI       0      21     224     841    1753    2962    4401    6048    7885    9898
2736        DI   12076
2737        DQ       0       6      94     395     839    1430    2135    2943    3845    4834
2738        DQ    5904
            *

2739        KK  RS229W
2740        KM  BROADWAY RD & DOBSON RD: ROUTE STREET FLOW S229W WEST
2741        KM  TO TEMPE CANAL VIA BROADWAY RD
2742        KM  6-LANE ARTERIAL STREET ROUTING SECTION
2743        RS       6    FLOW      -1
2744        RC   0.018   0.018   0.018    4165  0.0027
2745        RX       0       0      21      21     109     109     130     130
2746        RY       4    0.14    0.14       0       0    0.14    0.14       4
            *
```

```
2747          KK   SB230
2748          KM  RUNOFF FROM SUB-BASIN 230
2749          BA   0.202
2750          LG    0.13    0.25    4.80    0.41      78
2751          UC   0.613   0.530
2752          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2753          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 71

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

2754          KK   CP230
2755          KM  TEMPE CANAL & BROADWAY RD: COMBINE RS229W, SB230
2756          HC       2
              *

2757          KK    S230
2758          KM  TEMPE CANAL & BROADWAY RD: OVERLAND FLOW S230 VS. PIPE FLOW P230
2759          KM  1-48" RCP FLOWS UNDER TEMPE CANAL AND OUT OF STUDY AREA
2760          KM  PIPE CAPACITY = 84 CFS
2761          DT    P230
2762          DI       0      84   10000
2763          DQ       0      84      84
              *

2764          KK   BS230
2765          KM  RETENTION STORAGE ALONG TEMPE CANAL, NORTH OF BROADWAY RD.
2766          KM  CONTOUR AREAS MEASURED FOR VOLUME CALCULATIONS WERE REDUCED BY
2767          KM  THE BUILDING SQUARE FOOTAGES.  OUTFLOW FROM UNEVEN WEIR CALCULATION BASED
2768          KM  ON TEMPE CANAL AND BROADWAY RD SURVEYED ELEVATIONS.
2769          RS       1    STOR       0
2770          SA       3      11      20
2771          SE    1202    1203    1204
2772          SQ       3     706    4218
              *

2773          KK   RC230
2774          KM  ROUTE FLOW SOUTH FROM BROADWAY RD ALONG EL DORADO CIRCLE TO 8TH AVE.
2775          RS       3    FLOW      -1
2776          RC    0.08    0.03    0.08    2790  0.0015
2777          RX       0     600     865     865     900     900    1100    1110
2778          RY       4       2       1       0       0       1       2       4
              *

2779          KK   S214S
2780          KM  MAIN ST & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S214S
2781          KM  FOR ROUTING SOUTH TO CP220
2782          DR   S214S
              *

2783          KK  RS214S
2784          KM  MAIN ST & COUNTRY CLUB DR: ROUTE STREET FLOW S214S SOUTH
2785          KM  TO DIP SECTION AT RAILROAD VIA COUNTRY CLUB DR
2786          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2787          RS       4    FLOW      -1
2788          RC   0.018   0.018   0.018    2350  0.0019
2789          RX       0       0      21      21     109     109     130     130
2790          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                          HEC-1 INPUT                                          PAGE 72

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

2791          KK   SB220
2792          KM  RUNOFF FROM SUB-BASIN 220
2793          BA   0.191
2794          PB    2.92
2795          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
2796          KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
2797          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.82 SQUARE MILES
2798          KM  AREAL REDUCTION FACTOR = 0.975
2799          LG    0.15    0.25    4.80    0.39      63
2800          UC   0.525   0.292
2801          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2802          UA     100
              *

2803          KK   CP220
2804          KM  RAILROAD & COUNTRY CLUB DR: COMBINE RS214S, SB2220
2805          HC       2
              *
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2806          KK    P220
2807          KM  RAILROAD & COUNTRY CLUB DR: DIVERT FLOW AT CP220 TO PIPE FLOW P220
2808          KM  1-48" RCP FLOWS SOUTH ALONG COUNTRY CLUB TO 8TH AVE
2809          KM  PIPE CAPACITY = 69 CFS
2810          DT    S220
2811          DI       0      69   10000
2812          DQ       0       0    9931
              *

2813          KK   RP220
2814          KM  RAILROAD & COUNTRY CLUB DR: ROUTE PIPE FLOW P220 SOUTH TO CP232
2815          KM  1-48" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO 8TH AVE
2816          KM  PIPE CAPACITY = 69 CFS
2817          RK    2640  0.0023   0.013            CIRC       4                      2
              *

2818          KK   SB231
2819          KM  RUNOFF FROM SUB-BASIN 231
2820          BA   0.079
2821          LG    0.17    0.26    4.80    0.38      74
2822          UC   0.542   0.543
2823          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2824          UA     100
              *

2825          KK    P231
2826          KM  8TH AVE & RAILROAD: PIPE FLOW P231 VS. OVERLAND FLOW S231
2827          KM  1-36" RCP FLOWS WEST ALONG 8TH AVE TO COUNTRY CLUB DR
2828          KM  PIPE CAPACITY = 25 CFS
2829          DT    S231
2830          DI       0      25   10000
2831          DQ       0       0    9975
              *
1                                          HEC-1 INPUT                                    PAGE 73

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

2832          KK   RP231
2833          KM  8TH AVE & RAILROAD: ROUTE PIPE FLOW WEST TO CP232
2834          KM  1-36" RCP FLOWS WEST ALONG 8TH AVE TO COUNTRY CLUB DR
2835          KM  PIPE CAPACITY = 25 CFS
2836          RK    2570  0.0014   0.013            CIRC       3                      2
              *

2837          KK   SB232
2838          KM  RUNOFF FROM SUB-BASIN 232
2839          BA   0.188
2840          LG    0.20    0.25    4.80    0.37      48
2841          UC   0.671   0.536
2842          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2843          UA     100
              *

2844          KK    D232
2845          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT BOYS & GIRLS CLUB.
2846          KM  APPROX. AVERAGE 2.5 FT OF DEPTH FOR PONDING ON THE GRASSED AREA.
2847          KM  APPROX. 4 ACRE-FEET OF RETENTION
2848          DT  RET232       4
2849          DI       0   10000
2850          DQ       0   10000
              *

2851          KK   CP232
2852          KM  8TH AVE & COUNTRY CLUB DR: COMBINE RP231, RP220, SB232
2853          HC       3
              *

2854          KK    S232
2855          KM  8TH AVE & COUNTRY CLUB DR: STREET FLOW S232 VS. PIPE FLOW P232
2856          KM  1-60" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO CP239
2857          KM  PIPE CAPACITY = 138 CFS
2858          DT    P232
2859          DI       0     138   10000
2860          DQ       0     138     138
              *

2861          KK   S232W
2862          KM  8TH AVE & COUNTRY CLUB DR: STREET FLOW WEST S232W VS. STREET FLOW SOUTH S232S
2863          KM  SURVEYED INTERSECTION
2864          DT   S232S
2865          DI       0      37     303     922    1796    2880    4147    5581    7166    8890
2866          DI   10745
2867          DQ       0      37     232     639    1190    1865    2648    3531    4504    5562
2868          DQ    6699
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                *
1                                   HEC-1 INPUT                                                          PAGE 74

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

                KK  RS232W
                KM  8TH AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S232W WEST
                KM  TO EXTENSION RD VIA 8TH AVE
                KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
                RS      16    FLOW      -1
                RC   0.018   0.018   0.018    2585  0.0002
                RX       0       0      17      17      63      63      80      80
                RY       4    0.27    0.27       0       0    0.27    0.27       4
                *

                KK   S226S
                KM  BROADWAY RD & EXTENSION RD: RETURN DIVERTED STREET FLOW S226S
                KM  FOR ROUTING SOUTH TO CP233
                DR   S226S
                *

                KK  RS226S
                KM  BROADWAY RD & EXTENSION RD: ROUTE STREET FLOW S226S SOUTH
                KM  TO 8TH AVE VIA EXTENSION RD
                KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
                RS       4    FLOW      -1
                RC   0.018   0.018   0.018    2635  0.0038
                RX       0       0      17      17      63      63      80      80
                RY       4    0.27    0.27       0       0    0.27    0.27       4
                *

                KK   SB233
                KM  RUNOFF FROM SUB-BASIN 233
                BA   0.242
                LG    0.21    0.25    4.80    0.37      49
                UC   0.758   0.562
                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
                UA     100
                *

                KK   CP233
                KM  8TH AVE & EXTENSION RD: COMBINE RS226S, RS232W, SB233
                HC       3
                *

                KK   S233W
                KM  8TH AVE & EXTENSION RD: STREET FLOW WEST S233W VS. STREET FLOW SOUTH S233S
                KM  SURVEYED INTERSECTION
                DT   S233S
                DI       0      44     360     967    1781    2771    3917    5202    6615    8146
                DI    9786
                DQ       0      23     198     556    1041    1633    2320    3092    3942    4863
                DQ    5851
                *
1                                   HEC-1 INPUT                                                          PAGE 75

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

                KK  RS233W
                KM  8TH AVE & EXTENSION RD: ROUTE STREET FLOW S233W WEST
                KM  TO ALMA SCHOOL RD VIA 8TH AVE
                KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
                RS       4    FLOW      -1
                RC   0.018   0.018   0.018    2575  0.0016
                RX       0       0      17      17      63      63      80      80
                RY       4    0.27    0.27       0       0    0.27    0.27       4
                *

                KK   SB234
                KM  RUNOFF FROM SUB-BASIN 234
                BA   0.242
                LG    0.21    0.25    4.80    0.38      41
                UC   0.708   0.507
                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
                UA     100
                *

                KK    D234
                KM  DIVERT OF AVAILABLE RETENTION VOLUME AT KLEINMAN PARK.
                KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
                KM  APPROX. 17 ACRE-FEET OF RETENTION.
                DT  RET234      17
                DI       0   10000
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2928          DQ       0   10000
              *

2929          KK   S227S
2930          KM  BROADWAY RD & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S227S
2931          KM  FOR ROUTING SOUTH TO CP234
2932          DR   S227S
              *

2933          KK  RS227S
2934          KM  BROADWAY RD & ALMA SCHOOL RD: ROUTE STREET FLOW S227S SOUTH
2935          KM  TO 8TH AVE VIA ALMA SCHOOL RD
2936          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2937          RS       4    FLOW      -1
2938          RC   0.018   0.018   0.018    2645  0.0027
2939          RX       0       0      21      21     109     109     130     130
2940          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2941          KK    P227
2942          KM  BROADWAY RD & ALMA SCHOOL RD: RETURN DIVERTED PIPE FLOW P227
2943          KM  FOR ROUTING SOUTH TO CP234
2944          DR    P227
              *
1                                        HEC-1 INPUT                                                    PAGE 76

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

2945          KK   RP227
2946          KM  BROADWAY RD & ALMA SCHOOL RD: ROUTE PIPE FLOW SOUTH TO CP234
2947          KM  1-30" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO 8TH AVE
2948          KM  PIPE CAPACITY = 21 CFS
2949          RK    2650  0.0025   0.013            CIRC     2.5                        2
              *

2950          KK   CP234
2951          KM  8TH AVE & ALMA SCHOOL RD: COMBINE RS233W, RS227S, RP227, D234
2952          HC       4
              *

2953          KK    S234
2954          KM  8TH AVE & ALMA SCHOOL RD: STREET FLOW S234 VS. PIPE FLOW P234
2955          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO CP241
2956          KM  PIPE CAPACITY = 106 CFS
2957          DT    P234
2958          DI       0     106   10000
2959          DQ       0     106     106
              *

2960          KK   S234W
2961          KM  8TH AVE & ALMA SCHOOL RD: STREET FLOW WEST S234W VS.
2962          KM  STREET FLOW SOUTH S234S
2963          KM  SURVEYED INTERSECTION
2964          DT   S234S
2965          DI       0       1      67     377     916    1623    2474    3452    4547    5747
2966          DI    7046    8436
2967          DQ       0       1      41     233     578    1034    1584    2219    2932    3715
2968          DQ    4564    5475
              *

2969          KK  RS234W
2970          KM  8TH AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S234W WEST
2971          KM  TO LONGMORE VIA 8TH AVE/PUEBLO AVE
2972          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2973          RS       6    FLOW      -1
2974          RC   0.018   0.018   0.018    2720  0.0014
2975          RX       0       0      17      17      63      63      80      80
2976          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2977          KK   S228S
2978          KM  BROADWAY RD & LONGMORE: RETURN DIVERTED STREET FLOW S228S
2979          KM  FOR ROUTING SOUTH TO CP235
2980          DR   S228S
              *

2981          KK  RS228S
2982          KM  BROADWAY RD & LONGMORE: ROUTE STREET FLOW S228S SOUTH
2983          KM  TO PUEBLO AVE VIA LONGMORE
2984          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2985          RS       5    FLOW      -1
2986          RC   0.018   0.018   0.018    2490  0.0024
1                                        HEC-1 INPUT                                                    PAGE 77
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2987          RX       0       0      17      17      63      63      80      80
2988          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2989          KK   SB235
2990          KM  RUNOFF FROM SUB-BASIN 235
2991          BA   0.245
2992          PB    2.92
2993          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
2994          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
2995          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.73 SQUARE MILES
2996          KM  AREAL REDUCTION FACTOR = 0.975
2997          LG    0.23    0.25    4.80    0.36      38
2998          UC   0.613   0.408
2999          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3000          UA     100
              *

3001          KK   CP235
3002          KM  PUEBLO AVE & LONGMORE: COMBINE RS228S, RS234W, SB235
3003          HC       3
              *

3004          KK    S235
3005          KM  PUEBLO AVE & LONGMORE: STREET FLOW S235 VS. PIPE FLOW P235
3006          KM  1-30" RCP FLOWS WEST ALONG PUEBLO AVE/8TH AVE TO CP236
3007          KM  PIPE CAPACITY = 23 CFS
3008          DT    P235
3009          DI       0      23   10000
3010          DQ       0      23      23
              *

3011          KK   S235W
3012          KM  PUEBLO AVE & LONGMORE: STREET FLOW WEST S235W VS. STREET FLOW SOUTH S235S
3013          KM  SURVEYED INTERSECTION
3014          DT   S235S
3015          DI       0      33     209     529     949    1456    2038    2685    3392    4152
3016          DI    4961
3017          DQ       0       9      82     241     456     719    1023    1363    1736    2138
3018          DQ    2567
              *

3019          KK  RS235W
3020          KM  PUEBLO AVE & LONGMORE: ROUTE STREET FLOW S235W WEST
3021          KM  TO DOBSON RD VIA PUEBLO AVE/8TH AVE
3022          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3023          RS       3    FLOW      -1
3024          RC   0.018   0.018   0.018    2705   0.003
3025          RX       0       0      17      17      63      63      80      80
3026          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3027          KK    P235
3028          KM  PUEBLO AVE & LONGMORE: RETURN DIVERTED PIPE FLOW P235
3029          KM  FOR ROUTING WEST TO CP236
3030          DR    P235
              *

3031          KK   RP235
3032          KM  PUEBLO AVE & LONGMORE: ROUTE PIPE FLOW WEST TO CP236
3033          KM  1-30" RCP FLOWS WEST ALONG PUEBLO AVE/8TH AVE TO DOBSON RD
3034          KM  PIPE CAPACITY = 23 CFS
3035          RK    2685  0.0023   0.013            CIRC     2.5                       2
              *

3036          KK   S229S
3037          KM  BROADWAY RD & DOBSON RD: RETURN DIVERTED STREET FLOW S229S
3038          KM  FOR ROUTING SOUTH TO CP236
3039          DR   S229S
              *

3040          KK  RS229S
3041          KM  BROADWAY RD & DOBSON RD: ROUTE STREET FLOW S229S SOUTH
3042          KM  TO 8TH AVE VIA DOBSON RD
3043          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3044          RS       4    FLOW      -1
3045          RC   0.018   0.018   0.018    2640  0.0026
3046          RX       0       0      21      21     109     109     130     130
3047          RY       4    0.14    0.14       0       0    0.14    0.14       4
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                 *

3048             KK    P229
3049             KM  BROADWAY RD & DOBSON RD: RETURN DIVERTED PIPE FLOW P229
3050             KM  FOR ROUTING SOUTH TO CP236
3051             DR    P229
                 *

3052             KK   RP229
3053             KM  BROADWAY RD & DOBSON RD: ROUTE PIPE FLOW SOUTH TO CP236
3054             KM  1-27" RCP FLOWS SOUTH ALONG DOBSON RD TO 8TH AVE
3055             KM  PIPE CAPACITY = 13.9 CFS
3056             RK    2640   0.002   0.013            CIRC    2.25                        2
                 *

3057             KK   SB236
3058             KM  RUNOFF FROM SUB-BASIN 236
3059             BA   0.246
3060             LG    0.22    0.25    4.80    0.36      46
3061             UC   0.629   0.456
3062             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3063             UA     100
                 *
1                                          HEC-1 INPUT                                          PAGE 79

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


3064             KK    D236
3065             KM  DIVERT OF AVAILABLE RETENTION VOLUME AT ADAMS ELEMENTARY SCHOOL.
3066             KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
3067             KM  APPROX. 2 ACRE-FEET OF RETENTION.
3068             DT  RET236       2
3069             DI       0   10000
3070             DQ       0   10000
                 *

3071             KK   CP236
3072             KM  8TH AVE & DOBSON RD: COMBINE RS229S, RP229, RS235W, RP235, D236
3073             HC       5
                 *

3074             KK    S236
3075             KM  8TH AVE & DOBSON RD: STREET FLOW S236 VS. PIPE FLOW P236
3076             KM  1-48" RCP FLOWS SOUTH ALONG DOBSON RD TO CP243
3077             KM  PIPE CAPACITY = 64 CFS
3078             DT    P236
3079             DI       0      64   10000
3080             DQ       0      64      64
                 *

3081             KK   S236W
3082             KM  8TH AVE & DOBSON RD: STREET FLOW WEST S236W VS. STREET FLOW SOUTH S236S
3083             KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
3084             KM  DOBSON RD IS 6-LANE ARTERIAL, 8TH AVE IS 60-FT ROW COLLECTOR
3085             DT   S236S
3086             DI       0      38     264     744    1397    2199    3132    4183    5344    6605
3087             DI    7959
3088             DQ       0      16     142     436     844    1350    1943    2615    3360    4173
3089             DQ    5049
                 *

3090             KK  RS236W
3091             KM  8TH AVE & DOBSON RD: ROUTE STREET FLOW S236W WEST
3092             KM  TO ROOSEVELT RD VIA 8TH AVE
3093             KM  60-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3094             RS       3    FLOW      -1
3095             RC   0.018   0.018   0.018    2650  0.0026
3096             RX       0       0      13      13      47      47      60      60
3097             RY       4    0.33    0.33       0       0    0.33    0.33       4
                 *

3098             KK   SB237
3099             KM  RUNOFF FROM SUB-BASIN 237
3100             BA   0.251
3101             LG    0.22    0.25    4.80    0.36      44
3102             UC   0.654   0.471
3103             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3104             UA     100
                 *
1                                          HEC-1 INPUT                                          PAGE 80

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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3105          KK   CP237
3106          KM  8TH AVE & ROOSEVELT RD: COMBINE RS236W, SB237
3107          HC       2
              *

3108          KK    S237
3109          KM  8TH AVE & ROOSEVELT RD: STREET FLOW S237 VS. PIPE FLOW P237
3110          KM  1-24" RCP FLOWS WEST ALONG 8TH AVE TO THE TEMPE CANAL
3111          KM  PIPE CAPACITY = 11 CFS
3112          DT    P237
3113          DI       0      11   10000
3114          DQ       0      11      11
              *

3115          KK   RS237
3116          KM  8TH AVE & ROOSEVELT RD: ROUTE STREET FLOW CP237 WEST
3117          KM  TO TEMPE CANAL VIA 8TH AVE
3118          KM  60-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3119          RS       1    FLOW      -1
3120          RC   0.018   0.018   0.018     480  0.0002
3121          RX       0       0      13      13      47      47      60      60
3122          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

3123          KK    P237
3124          KM  8TH AVE & ROOSEVELT RD: RETURN DIVERTED PIPE FLOW FROM CP237
3125          KM  FOR ROUTING WEST TO CP238
3126          DR    P237
              *

3127          KK   RP237
3128          KM  8TH AVE & ROOSEVELT RD: ROUTE PIPE FLOW P237 WEST TO CP238
3129          KM  1-24" RCP FLOWS WEST ALONG 8TH AVE TO TEMPE CANAL
3130          KM  PIPE CAPACITY = 11 CFS
3131          RK     305  0.0025   0.013            CIRC       2                       2
              *

3132          KK   SB238
3133          KM  RUNOFF FROM SUB-BASIN 238
3134          BA   0.098
3135          LG    0.28    0.25    4.80    0.29      12
3136          UC    0.65   0.573
3137          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3138          UA     100
              *

3139          KK   CP238
3140          KM  TEMPE CANAL & 8TH AVE: COMBINE RS237, SB238, RP237, RC230
3141          HC       4
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3142          KK    S231
3143          KM  8TH AVE & RAILROAD: RETURN DIVERTED OVERLAND FLOW S231
3144          KM  FOR ROUTING SOUTH AND WEST TO CP239
3145          DR    S231
              *

3146          KK   RS231
3147          KM  8TH AVE & RAILROAD: ROUTE OVERLAND FLOW S231 SOUTH AND WEST
3148          KM  THROUGH SUB-BASIN 239 TO CP239
3149          KM  RESIDENTIAL STREET ROUTE, 50-FT ROW, 34-FT F/C TO F/C
3150          RS       8    FLOW      -1
3151          RC   0.018   0.018   0.018    5200  0.0025
3152          RX       0       0       8       8      42      42      50      50
3153          RY       5    0.39    0.33       0       0    0.33    0.39       5
              *

3154          KK   S232S
3155          KM  8TH AVE & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S232S
3156          KM  FOR ROUTING SOUTH TO CP239
3157          DR   S232S
              *

3158          KK  RS232S
3159          KM  8TH AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S232S SOUTH
3160          KM  TO SOUTHERN AVE VIA COUNTRY CLUB DR
3161          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3162          RS       4    FLOW      -1
3163          RC   0.018   0.018   0.018    2650  0.0028
3164          RX       0       0      21      21     109     109     130     130
3165          RY       4    0.14    0.14       0       0    0.14    0.14       4
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                 *

3166             KK    P232
3167             KM  8TH AVE & COUNTRY CLUB DR: RETURN DIVERTED PIPE FLOW P232
3168             KM  FOR ROUTING SOUTH TO CP239
3169             DR    P232
                 *

3170             KK   RP232
3171             KM  8TH AVE & COUNTRY CLUB DR: ROUTE PIPE FLOW P232 SOUTH TO CP239
3172             KM  1-60" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO SOUTHERN AVE
3173             KM  PIPE CAPACITY = 138 CFS
3174             RK    2650  0.0028   0.013            CIRC       5                      2
                 *

3175             KK   SB239
3176             KM  RUNOFF FROM SUB-BASIN 239
3177             BA   0.244
3178             PB    2.92
3179             KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
3180             KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
3181             KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.82 SQUARE MILES
3182             KM  AREAL REDUCTION FACTOR = 0.975
3183             LG    0.22    0.25    4.80    0.36      38
1                                             HEC-1 INPUT                                                    PAGE 82

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

3184             UC   0.692   0.518
3185             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3186             UA     100
                 *

3187             KK    D239
3188             KM  DIVERT OF AVAILABLE RETENTION VOLUME AT GUERRERO ROTARY PARK.
3189             KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
3190             KM  APPROX. 5 ACRE-FEET OF RETENTION.
3191             DT  RET239       5
3192             DI       0   10000
3193             DQ       0   10000
                 *

3194             KK   CP239
3195             KM  SOUTHERN AVE & COUNTRY CLUB DR: COMBINE RS231, RS232S, RP232, D239
3196             HC       4
                 *

3197             KK    S239
3198             KM  SOUTHERN AVE & COUNTRY CLUB DR: STREET FLOW S239 VS. PIPE FLOW P239
3199             KM  1-72" RCP FLOWS SOUTH TO CP245.
3200             KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 190 CFS.  PIPE CAPACITY
3201             KM  WAS REDUCED TO 175 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
3202             KM  DUE TO A SURCHARGED FLOW CONDITION AT 190 CFS.
3203             KM  PIPE CAPACITY = 175 CFS
3204             DT    P239
3205             DI       0     175   10000
3206             DQ       0     175     175
                 *

3207             KK   S239W
3208             KM  SOUTHERN AVE & COUNTRY CLUB DR: STREET FLOW WEST S239W VS.
3209             KM  STREET FLOW SOUTH S239S
3210             KM  SURVEYED INTERSECTION
3211             DT   S239S
3212             DI       0      56     373    1042    2003    3192    4582    6155    7896    9792
3213             DI   11834
3214             DQ       0      24     161     508    1027    1676    2441    3310    4275    5329
3215             DQ    6466
                 *

3216             KK  RS239W
3217             KM  SOUTHERN AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S239W WEST
3218             KM  TO EXTENSION RD VIA SOUTHERN AVE
3219             KM  6-LANE ARTERIAL STREET ROUTING SECTION
3220             RS       5    FLOW      -1
3221             RC   0.018   0.018   0.018    2615  0.0012
3222             RX       0       0      21      21     109     109     130     130
3223             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *
1                                             HEC-1 INPUT                                                    PAGE 83

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

3224             KK   S233S
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3225          KM  8TH AVE & EXTENSION RD: RETURN DIVERTED STREET FLOW S233S
3226          KM  FOR ROUTING SOUTH TO CP240
3227          DR   S233S
              *

3228          KK  RS233S
3229          KM  8TH AVE & EXTENSION RD: ROUTE STREET FLOW S233S SOUTH
3230          KM  TO SOUTHERN AVE VIA EXTENSION RD
3231          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3232          RS       3    FLOW      -1
3233          RC   0.018   0.018   0.018    2650  0.0038
3234          RX       0       0      17      17      63      63      80      80
3235          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3236          KK   SB240
3237          KM  RUNOFF FROM SUB-BASIN 240
3238          BA   0.247
3239          LG    0.20    0.25    4.80    0.37      45
3240          UC   0.671   0.497
3241          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3242          UA     100
              *

3243          KK   CP240
3244          KM  SOUTHERN AVE & EXTENSION RD: COMBINE RS233S, RS239W, SB240
3245          HC       3
              *

3246          KK    S240
3247          KM  SOUTHERN AVE & EXTENSION RD: STREET FLOW S240 VS. PIPE FLOW P240
3248          KM  1-34"x53" ELLIPTICAL PIPE FLOWS WEST ALONG SOUTHERN AVE TO CP241
3249          KM  PIPE CAPACITY = 166 CFS
3250          DT    P240
3251          DI       0      30   10000
3252          DQ       0      30      30
              *

3253          KK   S240W
3254          KM  SOUTHERN AVE & EXTENSION RD: STREET FLOW WEST S240W VS.
3255          KM  STREET FLOW SOUTH S240S
3256          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
3257          KM  SOUTHERN AVE IS 6-LANE ARTERIAL, EXTENSION RD IS 80-FT ROW COLLECTOR
3258          DT   S240S
3259          DI       0      30     223     620    1157    1814    2579    3440    4389    5420
3260          DI    6530
3261          DQ       0      22     152     402     735    1139    1607    2132    2709    3334
3262          DQ    4005
              *
1                                          HEC-1 INPUT                                          PAGE 84

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

3263          KK  RS240W
3264          KM  SOUTHERN AVE & EXTENSION RD: ROUTE STREET FLOW S240W WEST
3265          KM  TO ALMA SCHOOL RD VIA SOUTHERN AVE
3266          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3267          RS       7    FLOW      -1
3268          RC   0.018   0.018   0.018    2620  0.0004
3269          RX       0       0      21      21     109     109     130     130
3270          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3271          KK    P240
3272          KM  SOUTHERN AVE & EXTENSION RD: RETURN DIVERTED PIPE FLOW P240
3273          KM  FOR ROUTING WEST TO CP241
3274          DR    P240
              *

3275          KK   RP240
3276          KM  SOUTHERN AVE & EXTENSION RD: ROUTE PIPE FLOW WEST TO CP241
3277          KM  1-34"x53" ELLIPTICAL RCP FLOWS WEST ALONG SOUTHERN AVE TO CP241
3278          KM  PIPE AREA = 9.8 SQ. FT.  EQUIVALENT CIRCULAR PIPE DIAMETER = 3.53 FT
3279          KM  PIPE CAPACITY = 166 CFS
3280          RK    2620  0.0009   0.013            CIRC    3.53                        2
              *

3281          KK   S234S
3282          KM  8TH AVE & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S234S
3283          KM  FOR ROUTING SOUTH TO CP241
3284          DR   S234S
              *

3285          KK  RS234S
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3286          KM  8TH AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S234S SOUTH
3287          KM  TO SOUTHERN AVE VIA ALMA SCHOOL RD
3288          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3289          RS       4    FLOW      -1
3290          RC   0.018   0.018   0.018    2640  0.0029
3291          RX       0       0      21      21     109     109     130     130
3292          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3293          KK    P234
3294          KM  8TH AVE & ALMA SCHOOL RD: RETURN DIVERTED PIPE FLOW P234
3295          KM  FOR ROUTING SOUTH TO CP241
3296          DR    P234
              *

3297          KK   RP234
3298          KM  8TH AVE & ALMA SCHOOL RD: ROUTE PIPE FLOW SOUTH TO CP241
3299          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO SOUTHERN AVE
3300          KM  PIPE CAPACITY = 106 CFS
3301          RK    2640  0.0029   0.013            CIRC     4.5                      2
              *
1                                          HEC-1 INPUT                                                    PAGE 85

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

3302          KK   SB241
3303          KM  RUNOFF FROM SUB-BASIN 241
3304          BA   0.247
3305          LG    0.21    0.25    4.80    0.36      50
3306          UC   0.633   0.405
3307          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3308          UA     100
              *

3309          KK    D241
3310          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT POWELL JUNIOR HIGH AND REDBIRD
3311          KM  ELEMENTARY SCHOOLS.  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED
3312          KM  AREAS.  APPROX. 14 ACRE-FEET OF RETENTION.
3313          DT  RET241      14
3314          DI       0   10000
3315          DQ       0   10000
              *

3316          KK   CP241
3317          KM  SOUTHERN AVE & ALMA SCHOOL RD: COMBINE RS234S, RP234, RS240W, RP240, D241
3318          HC       5
              *

3319          KK    S241
3320          KM  SOUTHERN AVE & ALMA SCHOOL RD: STREET FLOW S241 VS. PIPE FLOW P241
3321          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO CP248
3322          KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 90 CFS.  PIPE CAPACITY
3323          KM  WAS REDUCED TO 83 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
3324          KM  DUE TO A SURCHARGED FLOW CONDITION AT 90 CFS.
3325          DT    P241
3326          DI       0      83   10000
3327          DQ       0      83      83
              *

3328          KK   S241W
3329          KM  SOUTHERN AVE & ALMA SCHOOL RD: STREET FLOW WEST S241W VS.
3330          KM  STREET FLOW SOUTH S241S
3331          KM  SURVEYED INTERSECTION
3332          DT   S241S
3333          DI       0       1      89     592    1589    2946    4607    6538    8718   11127
3334          DI   13748   16570
3335          DQ       0       1      64     410    1113    2062    3224    4576    6103    7792
3336          DQ    9630   11611
              *

3337          KK  RS241W
3338          KM  SOUTHERN AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S241W WEST
3339          KM  TO LONGMORE VIA SOUTHERN AVE
3340          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3341          RS       3    FLOW      -1
3342          RC   0.018   0.018   0.018    1990   0.002
3343          RX       0       0      21      21     109     109     130     130
3344          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                          HEC-1 INPUT                                                    PAGE 86

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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3345          KK   S235S
3346          KM  PUEBLO AVE & LONGMORE: RETURN DIVERTED STREET FLOW S235S
3347          KM  FOR ROUTING SOUTH TO CP242
3348          DR   S235S
              *

3349          KK  RS235S
3350          KM  PUEBLO AVE & LONGMORE: ROUTE STREET FLOW S235S SOUTH
3351          KM  TO SOUTHERN AVE VIA LONGMORE
3352          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3353          RS       5    FLOW      -1
3354          RC   0.018   0.018   0.018    3050   0.001
3355          RX       0       0      17      17      63      63      80      80
3356          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3357          KK   SB242
3358          KM  RUNOFF FROM SUB-BASIN 242
3359          BA   0.246
3360          PB    2.92
3361          KM  AREAL REDUCTION BASED ON AREA APRROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
3362          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
3363          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.73 SQUARE MILES
3364          KM  AREAL REDUCTION FACTOR = 0.975
3365          LG    0.21    0.25    4.80    0.37      55
3366          UC   0.667   0.499
3367          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3368          UA     100
              *

3369          KK   CP242
3370          KM  SOUTHERN AVE & LONGMORE: COMBINE RS235S, RS241W, SB242
3371          HC       3
              *

3372          KK    S242
3373          KM  SOUTHERN AVE & LONGMORE: STREET FLOW S242 VS. PIPE FLOW P242
3374          KM  1-42" RCP FLOWS WEST ALONG SOUTHERN AVE TO CP243
3375          KM  PIPE CAPACITY = 50 CFS
3376          DT    P242
3377          DI       0      50   10000
3378          DQ       0      50      50
              *

3379          KK   S242W
3380          KM  SOUTHERN AVE & LONGMORE: STREET FLOW WEST S242W VS. STREET FLOW SOUTH S242S
3381          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
3382          KM  SOUTHERN AVE IS 6-LANE ARTERIAL, LONGMORE IS 80-FT ROW COLLECTOR
3383          DT   S242S
3384          DI       0      27     221     644    1225    1941    2777    3721    4766    5903
3385          DI    7127
3386          DQ       0      11      79     208     381     591     834    1106    1406    1730
3387          DQ    2078
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3388          KK  RS242W
3389          KM  SOUTHERN AVE & LONGMORE: ROUTE STRET FLOW S242W WEST
3390          KM  TO DOBSON RD VIA SOUTHERN AVE
3391          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3392          RS       5    FLOW      -1
3393          RC   0.018   0.018   0.018    3330  0.0025
3394          RX       0       0      21      21     109     109     130     130
3395          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3396          KK    P242
3397          KM  SOUTHERN AVE & LONGMORE: RETURN DIVERTED PIPE FLOW P242
3398          KM  FOR ROUTING WEST TO CP243
3399          DR    P242
              *

3400          KK   RP242
3401          KM  SOUTHERN AVE & LONGMORE: ROUTE PIPE FLOW P242 WEST TO CP243
3402          KM  1-42" RCP FLOWS WEST ALONG SOUTHERN AVENUE TO DOBSON RD
3403          KM  PIPE CAPACITY = 50 CFS
3404          RK    3330  0.0025   0.013            CIRC     3.5                        2
              *

3405          KK   S236S
3406          KM  8TH AVE & DOBSON RD: RETURN DIVERTED STREET FLOW S236S
3407          KM  FOR ROUTING SOUTH TO CP243
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3408          DR   S236S
              *

3409          KK  RS236S
3410          KM  8TH AVE & DOBSON RD: ROUTE STREET FLOW S236S SOUTH
3411          KM  TO SOUTHERN AVE VIA DOBSON RD
3412          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3413          RS       4    FLOW      -1
3414          RC   0.018   0.018   0.018    2640   0.002
3415          RX       0       0      21      21     109     109     130     130
3416          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3417          KK    P236
3418          KM  8TH AVE & DOBSON RD: RETURN DIVERTED PIPE FLOW P236
3419          KM  FOR ROUTING SOUTH TO CP243
3420          DR    P236
              *

3421          KK   RP236
3422          KM  8TH AVE & DOBSON RD: ROUTE PIPE FLOW SOUTH TO CP243
3423          KM  1-48" RCP FLOWS SOUTH ALONG DOBSON RD TO SOUTHERN AVE
3424          KM  PIPE CAPACITY = 64 CFS
3425          RK    2640   0.002   0.013            CIRC       4                       2
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3426          KK   SB243
3427          KM  RUNOFF FROM SUB-BASIN 243
3428          BA   0.281
3429          LG    0.21    0.25    4.80    0.37      55
3430          UC   0.758   0.561
3431          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3432          UA     100
              *

3433          KK   CP243
3434          KM  SOUTHERN AVE & DOBSON RD: COMBINE RS236S, RP236, RS242W, RP242, SB243
3435          HC       5
              *

3436          KK    S243
3437          KM  SOUTHERN AVE & DOBSON RD: STREET FLOW S243 VS. PIPE FLOW P243
3438          KM  1-66" RCP FLOWS WEST ALONG SOUTHERN AVE TO CP244
3439          KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 130 CFS.  PIPE CAPACITY
3440          KM  WAS REDUCED TO 125 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
3441          KM  DUE TO A SURCHARGED FLOW CONDITION AT 130 CFS.
3442          DT    P243
3443          DI       0     125   10000
3444          DQ       0     125     125
              *

3445          KK   S243W
3446          KM  SOUTHERN AVE & DOBSON RD: STREET FLOW WEST S243W VS. STREET FLOW SOUTH S243S
3447          KM  SURVEYED INTERSECTION
3448          DT   S243S
3449          DI       0      26     283     893    1747    2809    4054    5466    7028    8734
3450          DI   10570
3451          DQ       0       3     111     418     863    1424    2086    2840    3677    4593
3452          DQ    5580
              *

3453          KK  RS243W
3454          KM  SOUTHERN AVE & DOBSON RD: ROUTE STREET FLOW S243W WEST
3455          KM  TO TEMPE CANAL VIA SOUTHERN AVE
3456          KM  5-LANE ARTERIAL STREET - USE 6-LANE ARTERIAL STREET ROUTING SECTION
3457          RS       2    FLOW      -1
3458          RC   0.018   0.018   0.018    1620  0.0007
3459          RX       0       0      21      21     109     109     130     130
3460          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3461          KK   SB244
3462          KM  RUNOFF FROM SUB-BASIN 244
3463          BA   0.224
3464          LG    0.22    0.25    4.80    0.37      47
3465          UC   0.683   0.457
3466          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3467          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3468          KK  CP244A
3469          KM  TEMPE CANAL & SOUTHERN AVE: COMBINE RS243W, SB244, CP238
3470          HC       3
              *

3471          KK  BS244A
3472          KM  RETENTION STORAGE ALONG TEMPE CANAL NORTH OF SOUTHERN AVE.  CONTOUR AREAS
3473          KM  MEASURED FOR RETENTION VOLUME WERE REDUCED BY APPROX. BUILDING SQUARE
3474          KM  FOOTAGE.  OUTFLOW FROM UNEVEN WEIR CALCULATION BASED ON TEMPE CANAL AND
3475          KM  SOUTHERN AVE SURVEYED ELEVATIONS.
3476          RS       1    STOR       0
3477          SA     2.3     6.4     9.2    30.3      53
3478          SE    1196    1198    1199    1200    1201
3479          SQ       0       0       0     400    3198
              *

3480          KK    P243
3481          KM  SOUTHERN AVE & DOBSON RD: RETURN DIVERTED PIPE FLOW P243
3482          KM  FOR ROUTING WEST TO CP244
3483          DR    P243
              *

3484          KK   RP243
3485          KM  SOUTHERN AVE & DOBSON RD: ROUTE PIPE FLOW WEST TO CP244
3486          KM  1-66" RCP FLOWS WEST ALONG SOUTHERN AVE TO TEMPE CANAL
3487          KM  PIPE CAPACITY = 125 CFS
3488          RK    1620  0.0015   0.013            CIRC     5.5                        2
              *

3489          KK   CP244
3490          KM  TEMPE CANAL & SOUTHERN AVE: COMBINE BS244A, RP243.  INDICATES FLOW CROSSING
3491          KM  SOUTHERN AVE TO THE SOUTH.
3492          HC       2
              *

3493          KK   RC244
3494          KM  TEMPE CANAL & SOUTHERN AVE: ROUTE FLOW CP244 ALONG TEMPE CANAL TO CP251
3495          KM  VIA AN UNLINED CHANNEL APPROX. HALF THE DISTANCE TO THE ADOT CHANNEL.
3496          RS       1    FLOW      -1
3497          RC    0.03    0.03    0.03    1400   0.003
3498          RX       0       0      20      32      47      57      72      72
3499          RY     5.5       5       4       0       0       4       6     6.5
              *

3500          KK  RC244B
3501          KM  TEMPE CANAL & SOUTHERN AVE: ROUTE FLOW RC244 ALONG TEMPE CANAL TO CP251
3502          KM  CHANNEL MODELED AS RC244 FEEDS INTO TWO (2)120"X72" CBC.  THE BOX CULVERT
3503          KM  OUTLETS TO A SHORT LINED CHANNEL WHICH MERGES WITH THE ADOT CHANNEL.
3504          RS       1    FLOW      -1
3505          RC   0.013   0.013   0.013    1150   0.003
3506          RX       0       0       0       0      20      20      20      20
3507          RY       6       5       3       0       0       3       5       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3508          KK   S239S
3509          KM  SOUTHERN AVE & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S239S
3510          KM  FOR ROUTING SOUTH TO CP245
3511          DR   S239S
              *

3512          KK  RS239S
3513          KM  SOUTHERN AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S239S SOUTH
3514          KM  TO ADOT US60 CHANNEL VIA COUNTRY CLUB DR
3515          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3516          RS       3    FLOW      -1
3517          RC   0.018   0.018   0.018    2310  0.0028
3518          RX       0       0      21      21     109     109     130     130
3519          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3520          KK   SB245
3521          KM  RUNOFF FROM SUB-BASIN 245
3522          BA   0.227
3523          PB    2.92
3524          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
3525          KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
3526          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.82 SQUARE MILES
3527          KM  AREAL REDUCTION FACTOR = 0.975
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3528          LG    0.15    0.26    4.80    0.38      59
3529          UC   0.608   0.444
3530          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3531          UA     100
              *

3532          KK   P146A
3533          KM  ADOT US60 CHANNEL AT RAILROAD, HERITAGE PARK BASIN:
3534          KM  EXISTING 54" RCP, LENGTH=178', PASSES ADOT CHANNEL FLOW UNDER THE
3535          KM  RAILROAD.  PIPE CAPACITY CALCULATED USING DODSON HYDROCALC SOFTWARE,
3536          KM  WITH MAXIMUM HEADWATER ELEVATION = 1213 ft = UPSTREAM SPILLWAY
3537          KM  ELEVATION.  PIPE CAPACITY = 175 CFS.
3538          DR   P146A
              *

3539          KK  RC146A
3540          KM  ADOT US60 CHANNEL & RAILROAD: ROUTE PIPE FLOW FROM CENTER STREET
3541          KM  WEST WITHIN THE ADOT CHANNEL TO CP245.  CONCRETE-LINED CHANNEL.
3542          KM  CHANNEL SECTION BASED ON SURVEY AND AS-BUILT.
3543          RS       3    FLOW      -1
3544          RC   0.014   0.014   0.014    2565  0.0005
3545          RX       0       1       2      16      48      62      63      64
3546          RY      10       7       7       0       0       7       7      10
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3547          KK   SB252
3548          KM  RUNOFF FROM SUB-BASIN 252
3549          KM  A STORM DRAIN AND PUMP SYSTEM COLLECTS RUNOFF FROM US60 AND PUMPS IT
3550          KM  INTO THE ADOT CHANNEL NORTH OF THE FREEWAY.
3551          BA    0.06
3552          LG    0.05    0.25    4.80    0.25      90
3553          UC    0.25   0.259
3554          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3555          UA     100
              *

3556          KK    P239
3557          KM  SOUTHERN AVE & COUNTRY CLUB DR: RETURN DIVERTED PIPE FLOW P239
3558          KM  FOR ROUTING SOUTH TO CP245
3559          DR    P239
              *

3560          KK   RP239
3561          KM  SOUTHERN AVE & COUNTRY CLUB DR: ROUTE PIPE FLOW SOUTH TO CP245
3562          KM  1-72" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO CP245
3563          KM  PIPE CAPACITY = 175 CFS
3564          RK    2250   0.002   0.013            CIRC       6                       2
              *

3565          KK   CP245
3566          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: COMBINE RC146A, RS239S, RP239
3567          KM  SB245, AND SB252
3568          HC       5
              *

3569          KK    S245
3570          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: CHANNEL FLOW S245 VS. PIPE FLOW P245
3571          KM  1-72" RCP FLOWS WEST ALONG THE NORTH SIDE OF THE ADOT CHANNEL TO CP247A
3572          KM  PIPE CAPACITY = 190 CFS
3573          DT    P245
3574          DI       0     190   10000
3575          DQ       0     190     190
              *

3576          KK   RC245
3577          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: ROUTE CHANNEL FLOW FROM COUNTRY CLUB
3578          KM  DR WEST WITHIN THE ADOT CHANNEL TO CP246.  CONCRETE-LINED CHANNEL.
3579          KM  CHANNEL SECTION APPROXIMATED FROM SURVEY AND AS-BUILT.
3580          RS       2    FLOW      -1
3581          RC   0.014   0.014   0.014    2650  0.0005
3582          RX       0       1       2      16      48      62      62      64
3583          RY      10       7       7       0       0       7       7      10
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3584          KK   S240S
3585          KM  SOUTHERN AVE & EXTENSION RD: RETURN DIVERTED STREET FLOW S240S
3586          KM  FOR ROUTING SOUTH TO CP246
```

```
3587          DR   S240S
              *

3588          KK  RS240S
3589          KM  SOUTHERN AVE & EXTENSION RD: ROUTE STREET FLOW S240S SOUTH
3590          KM  TO ADOT US60 CHANNEL VIA EXTENSION RD
3591          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3592          RS       4    FLOW      -1
3593          RC   0.018   0.018   0.018    2460  0.0004
3594          RX       0       0      17      17      63      63      80      80
3595          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3596          KK   SB246
3597          KM  RUNOFF FROM SUB-BASIN 246
3598          BA   0.234
3599          LG    0.14    0.25     4.8     0.4      68
3600          UC   0.613   0.431
3601          UA       0       5      16      30      65      77      84      90      94      97
3602          UA     100
              *

3603          KK   CP246
3604          KM  ADOT US60 CHANNEL & EXTENSION RD: COMBINE RS240S, RC245, SB246
3605          HC       3
              *

3606          KK   SB247
3607          KM  RUNOFF FROM SUB-BASIN 247
3608          BA   0.131
3609          LG    0.13    0.18    4.80    0.39      26
3610          UC   0.542   0.407
3611          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3612          UA     100
              *

3613          KK   SB248
3614          KM  RUNOFF FROM SUB-BASIN 248
3615          BA   0.102
3616          LG     0.1    0.27    4.80     0.4      67
3617          UC   0.554   0.469
3618          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3619          UA     100
              *

3620          KK    P245
3621          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: RETURN DIVERTED PIPE FLOW P245
3622          KM  FOR ROUTING WEST TO CP247A AT FIESTA LAKES GOLF COURSE
3623          DR    P245
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3624          KK   RP245
3625          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: ROUTE PIPE FLOW WEST TO CP247A
3626          KM  1-72" RCP FLOW WEST TO FIESTA LAKES GOLF COURSE
3627          KM  PIPE CAPACITY = 190 CFS
3628          RK    2730   0.002   0.013            CIRC       6                       2
              *

3629          KK   CP247
3630          KM  FIESTA LAKES GOLF COURSE: COMBINE SB247, SB248, RP245, CP246
3631          HC       4
              *

3632          KK   BS247
3633          KM  FIESTA LAKES GOLF COURSE: RUNOFF FROM THE QUARTER SQUARE-MILE BOUNDED
3634          KM  BY SOUTHERN AVE, US60, ALMA SCHOOL RD, AND EXTENSION RD IS CONVEYED TO
3635          KM  THE GOLF COURSE BY A STORM DRAIN SYSTEM.  A 72" RCP WITH FLOW FROM
3636          KM  COUNTRY CLUB DR ALSO OUTLETS TO THE GOLF COURSE.  THE GOLF COURSE IS
3637          KM  ADJACENT TO THE ADOT CHANNEL, AND A CONCRETE SPILLWAY DIRECTS FLOW
3638          KM  BETWEEN THE LAKE AND CHANNEL.  A CHANNEL BLOCK WITH A GATE IS IMMEDIATELY
3639          KM  DOWNSTREAM OF THE SPILLWAY WITHIN THE ADOT CHANNEL, AND THE APPROXIMATE
3640          KM  CAPACITY OF THE GATE OPENING IS MODELED AS THE LOW FLOW OUT OF THE
3641          KM  BASIN BEFORE BASIN FLOWS OVERTOP THE SPILLWAY.  GATE CAPACITY WAS
3642          KM  CALCULATED USING THE ORIFICE EQUATION, WITH HEAD DEPTH BASED ON THE
3643          KM  RETENTION BASIN SPILLWAY ELEVATION.  GATE DIMENSIONS WERE APPROXIMATED
3644          KM  FROM FIELD OBSERVATION AND ADOT AS-BUILT PLANS FOR THE CHANNEL.
3645          KM  RETENTION VOLUME AND CHANNEL GEOMETRY WAS APPROXIMATED USING AREA AND
3646          KM  ELEVATION INFORMATION FROM 10-FT CONTOUR INTERVAL TOPO MAPPING PROVIDED
3647          KM  BY THE FLOOD CONTROL DISTRICT, AND AS-BUILT PLANS FOR THE ADOT CHANNEL.
3648          RS       1    STOR       0
3649          SA     2.5       8      14      18      22
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3650          SE    1200    1203    1206    1208    1210
3651          SQ     180     180     180    1275    4497
              *

3652          KK   RC247
3653          KM  ADOT US60 CHANNEL & FIESTA LAKES GOLF CLUB: ROUTE CHANNEL FLOW FROM
3654          KM  EXTENSION RD WEST WITHIN THE ADOT CHANNEL TO CP248.  CONCRETE-LINED
3655          KM  CHANNEL.  CHANNEL SECTION APPROXIMATED FROM SURVEY AND AS-BUILT.
3656          RS       1    FLOW      -1
3657          RC   0.014   0.014   0.014    2390  0.0011
3658          RX       0       1       2      16      48      62      63      64
3659          RY      10       7       7       0       0       7       7      10
              *

3660          KK   S241S
3661          KM  SOUTHERN AVE & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S241S
3662          KM  FOR ROUTING SOUTH TO CP248
3663          DR   S241S
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3664          KK  RS241S
3665          KM  SOUTHERN AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S241S SOUTH
3666          KM  TO ADOT US60 CHANNEL VIA ALMA SCHOOL RD
3667          KM  8-LANE ARTERIAL STREET - USE 6-LANE ARTERIAL STREET ROUTING SECTION
3668          RS       3    FLOW      -1
3669          RC   0.018   0.018   0.018    2290  0.0021
3670          RX       0       0      21      21     109     109     130     130
3671          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3672          KK    P241
3673          KM  SOUTHERN AVE & ALMA SCHOOL RD: RETURN DIVERTED PIPE FLOW P241
3674          KM  FOR ROUTING SOUTH TO CP248
3675          DR    P241
              *

3676          KK   RP241
3677          KM  SOUTHERN AVE & ALMA SCHOOL RD: ROUTE PIPE FLOW SOUTH TO CP248
3678          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD, AND OUTLETS TO THE
3679          KM  ADOT CHANNEL NORTH OF US60.  PIPE CAPACITY = 83 CFS
3680          RK    2360  0.0021   0.013            CIRC     4.5                        2
              *

3681          KK   SB253
3682          KM  RUNOFF FROM SUB-BASIN 253
3683          KM  A STORM DRAIN AND PUMP SYSTEM COLLECTS RUNOFF FROM US60 AND PUMPS IT
3684          KM  INTO THE ADOT CHANNEL NORTH OF THE FREEWAY.
3685          BA   0.052
3686          LG    0.05    0.25     4.8    0.25      90
3687          UC   0.617   0.847
3688          UA       0       5      16      30      65      77      84      90      94      97
3689          UA     100
              *

3690          KK   CP248
3691          KM  ADOT US60 CHANNEL AT ALMA SCHOOL RD: COMBINE RS241S, RP241, RC247, SB253
3692          HC       4
              *

3693          KK   RC248
3694          KM  ADOT US60 CHANNEL & ALMA SCHOOL RD: ROUTE CHANNEL FLOW TO CP249
3695          KM  CONCRETE-LINED CHANNEL.  CHANNEL SECTION APPROXIMATED FROM SURVEY
3696          KM  AND AS-BUILT.
3697          RS       1    FLOW      -1
3698          RC   0.014   0.014   0.014    1985   0.001
3699          RX       0       1       2      16      48      62      63      64
3700          RY       7       7       7       0       0       7       7       7
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3701          KK   S242S
3702          KM  SOUTHERN AVE & LONGMORE: RETURN DIVERTED STREET FLOW S242S
3703          KM  FOR ROUTING SOUTH TO CP249
3704          DR   S242S
              *

3705          KK  RS242S
3706          KM  SOUTHERN AVE & LONGMORE: ROUTE STREET FLOW S242S SOUTH
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3707          KM  TO ADOT US60 CHANNEL VIA LONGMORE
3708          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3709          RS       8    FLOW      -1
3710          RC   0.018   0.018   0.018    2405  0.0002
3711          RX       0       0      17      17      63      63      80      80
3712          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3713          KK   SB249
3714          KM  RUNOFF FROM SUB-BASIN 249
3715          BA   0.176
3716          PB    2.92
3717          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
3718          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
3719          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 2.73 SQUARE MILES
3720          KM  AREAL REDUCTION FACTOR = 0.975
3721          LG     0.1    0.26    4.80    0.41      75
3722          UC   0.683   0.491
3723          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3724          UA     100
              *

3725          KK    D249
3726          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT RETENTION BASIN IN SOUTHWEST
3727          KM  CORNER OF FIESTA MALL.  RETENTION VOLUME APPROXIMATED USING 10-FOOT
3728          KM  INTERVAL TOPO MAPPING FROM THE FLOOD CONTROL DISTRICT.
3729          KM  APPROX. RETENTION VOLUME = 20 ACRE-FEET
3730          DT  RET249      20
3731          DI       0   10000
3732          DQ       0   10000
              *

3733          KK   CP249
3734          KM  ADOT US60 CHANNEL AT LONGMORE: COMBINE RS242S, RC248, D249
3735          HC       3
              *

3736          KK   RC249
3737          KM  ADOT US60 CHANNEL & LONGMORE: ROUTE CHANNEL FLOW TO CP250.
3738          KM  CONCRETE-LINED CHANNEL.  CHANNEL SECTION APPROXIMATED FROM SURVEY AND
3739          KM  AS-BUILT.
3740          RS       2    FLOW      -1
3741          RC   0.014   0.014   0.014    3325 0.00075
3742          RX       0       1       2      16      48      62      63      64
3743          RY       7       7       7       0       0       7       7       7
              *
```



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

3744          KK   S243S
3745          KM  SOUTHERN AVE & DOBSON RD: RETURN DIVERTED STREET FLOW S243S
3746          KM  FOR ROUTING SOUTH TO CP250
3747          DR   S243S
              *

3748          KK  RS243S
3749          KM  SOUTHERN AVE & DOBSON RD: ROUTE STREET FLOW S243S SOUTH
3750          KM  TO ADOT US60 CHANNEL VIA DOBSON RD
3751          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3752          RS       4    FLOW      -1
3753          RC   0.018   0.018   0.018    2280  0.0007
3754          RX       0       0      21      21     109     109     130     130
3755          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3756          KK   SB250
3757          KM  RUNOFF FROM SUB-BASIN 250
3758          BA   0.296
3759          LG    0.18    0.25    4.80    0.36      54
3760          UC   0.617   0.394
3761          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3762          UA     100
              *

3763          KK    D250
3764          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT MESA COMMUNITY COLLEGE.
3765          KM  APPROX. VOLUME BASED ON 80% OF REQUIRED RETENTION VOLUME FOR SITE.
3766          KM  APPROX. 15 ACRE-FEET OF RETENTION.
3767          DT  RET250      15
3768          DI       0   10000
3769          DQ       0   10000
              *
```

```
3770          KK   SB254
3771          KM  RUNOFF FROM SUB-BASIN 254
3772          KM  A STORM DRAIN AND PUMP SYSTEM COLLECTS RUNOFF FROM US60 AND PUMPS IT
3773          KM  INTO THE ADOT CHANNEL NORTH OF THE FREEWAY.
3774          BA   0.075
3775          LG    0.05    0.25     4.8    0.25      90
3776          UC   0.588   0.781
3777          UA       0       5      16      30      65      77      84      90      94      97
3778          UA     100
              *

3779          KK   CP250
3780          KM  ADOT US60 CHANNEL AT DOBSON RD: COMBINE RS243S, RC249, D250, SB254
3781          HC       4
              *
1                                          HEC-1 INPUT                                          PAGE 97

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

3782          KK   RC250
3783          KM  ADOT US60 CHANNEL & DOBSON RD: ROUTE CHANNEL FLOW TO CP251
3784          KM  CHANNEL SECTION APPROXIMATED FROM SURVEY AND AS-BUILT.
3785          KM  CONCRETE-LINED CHANNEL.
3786          RS       1    FLOW      -1
3787          RC   0.014   0.014   0.014    1770  0.0014
3788          RX       0       1       2      16      48      62      63      64
3789          RY       7       7       7       0       0       7       7       7
              *

3790          KK   SB251
3791          KM  RUNOFF FROM SUB-BASIN 251
3792          BA   0.134
3793          LG     0.1    0.25    4.80    0.43      80
3794          UC   0.629   0.517
3795          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3796          UA     100
              *

3797          KK    D251
3798          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT DESERT SAMARITIAN HOSPITAL.
3799          KM  APPROX. VOLUME BASED ON 80% OF REQUIRED RETENTION VOLUME FOR SITE.
3800          KM  APPROX. 10 ACRE-FEET OF RETENTION.
3801          DT  RET251      10
3802          DI       0   10000
3803          DQ       0   10000
              *

3804          KK   CP251
3805          KM  ADOT US60 CHANNEL & MESA DRAIN: COMBINE RC244, RC250, D251
3806          KM  ADOT CHANNEL COMBINES WITH MESA DRAIN IMMEDIATELY NORTH AND EAST OF
3807          KM  TEMPE CANAL AND US60.
3808          HC       3
              *

3809          KK   SB201
3810          KM  RUNOFF FROM SUB-BASIN 201
3811          KM  SUBDIVISION STREET RUNOFF FLOWS PREDOMINANTLY NORTH AND EAST
3812          KM  TOWARD THE GOLF COURSE.
3813          BA    0.09
3814          PB    2.91
3815          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY TEMPE CANAL TO THE
3816          KM  NORTH AND WEST, SPRR TO THE SOUTH, AND COUNTRY CLUB DR TO THE EAST.
3817          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 3.73 SQUARE MILES
3818          KM  AREAL REDUCTION FACTOR = 0.969
3819          LG    0.23    0.14    4.65    0.44      22
3820          UC     0.2   0.091
3821          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3822          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 98

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

3823          KK   S204N
3824          KM  8TH ST & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S204N
3825          KM  FOR ROUTING NORTH TO CP205
3826          DR   S204N
              *

3827          KK  RS204N
3828          KM  8TH ST & ALMA SCHOOL RD: ROUTE STREET FLOW S204N NORTH
3829          KM  TO TEMPE CANAL VIA ALMA SCHOOL RD
3830          KM  6-LANE ARTERIAL STREET ROUTING SECTION
```

```
3831          RS       2    FLOW      -1
3832          RC   0.018   0.018   0.018    2115   0.004
3833          RX       0       0      21      21     109     109     130     130
3834          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3835          KK   SB205
3836          KM  RUNOFF FROM SUB-BASIN 205
3837          BA   0.213
3838          LG    0.20    0.25    4.45    0.46      44
3839          UC     0.6   0.582
3840          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3841          UA     100
              *

3842          KK   CP205
3843          KM  TEMPE CANAL & ALMA SCHOOL RD: COMBINE RS204N, SB205
3844          HC       2
              *

3845          KK     CPD
3846          KM  COMBINE CPC, CP251, SB201, AND CP205 IN ORDER TO REDUCE THE NUMBER OF
3847          KM  HYDROGRAPHS IN THE MODEL.  CPD IS NOT REPRESENTATIVE OF A PHYSICAL
3848          KM  CONCENTRAITON POINT.
3849          HC       4
              *
              * ******************************************************************
              * *                                                                *
              * * 300 SERIES WATERSHED -                                        *
              * * BOUNDED TO THE NORTH BY US60 (SUPERSTITION) FREEWAY, TO THE EAST  *
              * * BY THE SOUTHERN-PACIFIC RAILROAD, TO THE SOUTH BY WESTERN CANAL,  *
              * * AND TO THE WEST BY PRICE ROAD.                                   *
              * *                                                                *
              * ******************************************************************
              *
              *   CHANGED: START TIME AND DATE, NO. OF TIME STEPS FROM 2000 TO 600,
              *   ADDED: NDXMIN OF 6 TO ALL RK RECORDS, RECORDS FOR IFDIVR & CP402
              *   MIKE DUNCAN   FCD   05-04-04
              *
1                                    HEC-1 INPUT                                    PAGE 99

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

3850          KK   SB401
3851          KM  RUNOFF FROM SUB-BASIN 401
3852          BA   0.228
3853          IN      15
3854          PB    2.86
3855          KM  AREAL REDUCTION BASED ON THE 300 AND 400 SERIES WATERSHEDS.THE AREA IS BOUNDED
3856          KM  BY THE US60 TO THE NORTH,SPRR THE EAST,WESTERN CANAL ON THE SOUTH AND SR 101
3857          KM  ON THE WEST.
3858          KM  TOTAL POINT RAINFALL = 3.00 INCHES, AREA REDUCED = 6.77
3859          KM  AREAL REDUCTION FACTOR = 0.953
              *
3860          PC   0.011   0.018   0.027   0.040   0.051   0.061   0.072   0.083   0.094   0.107
3861          PC   0.122   0.143   0.187   0.274   0.460   0.684   0.820   0.887   0.927   0.948
3862          PC   0.962   0.974   0.988   1.000
3863          LG    0.10    0.27    4.80    0.38      60
3864          UC   0.446   0.334
3865          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3866          UA     100
              *

3867          KK    D401
3868          KM  DIVERT RETENTION VOLUME FOR OPEN SPACE LOCATED ALONG BASELINE RD
3869          KM  APPROXIMATELY 1 FT OF RETENTION DEPTH
3870          KM  TOTAL VOLUME = 33 ACRE-FT
3871          DT  RET401      33
3872          DI       0    5000   10000
3873          DQ       0    5000   10000
              *

3874          KK   RS401
3875          KM  BASELINE RD & COUNTRY CLUB: ROUTE STREET FLOW CP401 TO CP301 VIA BASELINE RD
3876          KM  6-LANE ARTERIAL
3877          RS       3    FLOW      -1
3878          RC   0.018   0.018   0.018    2340  0.0006
3879          RX       0       0      21      21     109     109     130     130
3880          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3881          KK   SB301
3882          KM  RUNOFF FROM SUB-BASIN 301
3883          BA   0.230
```

```
3884          LG    0.26    0.25    4.80    0.41      42
3885          UC   1.229   0.988
3886          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3887          UA     100
              *

3888          KK   CP301
3889          KM  BASELINE RD & EXTENTION RD: COMBINE SB301,RS401
3890          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE100

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

3891          KK   S301W
3892          KM  BASELINE RD & EXTENSION RD: STREET FLOW WEST S301W VS. STREET FLOW SOUTH S301S
3893          KM  NOT A SURVEYED INTERSECTION; TYPICAL CROSS SECTION USED
3894          KM  BASELINE RD IS A 4-LANE ARTERIAL, EXTENSION RD IS AN 80-FT RIGHT-OF-WAY
3895          KM  COLLECTOR
3896          DT   S301S
3897          DI       0      42     354    1052    2016    3206    4596
3898          DQ       0      11      79     208     381     591     833
              *

3899          KK  RS301W
3900          KM  BASELINE RD & EXTENSION RD: ROUTE STREET FLOW S301W TO CP302 VIA BASELINE RD
3901          KM  6-LANE ARTERIAL
3902          RS       9    FLOW      -1
3903          RC   0.018   0.018   0.018    3350  0.0006
3904          RX       0       0      21      21     109     109     130     130
3905          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3906          KK   SB302
3907          KM  RUNOFF FROM SUB-BASIN 302
3908          BA   0.260
3909          LG    0.22    0.25    4.80    0.37      44
3910          UC   1.017   0.832
3911          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3912          UA     100
              *

3913          KK   CP302
3914          KM  BASELINE RD & ALMA SCHOOL RD: COMBINE SB302,RS301W
3915          HC       2
              *

3916          KK    S302
3917          KM  BASELINE RD & ALMA SCHOOL RD: STREET FLOW S302 VS. PIPE FLOW P302
3918          KM  48" RCP PIPE - CAPACITY = 29CFS
3919          DT    P302
3920          DI       0      29   10000
3921          DQ       0      29      29
              *

3922          KK   S302W
3923          KM  BASELINE RD & ALMA SCHOOL RD:
3924          KM  STREET FLOW WEST S302W VS. STREET FLOW SOUTH S302S
3925          KM  SURVEYED INTERSECTION
3926          DT   S302S
3927          DI       0      18     198     727    1564    2674
3928          DQ       0       0      12     125     358     712
              *
1                                          HEC-1 INPUT                                          PAGE101

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

3929          KK  RS302W
3930          KM  BASELINE RD & ALMA SCHOOL RD: ROUTE STREET FLOW S302W TO CP303 VIA BASELINE RD
3931          KM  6-LANE ARTERIAL
3932          RS       6    FLOW      -1
3933          RC   0.018   0.018   0.018    2750  0.0004
3934          RX       0       0      21      21     109     109     130     130
3935          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3936          KK   SB303
3937          KM  RUNOFF FROM SUB-BASIN 303
3938          BA   0.230
3939          LG    0.23    0.25    4.80    0.36      41
3940          UC   0.908   0.762
3941          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3942          UA     100
```

```
                 *

3943             KK    P302
3944             KM  RETURN DIVERTED PIPE FLOW FROM CP302
3945             KM  FOR ROUTING WEST TO CP303
3946             DR    P302
                 *

3947             KK   RP302
3948             KM  ROUTE PIPE FLOW P302 TO CP303 VIA BASELINE ROAD
3949             KM  48" RCP PIPE - CAPACITY = 29CFS
3950             RK    5000   0.001   0.013            CIRC       4                       6
                 *

3951             KK   CP303
3952             KM  BASELINE RD & LONGMORE: COMBINE SB303,RP302,RS302W
3953             HC       3
                 *

3954             KK    S303
3955             KM  BASELINE RD & LONGMORE: STREET FLOW S303 VS. PIPE FLOW P303
3956             KM  48" RCP PIPE - CAPACITY = 48CFS
3957             DT    P303
3958             DI       0      48   10000
3959             DQ       0      48      48
                 *

3960             KK   RS303
3961             KM  BASELINE RD & LONGMORE: ROUTE STREET FLOW S303 TO CP304 VIA BASELINE RD
3962             KM  6-LANE ARTERIAL
3963             RS       4    FLOW      -1
3964             RC   0.018   0.018   0.018    2700  0.0011
3965             RX       0       0      21      21     109     109     130     130
3966             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *
1                                                HEC-1 INPUT                                                    PAGE102

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

3967             KK   SB304
3968             KM  RUNOFF FROM SUB-BASIN 304
3969             BA   0.230
3970             LG    0.20    0.24    4.80    0.36      49
3971             UC    1.05   0.881
3972             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3973             UA     100
                 *

3974             KK    D304
3975             KM  DIVERT RETENTION VOLUME FOR A PORTION OF THE DOBSON RANCH LAKES
3976             KM  LAKE IS LOCATED NEAR THE INTERSECTION OF BASELINE RD & DOBSON RD
3977             KM  APPROXIMATELY 5 FT OF RETENTION DEPTH FOR THE LAKE
3978             KM  TOTAL VOLUME = 25 ACRE-FT
3979             DT  RET304      25
3980             DI       0    5000   10000
3981             DQ       0    5000   10000
                 *

3982             KK    P303
3983             KM  RETURN DIVERTED PIPE FLOW FROM CP303
3984             KM  FOR ROUTING WEST TO CP304
3985             DR    P303
                 *

3986             KK   RP303
3987             KM  ROUTE PIPE FLOW P303 TO CP304 VIA BASELINE RD
3988             KM  48" RCP PIPE - CAPACITY = 48CFS
3989             RK    5000  .00011   0.013            CIRC       4                       6
                 *

3990             KK   CP304
3991             KM  BASELINE RD & DOBSON RD: COMBINE D304,RP303,RS303
3992             HC       3
                 *

3993             KK    S304
3994             KM  BASELINE RD & DOBSON RD: STREET FLOW S304 VS. PIPE FLOW P304
3995             KM  48" RCP PIPE - CAPACITY = 48CFS
3996             DT    P304
3997             DI       0      48   10000
3998             DQ       0      48      48
                 *

3999             KK   S304W
```

```
4000          KM  BASELINE RD & DOBSON RD: STREET FLOW WEST S304W VS. STREET FLOW SOUTH S304S
4001          KM  SURVEYED INTERSECTION
4002          DT   S304S
4003          DI       0       3      22      69     163     597     914    1303    1733    2232
4004          DQ       0       2      15      47     115     399     592     830    1100    1400
              *
1                                          HEC-1 INPUT                                          PAGE103

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


4005          KK  RS304W
4006          KM  BASELINE RD & DOBSON RD: ROUTE STREET FLOW S304 TO CP305 VIA BASELINE RD
4007          KM  6-LANE ARTERIAL
4008          RS      10    FLOW      -1
4009          RC   0.018   0.018   0.018    4560  0.0013
4010          RX       0       0      21      21     109     109     130     130
4011          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4012          KK   SB305
4013          KM  RUNOFF FROM SUB-BASIN 305
4014          BA   0.360
4015          LG    0.21    0.23    4.80    0.35      38
4016          UC   1.042   0.907
4017          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4018          UA     100
              *

4019          KK   CP305
4020          KM  BASELINE RD & SR 101: COMBINE SB305,RS304W
4021          HC       2
              *

4022          KK   BS305
4023          KM  ROUTE FLOW THROUGH LAKE AND SUBBASIN. ASSUMES LAKE IS THE LOW POINT
4024          KM  IN THE WATERSHED. FLOWS WILL POND WITHIN ENTIRE WATERSHED UNTIL AN
4025          KM  ULTIMATE OUTFALL ELEVATION IS REACHED. FOR SUB-BASIN 305 THE MAXIMUM
4026          KM  STORAGE EVELATION IS 1197.26.
4027          RS       1    STOR       0
4028          SA    14.8    17.9    17.9    32.7     230
4029          SE  1194.4  1195.1  1196.5  1197.2    1198
4030          SQ       0       0      12      15      16
              *

4031          KK  IFDIVR
4032          KM  INFLOW FROM THE GILBERT-CHANDLER ADMS VOLUME II (1994)
4033          KM  FLOW IS DIVERTED OUT OF SUB-BASIN 28 --RR28--
4034          KM  AT RAILROAD TRESTLE ONE-HALF MILE SOUTH OF BASELINE RD
4035          BA     0.1
4036          ZR     =QI  A=GCADMSFUTURE  B=SOFBASELINE&SPRR  C=FLOW  F=6HR FLU FWY
              *

4037          KK  RSDIVR
4038          KM  GUADALUPE RD & CENTER ST: ROUTE INFLOW IFDIVR TO CP402 VIA GUADALUPE RD
4039          KM  4-LANE ARTERIAL
4040          RS      25    FLOW      -1
4041          RC   0.018   0.018   0.018    2700  0.0004
4042          RX       0       0      31      31      99      99     130     130
4043          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                          HEC-1 INPUT                                          PAGE104

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


4044          KK   SB402
4045          KM  RUNOFF FROM SUB-BASIN 402
4046          BA   0.554
4047          LG    0.13    0.27    4.80    0.38      56
4048          UC   0.617   0.412
4049          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4050          UA     100
              *

4051          KK    D402
4052          KM  VARIOUS RETENTION BASINS LOCATED THROUGHOUT THE SUB-BASIN
4053          KM  BASIN VOLUME BASED ON THE 100-YEAR 2 HOUR EVENT AS CALCULATED
4054          KM  IN THE FCDMC DRAINAGE DESIGN MANUAL VOLUME I HYDROLOGY
4055          KM  TOTAL VOLUME = 57 ACRE-FT
4056          DT  RET402      57
4057          DI       0    5000   10000
4058          DQ       0    5000   10000
              *
```

```
4059          KK   CP402
4060          KM  GUADALUPE RD & COUNTRY CLUB DR: COMBINE D402,RSDIVR
4061          HC       2
              *

4062          KK   RS402
4063          KM  GUADALUPE RD & COUNTRY CLUB DR: ROUTE STREET FLOW CP402 TO CP308
4064          KM  VIA GUADALUPE RD
4065          KM  4-LANE ARTERIAL
4066          RS       9    FLOW      -1
4067          RC   0.018   0.018   0.018    2950  0.0004
4068          RX       0       0      31      31      99      99     130     130
4069          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

4070          KK   S301S
4071          KM  RETURN DIVERTED FLOW FROM CP301
4072          KM  FOR ROUTING SOUTH TO CP306
4073          DR   S301S
              *

4074          KK  RS301S
4075          KM  ROUTE STREET FLOW S301S TO CP306 VIA EXTENSION RD
4076          KM  80-FT RIGHT-OF-WAY COLLECTOR
4077          RS       2    FLOW      -1
4078          RC   0.018   0.018   0.018    2750  0.0007
4079          RX       0       0      17      17      63      63      80      80
4080          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
1                                          HEC-1 INPUT                                                          PAGE105

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

4081          KK   SB306
4082          KM  RUNOFF FROM SUB-BASIN 306
4083          BA   0.230
4084          LG    0.24    0.15     8.8    0.08      38
4085          UC   0.863   0.691
4086          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4087          UA     100
              *

4088          KK   CP306
4089          KM  MEDINA AVE & EXTENSION RD: COMBINE RS301S,SB306
4090          HC       2
              *

4091          KK   RS306
4092          KM  ROUTE STREET FLOW CP306 TO CP308 VIA EXTENSION ROAD
4093          KM  80-FT RIGHT-OF-WAY COLLECTOR
4094          RS       5    FLOW      -1
4095          RC   0.018   0.018   0.018    2700  0.0004
4096          RX       0       0      17      17      63      63      80      80
4097          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
              *

4098          KK   SB308
4099          KM  RUNOFF FROM SUB-BASIN 308
4100          BA   0.280
4101          LG    0.24    0.15    9.70    0.06      28
4102          UC   1.042   0.800
4103          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4104          UA     100
              *

4105          KK   CP308
4106          KM  GUADALUPE RD & EXTENSION RD: COMBINE RS306,SB308,RS402
4107          HC       3
              *

4108          KK    S308
4109          KM  GUADALUPE RD & EXTENSION RD: STREET FLOW S308 VS. PIPE FLOW P308
4110          KM  36" RCP PIPE - CAPACITY = 13CFS
4111          DT    P308
4112          DI       0      13   10000
4113          DQ       0      13      13
              *

4114          KK   S308W
4115          KM  GUADALUPE RD & EXTENSION RD: STREET FLOW WEST S308W VS. STREET FLOW SOUTH S308
4116          KM  NOT A SURVEYED INTERSECTION; TYPICAL CROSS SECTION USED
4117          KM  GUADALUPE RD IS A 4-LANE ARTERIAL, EXTENTION RD IS A 80-FT RIGHT-OF-WAY
4118          KM  COLLECTOR
```

```
4119        DT   S308S
4120        DI       0      12     108     308     580     915    1306    1747    2235
4121        DQ       0       4      30      79     144     223     315     418     531
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4122        KK  RS308W
4123        KM  GUADALUPE RD & EXTENSION RD:
4124        KM  ROUTE STREET FLOW S308W TO CP309 VIA GUADALUPE RD
4125        KM  4-LANE ARTERIAL
4126        RS       4    FLOW      -1
4127        RC   0.018   0.018   0.018    2280  0.0004
4128        RX       0       0      31      31      99      99     130     130
4129        RY       4    0.18    0.18       0       0    0.18    0.18       4
            *

4130        KK   S302S
4131        KM  RETURN DIVERTED STREET FLOW FROM CP302
4132        KM  FOR ROUTING SOUTH TO CP307
4133        DR   S302S
            *

4134        KK  RS302S
4135        KM  ROUTE STREET FLOW S302S TO CP307 VIA ALMA SCHOOL RD
4136        KM  6-LANE ARTERIAL
4137        RS      31    FLOW      -1
4138        RC   0.018   0.018   0.018    2630  0.0001
4139        RX       0       0      31      31      99      99     130     130
4140        RY       4    0.14    0.14       0       0    0.14    0.14       4
            *

4141        KK   SB307
4142        KM  RUNOFF FROM SUB-BASIN 307
4143        BA   0.270
4144        LG    0.23    0.15       7    0.15      34
4145        UC   1.296   1.204
4146        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4147        UA     100
            *

4148        KK    D307
4149        KM  DIVERT RETENTION VOLUME FOR WOODGLEN PARK RETENTION BASIN
4150        KM  APPROXIMATELY 3 FT OF RETENTION DEPTH
4151        KM  TOTAL VOLUME = 24 ACRE-FT
4152        DT  RET307      24
4153        DI       0    5000   10000
4154        DQ       0    5000   10000
            *

4155        KK   CP307
4156        KM  MEDINA AVE & ALMA SCHOOL RD: COMBINE RS302S,D307
4157        HC       2
            *

4158        KK    S307
4159        KM  MEDINA AVE & ALMA SCHOOL RD: STREET FLOW S307 VS. PIPE FLOW P307
4160        KM  36" RCP PIPE - CAPACITY = 13CFS
4161        DT    P307
4162        DI       0      13   10000
4163        DQ       0      13      13
            *
1                                          HEC-1 INPUT                                                    PAGE107

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

4164        KK   RS307
4165        KM  ROUTE STREET FLOW S307 TO CP309 VIA ALMA SCHOOL RD
4166        KM  4-LANE ARTERIAL
4167        RS       2    FLOW      -1
4168        RC   0.018   0.018   0.018    2590  0.0004
4169        RX       0       0      31      31      99      99     130     130
4170        RY       4    0.14    0.14       0       0    0.14    0.14       4
            *

4171        KK   SB309
4172        KM  RUNOFF FROM SUB-BASIN 309
4173        BA   0.220
4174        LG    0.22    0.15    9.70    0.06      40
4175        UC   0.954   0.682
4176        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4177        UA     100
```

```
                *

4178            KK    P308
4179            KM  RETURN DIVERTED PIPE FLOW FROM CP308
4180            KM  FOR ROUTING WEST TO CP309
4181            DR    P308
                *

4182            KK   RP308
4183            KM  ROUTE PIPE FLOW P308 TO CP309 VIA GUADALUPE RD
4184            KM  36" RCP PIPE - CAPACITY = 13CFS
4185            RK    4000  0.0004   0.013            CIRC       3                        2
                *

4186            KK   CP309
4187            KM  GUADALUPE RD & ALMA SCHOOL RD: COMBINE RS307,SB309,RP308,RS308W
4188            HC       4
                *

4189            KK    S309
4190            KM  GUADALUPE RD & ALMA SCHOOL RD: STREET FLOW S309 VS. PIPE FLOW P309
4191            KM  27" RCP PIPE - CAPACITY = 6CFS
4192            DT    P309
4193            DI       0       6   10000
4194            DQ       0       6       6
                *

4195            KK   S309W
4196            KM  GUADALUPE RD & ALMA SCHOOL RD:
4197            KM  STREET FLOW WEST S309W VS. STREET FLOW SOUTH S309S
4198            KM  SURVEYED INTERSECTION
4199            DT   S309S
4200            DI       0      16     178     611    1258    2081    3065
4201            DQ       0      10     109     367     754    1248    1832
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4202            KK  RS309W
4203            KM  GUADALUPE RD & ALMA SCHOOL RD:
4204            KM  ROUTE STREET FLOW S309W TO S310A VIA GUADALUPE RD
4205            KM  4-LANE ARTERIAL
4206            RS      10    FLOW      -1
4207            RC   0.018   0.018   0.018    5360  0.0011
4208            RX       0       0      31      31      99      99     130     130
4209            RY       4    0.14    0.14       0       0    0.14    0.14       4
                *

4210            KK   S310A
4211            KM  GUADALUPE RD & DOBSON RD: STREET FLOW S310A VS. PIPE FLOW P310A
4212            KM  42" RCP PIPE - CAPACITY = 32CFS
4213            DT   P310A
4214            DI       0      32   10000
4215            DQ       0      32      32
                *

4216            KK  S310AW
4217            KM  GUADALUPE RD & DOBSON RD: STREET FLOW WEST S310AW VS. STREET FLOW SOUTH S310S
4218            KM  SURVEYED INTERSECTION
4219            DT  S310AS
4220            DI       0      12     129     540    1318    2388    3667
4221            DQ       0       7      51     223     487     828    1212
                *

4222            KK  RS310A
4223            KM  GUADALUPE RD & DOBSON RD: ROUTE STREET FLOW S310AW TO CP311A
4224            KM  VIA GUADALUPE RD
4225            KM  4-LANE ARTERIAL
4226            RS      18    FLOW      -1
4227            RC   0.018   0.018   0.018    5120  0.0004
4228            RX       0       0      31      31      99      99     130     130
4229            RY       4    0.14    0.14       0       0    0.14    0.14       4
                *

4230            KK   P310A
4231            KM  RETURN DIVERTED PIPE FLOW FROM S310A
4232            KM  FOR ROUTING WEST TO CP311A
4233            DR   P310A
                *

4234            KK  RP310A
4235            KM  ROUTE PIPE FLOW TO LAKE
4236            KM  42" RCP PIPE - CAPACITY = 32CFS
```

```
4237          RK    2270   0.001   0.013            CIRC     3.5                        6
              *

4238          KK    P307
4239          KM  RETURN DIVERTED PIPE FLOW FROM CP307
4240          KM  FOR ROUTING WEST TO CP310B
4241          DR    P307
              *
1                                          HEC-1 INPUT                                                    PAGE109

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

4242          KK    P309
4243          KM  RETURN DIVERTED PIPE FLOW FROM 309
4244          KM  FOR ROUTING WEST TO CP310B THROUGH GOLF COURSE
4245          DR    P309
              *

4246          KK  CP310B
4247          KM  COMBINE PIPE FLOWS P307 & P309
4248          HC       2
              *

4249          KK  RC310B
4250          KM  ROUTE PIPE FLOW THROUGH DOBSON RANCH GOLF COURSE
4251          KM  ROUTING IS ASSUMED TO FOLLOW LAKES AND CONNENECTING CONVEYANCE CHANNELS
4252          RS       1    FLOW      -1
4253          RC    0.03    0.03    0.03    4600  0.0001
4254          RX       0       5      10      15      55      60      65      70
4255          RY       4       2       1       0       0       1       2       4
              *

4256          KK   S304S
4257          KM  RETURN DIVERTED STREET FLOW FROM CP304
4258          KM  FOR ROUTING SOUTH TO CP310
4259          DR   S304S
              *

4260          KK  RS304S
4261          KM  ROUTE STREET FLOW S304S TO CP310 VIA DOBSON ROAD
4262          KM  4-LANE ARTERIAL
4263          RS      10    FLOW      -1
4264          RC   0.018   0.018   0.018    2850  0.0007
4265          RX       0       0      31      31      99      99     130     130
4266          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4267          KK   SB310
4268          KM  RUNOFF FROM SUB-BASIN 310
4269          BA   1.110
4270          LG    0.22    0.15    7.60    0.12      31
4271          UC   1.321   0.702
4272          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4273          UA     100
              *

4274          KK   D310A
4275          KM  DIVERT RETENTION VOLUME FOR DOBSON RANCH GOLF COURSE
4276          KM  LAKES WITHIN THE GOLF COURSE AVERAGE 3 FT OF RETENTION DEPTH
4277          KM  TOTAL VOLUME = 23 ACRE-FT
4278          DT  RET310      23
4279          DI       0    5000   10000
4280          DQ       0    5000   10000
              *
1                                          HEC-1 INPUT                                                    PAGE110

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

4281          KK   CP310
4282          KM  COMBINE RS304S,D310A,RP310B
4283          HC       3
              *

4284          KK   BS310
4285          KM  LAKE AT DOBSON RANCH PARK PROVIDING RETENTION
4286          KM  OVERFLOW WILL WEIR OVER DOBSON RD AND BE ROUTED VIA THE LAKE
4287          KM  THROUGH SUB-BASIN 311
4288          RS       1    STOR       0
4289          SA       6     6.3     6.7       7     7.4     7.8
4290          SE       1       2       3       4       5       6
4291          SQ       0       0       0       0     300     942
              *
```

```
4292          KK   RC310
4293          KM  ROUTE FLOW THROUGH LAKES
4294          KM  CHANNEL CROSS SECTION BASED ON AN AVERAGE WIDTH
4295          RS       1    FLOW      -1
4296          RC    0.03    0.03    0.03    5800  0.0001
4297          RX       0       5      10      15     115     120     125     130
4298          RY       4       2       1       0       0       1       2       4
              *

4299          KK  CP311A
4300          KM  COMBINE RC310,RP310A,RS310A
4301          HC       3
              *

4302          KK   SB311
4303          KM  RUNOFF FROM SUB-BASIN 311
4304          BA   0.830
4305          LG    0.22    0.23    5.70    0.24      32
4306          UC   1.408   0.889
4307          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4308          UA     100
              *

4309          KK    P304
4310          KM  RETURN DIVERTED PIPE FLOW FROM 304
4311          KM  FOR ROUTING SOUTH THROUGH TO LAKES TO CP311
4312          DR    P304
              *

4313          KK   CP311
4314          KM  GUADALUPE RD & SR 101: COMBINE SB311,P304,CP311A
4315          HC       3
              *
1                                        HEC-1 INPUT                                          PAGE111

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

4316          KK   BS311
4317          KM  ROUTE FLOW THROUGH LAKE AND SUBBASIN. ASSUMES LAKE IS THE LOW POINT
4318          KM  IN THE WATERSHED. FLOWS WILL POND AT THE SOUTHWEST CORNER OF THE SUB-BASIN
4319          KM  UNTIL AN ULTIMATE OUTFALL ELEVATION IS REACHED. THE OUTFALL IS LOCATED
4320          KM  APPROXIMATELY 170-FT SOUTH OF GUADALUPE RD ON CARRIAGE LANE. THE ELEVATION OF
4321          KM  OF THE OUTFALL IS 1194.3
4322          KM  A 36" STORM DRAIN OUTLETS TO THE 84" ADOT PIPE STARTING AT ELEVATION 1189.5
4323          KM  A 40FT WEIR IS MODELED FOR THE CARRIAGE LANE HIGH POINT AT ELEVATION 1194.3
4324          RS       1    STOR       0
4325          SA    43.9    43.9    43.9    43.9    43.9    44.2    48.5    55.3     100
4326          SE  1189.5 1190.50  1191.5  1193.5    1194  1194.1  1194.3 1195.08    1197
4327          SQ       0       5      16      50      55      55      57     133    1000
              *

4328          KK    S311
4329          KM  GUADALUPE RD & SR 101: STREET FLOW SOUTH S311 VS. PIPE FLOW P311
4330          KM  36" RCP PIPE - CAPACITY =57CFS
4331          DT    P311
4332          DI       0      57   10000
4333          DQ       0      57      57
              *

4334          KK   RS311
4335          KM  GUADALUPE RD & SR 101: ROUTE STREET FLOW S311 SOUTH TO CARRIAGE LANE PARK
4336          KM  VIA CARRIAGE LANE
4337          KM  60-FT RIGHT-OF-WAY COLLECTOR
4338          RS       4    FLOW      -1
4339          RC   0.018   0.018   0.018    2186  0.0013
4340          RX       0       0      13      13      47      47      60      60
4341          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

4342          KK   S308S
4343          KM  RETURN DIVERTED STREET FLOW FROM CP308
4344          KM  FOR ROUTING SOUTH TO CP312
4345          DR   S308S
              *

4346          KK  RS308S
4347          KM  ROUTE STREET FLOW S308S TO CP312 ALONG EXTENSION ROAD
4348          KM  80-FT RIGHT-OF-WAY COLLECTOR
4349          RS       9    FLOW      -1
4350          RC   0.018   0.018   0.018    2750  0.0007
4351          RX       0       0      17      17      63      63      80      80
4352          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
```

```
4353          KK   SB403
4354          KM  RUNOFF FROM SUB-BASIN 403
4355          BA   0.253
4356          LG    0.21    0.28    4.80    0.33      21
4357          UC   0.404   0.282
4358          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4359          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


4360          KK    D403
4361          KM  DIVERT RETENTION VOLUME FOR RANCHO DEL MAR PARK
4362          KM  APPROXIMATELY 1 FT OF RETENTION DEPTH
4363          KM  TOTAL VOLUME = 21 ACRE-FT
4364          DT  RET403      21
4365          DI       0    5000   10000
4366          DQ       0    5000   10000
              *

4367          KK   RS403
4368          KM  WESTERN CANAL & COUNTRY CLUB DR: ROUTE STREET FLOW SB403 TO CP312
4369          KM  VIA PERALTA DR
4370          KM  60-FT RIGHT-OF-WAY COLLECTOR
4371          RS       4    FLOW      -1
4372          RC   0.018   0.018   0.018    2610  0.0004
4373          RX       0       0      13      13      47      47      60      60
4374          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

4375          KK   SB312
4376          KM  RUNOFF FROM SUB-BASIN 312
4377          BA   0.280
4378          LG    0.21    0.15    9.70    0.06      45
4379          UC   0.846   0.583
4380          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4381          UA     100
              *

4382          KK   CP312
4383          KM  WESTERN CANAL & EXTENSION RD: COMBINE RS308S,SB312,RS403
4384          HC       3
              *

4385          KK    S312
4386          KM  WESTERN CANAL & EXTENSION RD: STREET FLOW S312 VS. PIPE FLOW P312
4387          KM  54" RCP PIPE - CAPACITY = 39CFS
4388          DT    P312
4389          DI       0      39   10000
4390          DQ       0      39      39
              *

4391          KK   RS312
4392          KM  WESTERN CANAL & EXTENSION ROAD:
4393          KM  ROUTE STREET FLOW S312 TO CP313 VIA PERALTA AVE
4394          KM  60-FT RIGHT-OF-WAY COLLECTOR
4395          RS       4    FLOW      -1
4396          RC   0.018   0.018   0.018    2610  0.0004
4397          RX       0       0      13      13      47      47      60      60
4398          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *
1                                          HEC-1 INPUT                                          PAGE113

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


4399          KK   S309S
4400          KM  RETURN DIVERTED FLOW FROM CP309
4401          KM  FOR ROUTING SOUTH TO CP313
4402          DR   S309S
              *

4403          KK  RS309S
4404          KM  ROUTE STREET FLOW S309S TO CP313 VIA ALMA SCHOOL ROAD
4405          KM  4-LANE ARTERIAL
4406          RS       5    FLOW      -1
4407          RC   0.018   0.018   0.018    2590  0.0004
4408          RX       0       0      31      31      99      99     130     130
4409          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4410          KK   SB313
4411          KM  RUNOFF FROM SUB-BASIN 313
```

```
4412          BA   0.220
4413          LG    0.20    0.15    8.40    0.09      47
4414          UC   0.542   0.364
4415          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4416          UA     100
              *

4417          KK    P312
4418          KM  RETURN DIVERTED PIPE FLOW FROM CP312
4419          KM  FOR ROUTING WEST TO CP313
4420          DR    P312
              *

4421          KK   RP312
4422          KM  ROUTE PIPE FLOW P312 TO CP313 VIA PERALTA AVE
4423          KM  54" RCP PIPE - CAPACITY = 39CFS
4424          RK    2610  0.0004   0.013            CIRC     4.5                      6
              *

4425          KK   CP313
4426          KM  WESTERN CANAL & ALMA SCHOOL RD: COMBINE RS309S,SB313,RP312,RS312
4427          HC       4
              *

4428          KK    S313
4429          KM  WESTERN CANAL & ALMA SCHOOL RD: STREET FLOW S313 VS. PIPE FLOW P313
4430          KM  27" RCP PIPE - CAPACITY = 11 CFS
4431          DT    P313
4432          DI       0     100    1000
4433          DQ       0      11      11
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4434          KK   RS313
4435          KM  WESTERN CANAL & ALMA SCHOOL RD:
4436          KM  ROUTE STREET FLOW S313 TO CP314 VIA PERALTA AVE
4437          KM  60-FT RIGHT-OF-WAY COLLECTOR
4438          RS       4    FLOW      -1
4439          RC   0.018   0.018   0.018    5330  0.0013
4440          RX       0       0      13      13      47      47      60      60
4441          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

4442          KK  S310AS
4443          KM  RETURN DIVERTED STREET FLOW FROM S310A
4444          KM  FOR ROUTING SOUTH TO CP314
4445          DR  S310AS
              *

4446          KK  R310AS
4447          KM  ROUTE STREET FLOW S310AS TO CP314 VIA DOBSON RD
4448          KM  4-LANE ARTERIAL
4449          RS       8    FLOW      -1
4450          RC   0.018   0.018   0.018    2610  0.0008
4451          RX       0       0      31      31      99      99     130     130
4452          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4453          KK   SB314
4454          KM  RUNOFF FROM SUB-BASIN 314
4455          BA   0.500
4456          LG    0.21    0.15    8.80    0.07      47
4457          UC   0.908   0.594
4458          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4459          UA     100
              *

4460          KK   D314A
4461          KM  DIVERT RETENTION VOLUME FOR DOBSON HIGH SCHOOL
4462          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR PLAYING FIELDS
4463          KM  APPROXIMATELY 3 FT RETENTION DEPTH IN THE PARKING LOT
4464          KM  TOTAL VOLUME = 27 ACRE-FT
4465          DT  RET314      27
4466          DI       0    5000   10000
4467          DQ       0    5000   10000
              *

4468          KK    P313
4469          KM  RETURN DIVERTED PIPE FLOW FROM CP313
4470          KM  FOR ROUTING WEST TO CP314
4471          DR    P313
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4472          KK   RP313
4473          KM  ROUTE PIPE FLOW P313 TO CP314
4474          KM  27" RCP PIPE - CAPACITY = 11CFS
4475          RK    5330  0.0013   0.013            CIRC    2.25                        6
              *

4476          KK   CP314
4477          KM  WESTERN CANAL & DOBSON RD: COMBINE R310AS,D314A,RP313,RS313
4478          HC       4
              *

4479          KK   BS314
4480          KM  PALO VERDE PARK RETENTION BASIN
4481          KM  VOLUME BASED ON AS-BUILT INFORMATION
4482          RS       1    STOR       0
4483          SA       1       9      12      13      14
4484          SE    1182    1184    1190    1194    1196
4485          SQ      15      25      41      50    5000
              *

4486          KK    S314
4487          KM  WESTERN CANAL & DOBSON RD: STREET FLOW S314 VS. PIPE FLOW P314
4488          KM  24" RCP PIPE - CAPACITY = 2CFS
4489          DT    P314
4490          DI       0     100   10000
4491          DQ       0       2       2
              *

4492          KK   RC314
4493          KM  WESTERN CANAL & DOBSON RD:
4494          KM  ROUTE FLOW ALONG GRASS-LINED CHANNEL ADJACENT TO WESTERN CANAL
4495          RS       1    FLOW      -1
4496          RC    0.03    0.03    0.03    5240   0.002
4497          RX       0       1      15      30      75      85      93      94
4498          RY       6       5       3       0       0       3       5       6
              *

4499          KK   SB315
4500          KM  RUNOFF FROM SUB-BASIN 315
4501          BA   0.490
4502          LG    0.23    0.15    9.70    0.06      32
4503          UC   0.713   0.453
4504          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4505          UA     100
              *

4506          KK    P314
4507          KM  RETURN DIVERTED PIPE FLOW FROM CP314
4508          KM  FOR ROUTING WEST TO CP315
4509          DR    P314
              *
1                                    HEC-1 INPUT                                                    PAGE116

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

4510          KK   RP314
4511          KM  ROUTE PIPE FLOW P314 TO CP315 VIA PERALTA AVE
4512          KM  24" RCP PIPE - CAPACITY = 2CFS
4513          RK    5250   .0001   0.013            CIRC       2                        6
              *

4514          KK   CP315
4515          KM  WESTERN CANAL & SR 101: COMBINE RS311,SB315,RP314,RC314
4516          HC       4
              *

4517          KK   BS315
4518          KM  CARRIGE LANE PARK RETENTION BASIN
4519          KM  VOLUME BASED ON AS-BUILT INFORMATION
4520          KM  AN INLET STRUCTURE LOCATED AT THE LOWEST ELEVATION OF THE BASIN
4521          KM  DRAINS FLOWS TO THE 84" ADOT PIPE VIA A 60" PIPE
4522          KM  ONCE THE BASIN FILLS TO ELEVATION 1190 A SEPERATE INLET STRUCTURE DRAINS
4523          KM  DIRECTLY INTO THE 84" PIPE
4524          KM  BLEED-OFF FLOWS BASED ON THE 60" PIPE FROM ELEVATION 1171 TO 1190
4525          KM  BLEED-OFF FLOWS BASED ON THE 84" PIPE FROM ELEVATION 1190 TO 1196
4526          RS       1    STOR       0
4527          SA     0.1     3.8     6.7     9.6    14.2    19.8      22
4528          SE    1171    1177    1180    1185    1190    1196    1198
4529          SQ     135     215     245     290     325     800   10000
```

```
                    *

4530                KK   RP315
4531                KM  WESTERN CANAL & SR 101: ROUTE PIPE FLOW FROM CARRIAGE LANE PARK TO CP316
4532                KM  84" RCP PIPE - CAPACITY = 64CFS
4533                RK    2550  0.0001   0.013            CIRC       7                       6
                    *

4534                KK    P311
4535                KM  RETURN DIVERTED PIPE FLOW FROM CP311
4536                KM  FOR ROUTING WEST TO CP316
4537                DR    P311
                    *

4538                KK   RP311
4539                KM  GUADALUPE RD & SR 101: ROUTE PIPE FLOW P311 TO ADOT PIPE AT PRICE RD
4540                KM  36" RCP PIPE - CAPACITY = 57CFS
4541                RK    1150   0.002   0.013            CIRC       3                       6
                    *

4542                KK   CP316
4543                KM  COMBINE RP315,BS311
4544                HC       2
                    *
1                                                HEC-1 INPUT                                          PAGE117

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


4545                KK   RP316
4546                KM  GUADALUPE RD & SR 101: ROUTE PIPE FLOW CP116 TO CP117 VIA PRICE RD
4547                KM  84" RCP PIPE - CAPACITY = 64CFS
4548                RK    5380  0.0001   0.013            CIRC       7                       2
                    *

4549                KK   CP317
4550                KM  COMBINE RP316,BS305
4551                HC       2
4552                ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    33       SB101
                 .
                 .
    51           .        IF17
                 .           V
                 .           V
    56           .        RS17
                 .           .
                 .           .
    64           .           .        IF25
                 .           .           V
                 .           .           V
    69           .           .        RS25
                 .           .           .
                 .           .           .
    77       CP101.......................
                 V
                 V
    80       RS101
                 .
                 .
    87           .       SB102
                 .           .
                 .           .
    98           .           .-------> RET102
    94           .        D102
                 .           .
                 .           .
   101           .           .       IFD36
                 .           .           V
                 .           .           V
   106           .           .       RSD36
                 .           .           .
                 .           .           .
   114       CP102.......................
                 .
                 .
   120           .------->    P102
   117        S102
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                .
                .
126             .-------->   S102S
123        S102W
               V
               V
129       RS102W
                .
                .
136             .       SB103
                .           .
                .           .
143             .           .       IFD21
                .           .           V
                .           .           V
148             .           .       RSD21
                .           .           .
                .           .           .
155             .       CP103............
                .           .
                .           .
161             .           .-------->    P103
158             .        S103
                .           V
                .           V
164             .       RS103
                .           .
                .           .
171             .           .       SB104
                .           .           .
                .           .           .
180             .           .           .           .<-------    P103
178             .           .           .       P103
                .           .           .          V
                .           .           .          V
181             .           .           .      RP103
                .           .           .          .
                .           .           .          .
185        CP104.................................
                .
                .
191             .-------->    P104
188         S104
                .
                .
198             .-------->   S104S
194        S104W
               V
               V
201       RS104W
                .
                .
208             .       SB105
                .           .
                .           .
219             .           .-------->  RET105
215             .        D105
                .           V
                .           V
222             .       RS105
                .           .
                .           .
229             .           .       SB106
                .           .           .
                .           .           .
236        CP106......................
                .
                .
242             .-------->    P106
239         S106
                .
                .
248             .-------->   S106S
245        S106W
               V
               V
251       RS106W
                .
                .
258             .       SB107
                .           .
                .           .
265             .           .       SB109
                .           .           .
                .           .           .
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272          .       CP107............
             .          V
             .          V
275          .       RS107
             .          .
             .          .
282          .          .       SB108
             .          .          .
             .          .          .
293          .          .          .-------> RET108
289          .          .        D108
             .          .          .
             .          .          .
296          .          .          .       SB110
             .          .          .          .
             .          .          .          .
303       CP108.................................
             V
             V
306       RS108
             .
             .
313          .       SB111
             .          .
             .          .
320          .          .        IF34
             .          .          V
             .          .          V
325          .          .        RS34
             .          .          .
             .          .          .
333          .          .          .       IF44B
             .          .          .          V
             .          .          .          V
338          .          .          .       RS44B
             .          .          .          .
             .          .          .          .
346          .          .          .          .      IPMAIN
             .          .          .          .          .
             .          .          .          .          .
356          .       CP111.................................
             .          .
             .          .
362          .          .------->    P111
359          .        S111
             .          .
             .          .
369          .          .------->   S111S
365          .       S111W
             .          V
             .          V
372          .      RS111W
             .          .
             .          .
379          .          .       SB112
             .          .          .
             .          .          .
389          .          .          .          .<-------    P111
386          .          .          .       P111
             .          .          .          V
             .          .          .          V
390          .          .          .       RP111
             .          .          .          .
             .          .          .          .
394          .       CP112......................
             .          .
             .          .
400          .          .------->    P112
397          .        S112
             .          V
             .          V
403          .       RS112
             .          .
             .          .
413          .          .          .<-------   S102S
410          .          .       S102S
             .          .          V
             .          .          V
414          .          .      RS102S
             .          .          .
             .          .          .
424          .          .          .          .<-------    P102
421          .          .          .       P102
             .          .          .          V
             .          .          .          V
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425          .           .           .       RP102
             .           .           .           .
             .           .           .           .
429          .           .           .           .       SB113
             .           .           .           .           .
             .           .           .           .           .
439          .           .           .           .           .           .<-------    P112
436          .           .           .           .           .       P112
             .           .           .           .           .           V
             .           .           .           .           .           V
440          .           .           .           .           .      RP112
             .           .           .           .           .           .
             .           .           .           .           .           .
444          .      CP113.............................................
             .           .
             .           .
450          .           .------->    P113
447          .       S113
             .           .
             .           .
456          .           .------->   S113S
453          .      S113W
             .          V
             .          V
461          .     RS113W
             .           .
             .           .
471          .           .           .<-------   S104S
468          .           .      S104S
             .           .          V
             .           .          V
472          .           .     RS104S
             .           .           .
             .           .           .
479          .           .           .       SB114
             .           .           .           .
             .           .           .           .
489          .           .           .           .           .<-------    P113
486          .           .           .           .       P113
             .           .           .           .           V
             .           .           .           .           V
490          .           .           .           .      RP113
             .           .           .           .           .
             .           .           .           .           .
497          .           .           .           .           .           .<-------    P104
494          .           .           .           .           .       P104
             .           .           .           .           .           V
             .           .           .           .           .           V
498          .           .           .           .           .      RP104
             .           .           .           .           .           .
             .           .           .           .           .           .
502          .      CP114.............................................
             .           .
             .           .
508          .           .------->    P114
505          .       S114
             .           .
             .           .
515          .           .------->   S114S
511          .      S114W
             .          V
             .          V
518          .     RS114W
             .           .
             .           .
528          .           .           .<-------   S106S
525          .           .      S106S
             .           .          V
             .           .          V
529          .           .     RS106S
             .           .           .
             .           .           .
539          .           .           .           .<-------    P106
536          .           .           .       P106
             .           .           .           V
             .           .           .           V
540          .           .           .      RP106
             .           .           .           .
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544          .           .           .           .       SB115
             .           .           .           .           .
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555          .           .           .           .           .------->  RET115
551          .           .           .           .       D115
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561                                                                  .<-------    P114
558                                                            P114
                                                                  V
                                                                  V
562                                                           RP114
566            CP115.............................................
572                .------->    P115
569             S115
578                .------->   S115S
575            S115W
                   V
                   V
581           RS115W
588                     SB116
595                                SB117
605                                                       .<-------    P115
602                                                  P115
                                                        V
                                                        V
606                                                 RP115
610       CP116.............................................
618           .------->    P116
613        S116
              V
              V
621       RS116
628            SB118
635                     IP119
647                                          .<-------   S111S
645                                     S111S
                                           V
                                           V
648                                    RS111S
655                                                 IFD48
                                                      V
                                                      V
660                                                 RSD48
668            CP118.................................
674                .------->    P118
671             S118
680                .------->   S118S
677            S118W
                   V
                   V
685           RS118W
692                     SB119
699            CP119............
705                .------->    P119
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702          .        S119
             .           V
             .           V
708          .       RS119
             .           .
             .           .
715          .           .       SB120
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722          .       CP120............
             .           V
             .           V
725          .       RS120
             .           .
             .           .
732          .           .       IP122
             .           .           .
             .           .           .
745          .           .           .           .<-------   S113S
742          .           .           .       S113S
             .           .           .           V
             .           .           .           V
746          .           .           .      RS113S
             .           .           .           .
             .           .           .           .
753          .           .           .           .       SB121
             .           .           .           .           .
             .           .           .           .           .
760          .       CP121.................................
             .           .
             .           .
766          .           .------->    P121
763          .        S121
             .           .
             .           .
772          .           .------->   S121S
769          .       S121W
             .           V
             .           V
775          .      RS121W
             .           .
             .           .
785          .           .           .<-------   S114S
782          .           .       S114S
             .           .           V
             .           .           V
786          .           .      RS114S
             .           .           .
             .           .           .
793          .           .           .       SB122
             .           .           .           .
             .           .           .           .
804          .           .           .           .------->  RET122
800          .           .           .        D122
             .           .           .           .
             .           .           .           .
807          .       CP122......................
             .           .
             .           .
813          .           .------->    P122
810          .        S122
             .           .
             .           .
820          .           .------->   S122S
816          .       S122W
             .           V
             .           V
823          .      RS122W
             .           .
             .           .
833          .           .           .<-------   S115S
830          .           .       S115S
             .           .           V
             .           .           V
834          .           .      RS115S
             .           .           .
             .           .           .
841          .           .           .       SB123
             .           .           .           .
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848          .       CP123......................
             .           .
             .           .
854          .           .------->    P123
851          .        S123
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                .          .
                .          .
  860           .          .-------->   S123S
  857           .      S123W
                .          V
                .          V
  863           .     RS123W
                .          .
                .          .
  870           .          .       SB124
                .          .          .
                .          .          .
  877           .          .          .       SB125
                .          .          .          .
                .          .          .          .
  884       CP124.................................
                V
                V
  887       RS124
                .
                .
  894           .      SB126
                .          .
                .          .
  904           .          .-------->    P126
  901           .       S126
                .          .
                .          .
  912           .          .-------->   S126S
  907           .      S126W
                .          V
                .          V
  915           .     RS126W
                .          .
                .          .
  922           .          .       IP128
                .          .          .
                .          .          .
  935           .          .          .          .<--------   S118S
  932           .          .          .       S118S
                .          .          .          V
                .          .          .          V
  936           .          .          .      RS118S
                .          .          .          .
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  943           .          .          .          .       SB127
                .          .          .          .          .
                .          .          .          .          .
  953           .          .          .          .          .          .<--------    P118
  950           .          .          .          .          .       P118
                .          .          .          .          .          V
                .          .          .          .          .          V
  954           .          .          .          .          .      RP118
                .          .          .          .          .          .
                .          .          .          .          .          .
  958           .      CP127.............................................
                .          .
                .          .
  964           .          .-------->    P127
  961           .       S127
                .          .
                .          .
  970           .          .-------->   S127S
  967           .      S127W
                .          V
                .          V
  975           .     RS127W
                .          .
                .          .
  982           .          .       SB128
                .          .          .
                .          .          .
  989           .      CP128............
                .          .
                .          .
  997           .          .-------->    P128
  992           .       S128
                .          V
                .          V
 1000           .      RS128
                .          .
                .          .
 1010           .          .          .<--------   S121S
 1007           .          .       S121S
                .          .          V
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                 .          .          V
1011             .          .     RS121S
                 .          .          .
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1018             .          .          .       SB129
                 .          .          .          .
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1029             .          .          .          .-------> RET129
1025             .          .          .        D129
                 .          .          .          .
                 .          .          .          .
1035             .          .          .          .          .<-------    P121
1032             .          .          .          .        P121
                 .          .          .          .          V
                 .          .          .          .          V
1036             .          .          .          .       RP121
                 .          .          .          .          .
                 .          .          .          .          .
1040             .       CP129.................................
                 .          .
                 .          .
1046             .          .------->    P129
1043             .        S129
                 .          .
                 .          .
1053             .          .------->   S129S
1049             .       S129W
                 .          V
                 .          V
1056             .      RS129W
                 .          .
                 .          .
1066             .          .          .<-------   S122S
1063             .          .       S122S
                 .          .          V
                 .          .          V
1067             .          .     RS122S
                 .          .          .
                 .          .          .
1074             .          .          .       SB130
                 .          .          .          .
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1081             .       CP130......................
                 .          .
                 .          .
1089             .          .------->   S130S
1084             .       S130W
                 .          V
                 .          V
1092             .      RS130W
                 .          .
                 .          .
1102             .          .          .<-------   S123S
1099             .          .       S123S
                 .          .          V
                 .          .          V
1103             .          .     RS123S
                 .          .          .
                 .          .          .
1110             .          .          .       SB131
                 .          .          .          .
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1120             .          .          .          .          .<-------    P123
1117             .          .          .          .        P123
                 .          .          .          .          V
                 .          .          .          .          V
1121             .          .          .          .       RP123
                 .          .          .          .          .
                 .          .          .          .          .
1125             .       CP131.................................
                 .          .
                 .          .
1131             .          .------->    P131
1128             .        S131
                 .          .
                 .          .
1138             .          .------->   S131S
1134             .       S131W
                 .          V
                 .          V
1141             .      RS131W
                 .          .
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1148             .          .       SB132
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1155        CP132.......................
                V
                V
1158        RS132
                .
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1165            .      SB133
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1175            .          .          .<-------   S126S
1172            .          .      S126S
                .          .          V
                .          .          V
1176            .          .     RS126S
                .          .          .
                .          .          .
1183            .          .          .       IF51
                .          .          .          V
                .          .          .          V
1188            .          .          .       RS51
                .          .          .          .
                .          .          .          .
1196            .          .          .          .        IF67
                .          .          .          .           V
                .          .          .          .           V
1201            .          .          .          .        RS67
                .          .          .          .           .
                .          .          .          .           .
1209            .      CP133...................................
                .          .
                .          .
1215            .          .-------->    P133
1212            .       S133
                .          .
                .          .
1222            .          .-------->   S133S
1218            .      S133W
                .          V
                .          V
1225            .     RS133W
                .          .
                .          .
1235            .          .          .<-------    P133
1232            .          .       P133
                .          .          V
                .          .          V
1236            .          .      RP133
                .          .          .
                .          .          .
1240            .     CP134A...........
                .          .
                .          .
1246            .          .          .<-------   S127S
1243            .          .      S127S
                .          .          V
                .          .          V
1247            .          .     RS127S
                .          .          .
                .          .          .
1254            .          .          .       SB134
                .          .          .          .
                .          .          .          .
1265            .          .          .          .-------> RET134
1261            .          .          .        D134
                .          .          .          .
                .          .          .          .
1271            .          .          .          .           .<-------    P126
1268            .          .          .          .        P126
                .          .          .          .           V
                .          .          .          .           V
1272            .          .          .          .       RP126
                .          .          .          .           .
                .          .          .          .           .
1279            .          .          .          .           .          .<-------    P127
1276            .          .          .          .           .        P127
                .          .          .          .           .           V
                .          .          .          .           .           V
1280            .          .          .          .           .       RP127
                .          .          .          .           .           .
                .          .          .          .           .           .
1284            .      CP134...............................................
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                .          .
1290            .          .-------->    P134
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1287          .        S134
              .           .
              .           .
1296          .           .-------->   S134S
1293          .       S134W
              .           V
              .           V
1299          .      RS134W
              .           .
              .           .
1306          .           .       SB135
              .           .           .
              .           .           .
1313          .       CP135............
              .           .
              .           .
1319          .           .-------->    P135
1316          .        S135
              .           V
              .           V
1322          .       RS135
              .           .
              .           .
1329          .           .       SB136
              .           .           .
              .           .           .
1340          .           .           .-------->  RET136
1336          .           .        D136
              .           .           .
              .           .           .
1346          .           .           .           .<--------    P135
1343          .           .           .        P135
              .           .           .           V
              .           .           .           V
1347          .           .           .       RP135
              .           .           .           .
              .           .           .           .
1351          .       CP136........................
              .           .
              .           .
1357          .           .-------->    P136
1354          .        S136
              .           .
              .           .
1364          .           .-------->   S136S
1360          .       S136W
              .           V
              .           V
1367          .      RS136W
              .           .
              .           .
1377          .           .           .<--------   S129S
1374          .           .       S129S
              .           .           V
              .           .           V
1378          .           .      RS129S
              .           .           .
              .           .           .
1385          .           .           .       SB137
              .           .           .           .
              .           .           .           .
1395          .           .           .           .           .<--------    P129
1392          .           .           .           .        P129
              .           .           .           .           V
              .           .           .           .           V
1396          .           .           .           .       RP129
              .           .           .           .           .
              .           .           .           .           .
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3227                                      .                <-------  S233S
3224                                      .          S233S
                                          .              V
                                          .              V
3228                                      .         RS233S
                                          .              .
                                          .              .
3236                                      .              .       SB240
                                          .              .          .
                                          .              .          .
3243                                  CP240.......................
                                          .
                                          .
3250                                      .------->   P240
3246                                   S240
                                          .
                                          .
3258                                      .------->  S240S
3253                                  S240W
                                          V
                                          V
3263                                 RS240W
                                          .
                                          .
3274                                      .                <-------   P240
3271                                      .           P240
                                          .              V
                                          .              V
3275                                      .          RP240
                                          .              .
                                          .              .
3284                                      .              .          <-------  S234S
3281                                      .              .       S234S
                                          .              .          V
                                          .              .          V
3285                                      .              .      RS234S
                                          .              .          .
                                          .              .          .
3296                                      .              .          .          <-------   P234
3293                                      .              .          .       P234
                                          .              .          .          V
                                          .              .          .          V
3297                                      .              .          .      RP234
                                          .              .          .          .
                                          .              .          .          .
3302                                      .              .          .          .      SB241
                                          .              .          .          .          .
                                          .              .          .          .          .
3313                                      .              .          .          .          .-------> RET241
3309                                      .              .          .          .       D241
                                          .              .          .          .          .
                                          .              .          .          .          .
3316                                  CP241.............................................
                                          .
                                          .
3325                                      .------->   P241
3319                                   S241
                                          .
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3332                                      .------->  S241S
3328                                  S241W
                                          V
                                          V
3337                                 RS241W
                                          .
                                          .
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3348                                                  .<-------   S235S
3345                                            S235S
                                                    V
                                                    V
3349                                           RS235S
                                                    .
                                                    .
3357                                                .       SB242
                                                    .           .
                                                    .           .
3369                                      CP242.......................
                                                  .
                                                  .
3376                                              .------->    P242
3372                                       S242
                                                  .
                                                  .
3383                                              .------->   S242S
3379                                      S242W
                                                  V
                                                  V
3388                                     RS242W
                                                  .
                                                  .
3399                                              .<-------    P242
3396                                         P242
                                                  V
                                                  V
3400                                         RP242
                                                  .
                                                  .
3408                                              .           .<-------   S236S
3405                                              .       S236S
                                                  .           V
                                                  .           V
3409                                              .      RS236S
                                                  .           .
                                                  .           .
3420                                              .           .          .<-------    P236
3417                                              .           .       P236
                                                  .           .          V
                                                  .           .          V
3421                                              .           .      RP236
                                                  .           .          .
                                                  .           .          .
3426                                              .           .          .       SB243
                                                  .           .          .           .
                                                  .           .          .           .
3433                                      CP243.............................................
                                                  .
                                                  .
3442                                              .------->    P243
3436                                       S243
                                                  .
                                                  .
3448                                              .------->   S243S
3445                                      S243W
                                                  V
                                                  V
3453                                     RS243W
                                                  .
                                                  .
3461                                              .      SB244
                                                  .           .
                                                  .           .
3468                                 CP244A.......................
                                          V
                                          V
3471                                 BS244A
                                          .
                                          .
3483                                              .<-------    P243
3480                                       P243
                                                  V
                                                  V
3484                                      RP243
                                                  .
                                                  .
3489                                   CP244............
                                          V
                                          V
3493                                   RC244
                                          V
                                          V
3500                                 RC244B
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3511                    .<-------   S239S
3508                 S239S
                        V
                        V
3512                 RS239S
                        .
                        .
3520                    .       SB245
                        .          .
                        .          .
3538                    .          .          .<-------   P146A
3532                    .          .       P146A
                        .          .          V
                        .          .          V
3539                    .          .      RC146A
                        .          .          .
                        .          .          .
3547                    .          .          .       SB252
                        .          .          .          .
                        .          .          .          .
3559                    .          .          .          .           .<-------    P239
3556                    .          .          .          .        P239
                        .          .          .          .           V
                        .          .          .          .           V
3560                    .          .          .          .       RP239
                        .          .          .          .           .
                        .          .          .          .           .
3565                 CP245.............................................
                        .
                        .
3573                    .------->   P245
3569                 S245
                        V
                        V
3576                 RC245
                        .
                        .
3587                    .          .<-------   S240S
3584                    .       S240S
                        .          V
                        .          V
3588                    .      RS240S
                        .          .
                        .          .
3596                    .          .       SB246
                        .          .          .
                        .          .          .
3603                 CP246......................
                        .
                        .
3606                    .       SB247
                        .          .
                        .          .
3613                    .          .       SB248
                        .          .          .
                        .          .          .
3623                    .          .          .           .<-------    P245
3620                    .          .          .        P245
                        .          .          .           V
                        .          .          .           V
3624                    .          .          .       RP245
                        .          .          .          .
                        .          .          .          .
3629                 CP247...................................
                        V
                        V
3632                 BS247
                        V
                        V
3652                 RC247
                        .
                        .
3663                    .          .<-------   S241S
3660                    .       S241S
                        .          V
                        .          V
3664                    .      RS241S
                        .          .
                        .          .
3675                    .          .          .<-------    P241
3672                    .          .       P241
                        .          .          V
                        .          .          V
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3676                                                  RP241
3681                                                                  SB253
3690                                CP248
                                      V
                                      V
3693                                RC248
3704                                                  .<-------   S242S
3701                                          S242S
                                                  V
                                                  V
3705                                        RS242S
3713                                                  SB249
3730                                                  .------->  RET249
3725                                                   D249
3733                                CP249
                                      V
                                      V
3736                                RC249
3747                                                  .<-------   S243S
3744                                          S243S
                                                  V
                                                  V
3748                                        RS243S
3756                                                  SB250
3767                                                  .------->  RET250
3763                                                   D250
3770                                                                  SB254
3779                                CP250
                                      V
                                      V
3782                                RC250
3790                                          SB251
3801                                                  .------->  RET251
3797                                           D251
3804                          CP251
3809                                SB201
3826                                                  .<-------   S204N
3823                                          S204N
                                                  V
                                                  V
3827                                        RS204N
3835                                                  SB205
3842                                          CP205
3845                        CPD
3850                          SB401
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                .         .         .
                .         .         .
3871            .         .         .-------> RET401
3867            .         .       D401
                .         .         V
                .         .         V
3874            .         .      RS401
                .         .         .
                .         .         .
3881            .         .         .       SB301
                .         .         .          .
                .         .         .          .
3888            .         .      CP301............
                .         .         .
                .         .         .
3896            .         .         .-------> S301S
3891            .         .      S301W
                .         .         V
                .         .         V
3899            .         .     RS301W
                .         .         .
                .         .         .
3906            .         .         .       SB302
                .         .         .          .
                .         .         .          .
3913            .         .      CP302............
                .         .         .
                .         .         .
3919            .         .         .-------> P302
3916            .         .       S302
                .         .         .
                .         .         .
3926            .         .         .-------> S302S
3922            .         .      S302W
                .         .         V
                .         .         V
3929            .         .     RS302W
                .         .         .
                .         .         .
3936            .         .         .       SB303
                .         .         .          .
                .         .         .          .
3946            .         .         .          .          .<-------    P302
3943            .         .         .          .       P302
                .         .         .          .         V
                .         .         .          .         V
3947            .         .         .          .      RP302
                .         .         .          .          .
                .         .         .          .          .
3951            .         .      CP303........................
                .         .         .
                .         .         .
3957            .         .         .-------> P303
3954            .         .       S303
                .         .         V
                .         .         V
3960            .         .      RS303
                .         .         .
                .         .         .
3967            .         .         .       SB304
                .         .         .          .
                .         .         .          .
3979            .         .         .          .-------> RET304
3974            .         .         .        D304
                .         .         .          .
                .         .         .          .
3985            .         .         .          .          .<-------    P303
3982            .         .         .          .       P303
                .         .         .          .         V
                .         .         .          .         V
3986            .         .         .          .      RP303
                .         .         .          .          .
                .         .         .          .          .
3990            .         .      CP304........................
                .         .         .
                .         .         .
3996            .         .         .-------> P304
3993            .         .       S304
                .         .         .
                .         .         .
4002            .         .         .-------> S304S
3999            .         .      S304W
                .         .         V
                .         .         V
4005            .         .     RS304W
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4012             .         .         .       SB305
                 .         .         .         .
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4019             .         .      CP305............
                 .         .         V
                 .         .         V
4022             .         .      BS305
                 .         .         .
                 .         .         .
4031             .         .         .      IFDIVR
                 .         .         .          V
                 .         .         .          V
4037             .         .         .      RSDIVR
                 .         .         .         .
                 .         .         .         .
4044             .         .         .         .       SB402
                 .         .         .         .         .
                 .         .         .         .         .
4056             .         .         .         .         .-------> RET402
4051             .         .         .         .       D402
                 .         .         .         .         .
                 .         .         .         .         .
4059             .         .         .      CP402............
                 .         .         .          V
                 .         .         .          V
4062             .         .         .      RS402
                 .         .         .         .
                 .         .         .         .
4073             .         .         .         .         .<-------   S301S
4070             .         .         .         .       S301S
                 .         .         .         .         V
                 .         .         .         .         V
4074             .         .         .         .      RS301S
                 .         .         .         .         .
                 .         .         .         .         .
4081             .         .         .         .         .       SB306
                 .         .         .         .         .         .
                 .         .         .         .         .         .
4088             .         .         .         .       CP306............
                 .         .         .         .         V
                 .         .         .         .         V
4091             .         .         .         .       RS306
                 .         .         .         .         .
                 .         .         .         .         .
4098             .         .         .         .         .       SB308
                 .         .         .         .         .         .
                 .         .         .         .         .         .
4105             .         .         .      CP308........................
                 .         .         .         .
                 .         .         .         .
4111             .         .         .         .------->    P308
4108             .         .         .       S308
                 .         .         .         .
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4119             .         .         .         .------->   S308S
4114             .         .         .      S308W
                 .         .         .          V
                 .         .         .          V
4122             .         .         .      RS308W
                 .         .         .         .
                 .         .         .         .
4133             .         .         .         .         .<-------   S302S
4130             .         .         .         .       S302S
                 .         .         .         .         V
                 .         .         .         .         V
4134             .         .         .         .      RS302S
                 .         .         .         .         .
                 .         .         .         .         .
4141             .         .         .         .         .       SB307
                 .         .         .         .         .         .
                 .         .         .         .         .         .
4152             .         .         .         .         .         .-------> RET307
4148             .         .         .         .         .       D307
                 .         .         .         .         .         .
                 .         .         .         .         .         .
4155             .         .         .         .       CP307............
                 .         .         .         .         .
                 .         .         .         .         .
4161             .         .         .         .         .------->    P307
4158             .         .         .         .       S307
                 .         .         .         .         V
                 .         .         .         .         V
4164             .         .         .         .      RS307
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4171                                  SB309
4181                                                .<-------    P308
4178                                              P308
                                                    V
                                                    V
4182                                            RP308
4186                        CP309.....................................
4192                        .------->    P309
4189                         S309
4199                        .------->   S309S
4195                        S309W
                                V
                                V
4202                       RS309W
4213                        .------->   P310A
4210                        S310A
4219                        .------->  S310AS
4216                       S310AW
                                V
                                V
4222                       RS310A
4233                                .<-------   P310A
4230                            P310A
                                    V
                                    V
4234                            RP310A
4241                                          .<-------    P307
4238                                        P307
4245                                                .<-------    P309
4242                                              P309
4246                                        CP310B............
                                                V
                                                V
4249                                        RC310B
4259                                                .<-------   S304S
4256                                            S304S
                                                    V
                                                    V
4260                                          RS304S
4267                                                        SB310
4278                                                                .------->  RET310
4274                                                        D310A
4281                                        CP310........................
                                                V
                                                V
4284                                        BS310
                                                V
                                                V
4292                                        RC310
4299                        CP311A........................
4302                            SB311
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4312                                                                  .<-------    P304
4309                                                                P304
                                                                        .
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4313                                                        CP311.......................
                                                                V
                                                                V
4316                                                        BS311
                                                                .
                                                                .
4331                                                            .------->    P311
4328                                                         S311
                                                                V
                                                                V
4334                                                        RS311
                                                                .
                                                                .
4345                                                                .<-------   S308S
4342                                                            S308S
                                                                    V
                                                                    V
4346                                                            RS308S
                                                                    .
                                                                    .
4353                                                                .       SB403
                                                                    .           .
                                                                    .           .
4364                                                                .           .------->  RET403
4360                                                                .        D403
                                                                    .           V
                                                                    .           V
4367                                                                .       RS403
                                                                    .           .
                                                                    .           .
4375                                                                .           .       SB312
                                                                    .           .           .
                                                                    .           .           .
4382                                                            CP312.......................
                                                                    .
                                                                    .
4388                                                                .------->    P312
4385                                                             S312
                                                                    V
                                                                    V
4391                                                            RS312
                                                                    .
                                                                    .
4402                                                                .           .<-------   S309S
4399                                                                .       S309S
                                                                    .           V
                                                                    .           V
4403                                                                .      RS309S
                                                                    .           .
                                                                    .           .
4410                                                                .           .       SB313
                                                                    .           .           .
                                                                    .           .           .
4420                                                                .           .           .           .<-------    P312
4417                                                                .           .           .        P312
                                                                    .           .           .           V
                                                                    .           .           .           V
4421                                                                .           .           .      RP312
                                                                    .           .           .           .
                                                                    .           .           .           .
4425                                                            CP313.................................
                                                                    .
                                                                    .
4431                                                                .------->    P313
4428                                                             S313
                                                                    V
                                                                    V
4434                                                            RS313
                                                                    .
                                                                    .
4445                                                                .           .<-------  S310AS
4442                                                                .      S310AS
                                                                    .           V
                                                                    .           V
4446                                                                .      R310AS
                                                                    .           .
                                                                    .           .
4453                                                                .           .       SB314
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4465                                                                  .-------> RET314
4460                                                              D314A
4471                                                                                .<-------    P313
4468                                                                          P313
                                                                                 V
                                                                                 V
4472                                                                         RP313
4476                                                   CP314.................................
                                                           V
                                                           V
4479                                                   BS314
4489                                                           .------->    P314
4486                                                    S314
                                                           V
                                                           V
4492                                                   RC314
4499                                                           SB315
4509                                                                                .<-------    P314
4506                                                                          P314
                                                                                 V
                                                                                 V
4510                                                                         RP314
4514                                           CP315.................................
                                                   V
                                                   V
4517                                           BS315
                                                   V
                                                   V
4530                                           RP315
4537                                                           .<-------    P311
4534                                                    P311
                                                           V
                                                           V
4538                                                   RP311
4542                                           CP316............
                                                   V
                                                   V
4545                                           RP316
4549                                   CP317............
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```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   27OCT06  TIME  11:13:57  *
*                                      *
****************************************
```

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

TEMPE CANAL FLOODPLAIN DELINEATION STUDY (FCD 2002-22)

100-YEAR, 6-HOUR HEC-1 MODEL
FILENAME: TC-6HR.DAT DATE: OCTOBER 27, 2006

PREPARED BY HOSKIN-RYAN CONSULTANTS, INC. (HRC 03-023)
IN ASSOCIATION WITH COE & VAN LOO CONSULTANTS, INC.

THE TEMPE CANAL FDS MODEL AREA IS BOUNDED BY TEMPE CANAL AND PRICE ROAD TO THE WEST, CONSOLIDATED CANAL AND SOUTHERN-PACIFIC RAILROAD TO THE EAST,

```
                    CROSSCUT CANAL TO THE NORTH, AND WESTERN CANAL AND US60 TO THE SOUTH.
                    THREE WATERSHED AREAS ARE INCLUDED IN THIS MODEL; THE 100, 200, AND 300
                    SERIES.  WATERSHED BOUNDARY DESCRIPTIONS ARE GIVEN IN THE MODEL.

                    INFLOW HYDROGRAPHS TO THE MODEL ARE INCLUDED IN THE FILE TC-6HR.DSS
                    AND COME FROM THE "CONSOLIDATED CANAL FLOODPLAIN DELINEATION STUDY,"
                    BY TETRA TECH INC., MARCH 2003, AND THE "GILBERT-CHANDLER ADMS,
                    VOL II-FUTURE CONDITIONS HYDROLOGY," BY FCDMC, JANUARY 1994.

                    NOTES:
                     - SUB-BASIN AND PRECIPITATION DATA WERE GENEREATED USING DDMSW VERSION 2.1.0
                     - NORMAL DEPTH ROUTING WAS USED FOR STREET FLOW ROUTING
                     - KINEMATIC WAVE ROUTING WAS USED FOR PIPE FLOW ROUTING
                     - STREET INTERSECTION FLOW SPLIT RATING CURVES WERE BASED ON NORMAL DEPTH
                     - PB WERE ADJUSTED BY AREAL REDUCTION FACTORS BASED ON THE FCDMC DRAINAGE
                       DESIGN MANUAL.  KEY CONCENTRATION POINTS WERE IDENTIFIED ALONG THE
                       TEMPE CANAL AND ADOT US60 CHANNEL, AND AT DOBSON LAKES AND CARRIAGE
                       LANE PARK.


 32 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1JUL93  STARTING DATE
                      ITIME        0600  STARTING TIME
                         NQ         600  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3JUL93  ENDING DATE
                     NDTIME        0755  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   49.92 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
   -----DSS---ZOPEN:  Existing File Opened,  File: TC-6HR.DSS
                      Unit:  71;  DSS Version: 6-EA
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/17-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS     ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/17-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/02JUL1993/5MIN/CC6HR/
```

```
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/17-OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/17-OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/25-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/25-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/25-OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/25-OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D36OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
```

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        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D36OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D36OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D36OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D21OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D21OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
```

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        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D21OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D21OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/34-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/34-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/34-OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/34-OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
```

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        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/44BOUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/44BOUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/44BOUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/44BOUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D48OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
```

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        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D48OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D48OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93       JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/D48OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93       JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/51-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/51-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/51-OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
```

```
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/51-OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/67-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:      5  Number of data values:       1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/67-OUT/FLOW//5MIN/CC6HR/
        Time Window set.  Interval:      5  Number of data values:     601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/02JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/67-OUT/FLOW/02JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/03JUL1993/5MIN/CC6HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /TEMPE/67-OUT/FLOW/03JUL1993/5MIN/CC6HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/HC23/FLOW//5MIN/6HR FLU FWY/
        Time Window set.  Interval:      5  Number of data values:       1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/6HR FLU FWY/
```

```
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/6HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/HC23/FLOW//5MIN/6HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/6HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/6HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/02JUL1993/5MIN/6HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /GCADMSFUTURE/HC23/FLOW/02JUL1993/5MIN/6HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/03JUL1993/5MIN/6HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /GCADMSFUTURE/HC23/FLOW/03JUL1993/5MIN/6HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS      ,  Type:INST-VAL


****** WARNING RDTIMS - MISSING FLOW                IN DSS FILE - READ AND INTERPOLATED VALUES SET TO ZERO ******


-----DSS---ZWRITE Unit  71; Vers.    3:  /TEMPE/BSCST/FLOW/01JUL1993/5MIN/WEST/
-----DSS---ZWRITE Unit  71; Vers.    3:  /TEMPE/BSCST/FLOW/02JUL1993/5MIN/WEST/
-----DSS---ZWRITE Unit  71; Vers.    3:  /TEMPE/BSCST/FLOW/03JUL1993/5MIN/WEST/
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW//5MIN/6HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 1, 1993  0600  (  34150  360)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/6HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    5:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/6HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:   360
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW//5MIN/6HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0600  (  34150  360)
        Ending   date and time:  Jul 3, 1993  0800  (  34152  480)
        Input time offset:      0
```

```
      After ZRDINF, Record found: T
      Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/6HR FLU FWY/
      Number of actual data:  288  Header length:   0
      Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    5:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/6HR FLU FWY/
    ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
      NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:   360
      NLDATA:  288   JULSD:   34150
      JULS: 01JUL93       JULSD: 01JUL93
      Quality Read: F,  Quality Requested: F
      ---ZRRTSB Calculations:  NPOS:   72  NDATA:  288  NREAD:  217  ILIM:  217
      After ZRDINF, Record found: T
      Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/02JUL1993/5MIN/6HR FLU FWY/
      Number of actual data:  288  Header length:   0
      Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    5:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/02JUL1993/5MIN/6HR FLU FWY/
    ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
      NSTART:  218   NVALS:  601    JULS:   34150  ISTIME:   360
      NLDATA:  288   JULSD:   34151
      JULS: 01JUL93       JULSD: 02JUL93
      Quality Read: F,  Quality Requested: F
      ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  505
      After ZRDINF, Record found: T
      Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/03JUL1993/5MIN/6HR FLU FWY/
      Number of actual data:  288  Header length:   0
      Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/03JUL1993/5MIN/6HR FLU FWY/
    ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
      NSTART:  506   NVALS:  601    JULS:   34150  ISTIME:   360
      NLDATA:  288   JULSD:   34152
      JULS: 01JUL93       JULSD: 03JUL93
      Quality Read: F,  Quality Requested: F
      ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   96  ILIM:  601
    ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
      Offset:       0,  Units: CFS     ,  Type:INST-VAL
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SB101	70.	4.08	13.	3.	2.	.07		
+	HYDROGRAPH AT	IF17	74.	.00	39.	10.	5.	.00		
+	ROUTED TO	RS17	74.	.00	44.	11.	5.	.00		
+									.38	.00
+	HYDROGRAPH AT	IF25	60.	.00	12.	3.	1.	.00		
+	ROUTED TO	RS25	60.	.00	15.	4.	2.	.00		
+									.55	.00
+	3 COMBINED AT	CP101	136.	.42	71.	18.	9.	.07		
+	ROUTED TO	RS101	136.	.75	77.	20.	9.	.07		
+									.52	.75
+	HYDROGRAPH AT	SB102	225.	4.33	55.	14.	7.	.31		
+	DIVERSION TO	RET102	118.	4.33	12.	3.	1.	.31		
+	HYDROGRAPH AT	D102	225.	4.33	44.	11.	5.	.31		
+	HYDROGRAPH AT	IFD36	139.	.75	51.	13.	6.	.00		
+	ROUTED TO	RSD36	139.	.92	58.	15.	7.	.00		
+									.53	.92
+	3 COMBINED AT	CP102	309.	4.33	176.	45.	22.	.38		
+	DIVERSION TO	P102	18.	4.33	16.	4.	2.	.38		
+	HYDROGRAPH AT	S102	291.	4.33	160.	41.	20.	.38		
+	DIVERSION TO	S102S	268.	4.33	152.	39.	19.	.38		
+	HYDROGRAPH AT	S102W	23.	4.33	8.	2.	1.	.38		
+	ROUTED TO	RS102W	16.	5.25	9.	3.	1.	.38		
+									.27	5.25
+	HYDROGRAPH AT	SB103	166.	4.33	37.	9.	4.	.23		
+	HYDROGRAPH AT	IFD21	60.	.00	32.	8.	4.	.00		
+	ROUTED TO	RSD21	60.	.00	35.	9.	4.	.00		
+									.55	.00

```
                2 COMBINED AT
+                          CP103      176.   4.33      71.      18.      9.      .23
                DIVERSION TO
+                           P103       25.   4.33      25.       7.      3.      .23
                HYDROGRAPH AT
+                           S103      151.   4.33      46.      12.      6.      .23
                ROUTED TO
+                          RS103      148.   4.42      48.      12.      6.      .23
+                                                                                        .89
4.42
                HYDROGRAPH AT
+                          SB104      147.   4.50      41.      10.      5.      .25
                HYDROGRAPH AT
+                           P103       25.    .00      25.       7.      3.      .00
                ROUTED TO
+                          RP103       25.   5.75      25.       7.      3.      .00
                4 COMBINED AT
+                          CP104      322.   4.50     121.      32.     15.      .86
                DIVERSION TO
+                           P104       56.   4.50      56.      16.      8.      .86
                HYDROGRAPH AT
+                           S104      266.   4.50      65.      16.      8.      .86
                DIVERSION TO
+                          S104S      176.   4.50      43.      11.      5.      .86
                HYDROGRAPH AT
+                          S104W       90.   4.50      22.       5.      3.      .86
                ROUTED TO
+                         RS104W       89.   4.75      22.       6.      3.      .86
+                                                                                        .47
4.75
                HYDROGRAPH AT
+                          SB105      160.   4.42      40.      10.      5.      .23
                DIVERSION TO
+                         RET105      160.   5.58      36.       9.      4.      .23
                HYDROGRAPH AT
+                           D105       37.   5.58       4.       1.      1.      .23
                ROUTED TO
+                          RS105       23.   6.25       4.       1.      1.      .23
+                                                                                        .22
6.25
                HYDROGRAPH AT
+                          SB106      140.   4.50      40.      10.      5.      .23
                3 COMBINED AT
+                          CP106      222.   4.67      65.      17.      8.     1.32
                DIVERSION TO
+                           P106        6.   4.67       6.       2.      1.     1.32
                HYDROGRAPH AT
+                           S106      216.   4.67      59.      15.      7.     1.32
                DIVERSION TO
+                          S106S      130.   4.67      39.      10.      5.     1.32
                HYDROGRAPH AT
+                          S106W       85.   4.67      20.       5.      2.     1.32
                ROUTED TO
+                         RS106W       79.   5.00      20.       5.      2.     1.32
+                                                                                        .44
5.00
                HYDROGRAPH AT
+                          SB107      172.   4.33      43.      11.      5.      .24
                HYDROGRAPH AT
+                          SB109       61.   4.25      14.       3.      2.      .08
```

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                2 COMBINED AT
+                          CP107      233.   4.33        57.       14.        7.       .32
                ROUTED TO
+                          RS107      228.   4.50        56.       14.        7.       .32
+                                                                                              1.05
4.50
                HYDROGRAPH AT
+                          SB108      116.   4.75        44.       12.        6.       .25
                DIVERSION TO
+                         RET108      116.    .00        44.       12.        6.       .25
                HYDROGRAPH AT
+                           D108        0.    .00         0.        0.        0.       .25
                HYDROGRAPH AT
+                          SB110       51.   4.42        14.        4.        2.       .08
                4 COMBINED AT
+                          CP108      310.   4.58        90.       23.       11.      1.97
                ROUTED TO
+                          RS108      308.   4.75        90.       23.       11.      1.97
+                                                                                              .86
4.75
                HYDROGRAPH AT
+                          SB111       33.   4.17         7.        2.        1.       .03
                HYDROGRAPH AT
+                           IF34       74.    .00        36.        9.        4.       .00
                ROUTED TO
+                           RS34       74.    .00        39.       10.        5.       .00
+                                                                                              .37
.00
                HYDROGRAPH AT
+                          IF44B      118.    .00        37.        9.        4.       .00
                ROUTED TO
+                          RS44B      118.    .00        40.       10.        5.       .00
+                                                                                              .49
.00
                HYDROGRAPH AT
+                         IPMAIN       64.    .00        64.       64.       64.       .00
                4 COMBINED AT
+                          CP111      257.   1.33       150.       86.       74.       .03
                DIVERSION TO
+                           P111       64.   1.33        60.       46.       43.       .03
                HYDROGRAPH AT
+                           S111      193.   1.33        91.       40.       31.       .03
                DIVERSION TO
+                          S111S       79.   1.33        37.       17.       13.       .03
                HYDROGRAPH AT
+                          S111W      115.   1.33        53.       23.       18.       .03
                ROUTED TO
+                         RS111W      114.   1.33        58.       24.       19.       .03
+                                                                                              .50
1.33
                HYDROGRAPH AT
+                          SB112      166.   4.33        40.       10.        5.       .22
                HYDROGRAPH AT
+                           P111       64.    .00        60.       46.       43.       .00
                ROUTED TO
+                          RP111       64.    .00        60.       46.       43.       .00
                3 COMBINED AT
+                          CP112      254.   4.33       157.       80.       67.       .25
                DIVERSION TO
+                           P112       83.   4.33        83.       62.       58.       .25
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+          HYDROGRAPH AT
                          S112      171.   4.33      74.      19.      9.      .25
           ROUTED TO
+                         RS112     166.   4.58      79.      20.      10.     .25
+                                                                                      .62
4.58

           HYDROGRAPH AT
+                         S102S     268.   4.33     152.      39.      19.     .00
           ROUTED TO
+                         RS102S    262.   4.50     159.      41.      20.     .00
+                                                                                      .79
4.50

           HYDROGRAPH AT
+                         P102       18.   .00       16.       4.       2.      .00
           ROUTED TO
+                         RP102      18.   .00       17.       4.       2.      .00
           HYDROGRAPH AT
+                         SB113     161.   4.42      44.      11.       5.      .25
           HYDROGRAPH AT
+                         P112       83.   .00       83.      62.      58.      .00
           ROUTED TO
+                         RP112      83.   .00       83.      62.      58.      .00
           5 COMBINED AT
+                         CP113     688.   4.50     380.     139.      95.      .50
           DIVERSION TO
+                         P113       83.   4.50      83.      63.      58.      .50
           HYDROGRAPH AT
+                         S113      605.   4.50     297.      76.      36.      .50
           DIVERSION TO
+                         S113S     229.   4.50     115.      29.      14.      .50
           HYDROGRAPH AT
+                         S113W     376.   4.50     182.      46.      22.      .50
           ROUTED TO
+                         RS113W    374.   4.67     187.      49.      24.      .50
+                                                                                      1.02
4.67

           HYDROGRAPH AT
+                         S104S     176.   4.50      43.      11.       5.      .00
           ROUTED TO
+                         RS104S    157.   4.92      42.      11.       5.      .00
+                                                                                      2.18
4.92

           HYDROGRAPH AT
+                         SB114     139.   4.58      43.      11.       5.      .25
           HYDROGRAPH AT
+                         P113       83.   .00       83.      63.      58.      .00
           ROUTED TO
+                         RP113      83.   .00       83.      63.      59.      .00
           HYDROGRAPH AT
+                         P104       56.   .00       56.      16.       8.      .00
           ROUTED TO
+                         RP104      56.   6.17      56.      16.       8.      .00
           5 COMBINED AT
+                         CP114     788.   4.75     404.     151.     101.      .75
           DIVERSION TO
+                         P114      166.   4.75     166.      89.      71.      .75
           HYDROGRAPH AT
+                         S114      622.   4.75     238.      62.      30.      .75
           DIVERSION TO
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+                    S114S     429.   4.75     169.     44.     21.     .75
        HYDROGRAPH AT
                     S114W     193.   4.75      69.     18.      9.     .75
        ROUTED TO
+                    RS114W    190.   5.00      69.     19.      9.     .75
+                                                                          .76
5.00
        HYDROGRAPH AT
+                    S106S     130.   4.67      39.     10.      5.     .00
        ROUTED TO
+                    RS106S    122.   5.00      39.     10.      5.     .00
+                                                                          .61
5.00
        HYDROGRAPH AT
+                    P106        6.    .25       6.      2.      1.     .00
        ROUTED TO
+                    RP106       6.    .50       6.      2.      1.     .00
        HYDROGRAPH AT
+                    SB115     143.   4.58      45.     12.      6.     .26
        DIVERSION TO
+                    RET115    143.   4.83      22.      6.      3.     .26
        HYDROGRAPH AT
+                    D115      133.   4.83      24.      6.      3.     .26
        HYDROGRAPH AT
+                    P114      166.    .00     166.     89.     71.     .00
        ROUTED TO
+                    RP114     166.    .00     166.     89.     71.     .00
        5 COMBINED AT
+                    CP115     610.   4.92     297.    126.     89.    1.01
        DIVERSION TO
                     P115      166.   4.92     166.     91.     72.    1.01
        HYDROGRAPH AT
+                    S115      444.   4.92     131.     35.     17.    1.01
        DIVERSION TO
+                    S115S     440.   4.92     131.     35.     17.    1.01
        HYDROGRAPH AT
+                    S115W       3.   4.92       0.      0.      0.    1.01
        ROUTED TO
+                    RS115W      2.   6.42       0.      0.      0.    1.01
+                                                                          .06
6.42
        HYDROGRAPH AT
+                    SB116     120.   4.75      44.     11.      6.     .24
        HYDROGRAPH AT
+                    SB117      59.   4.42      17.      4.      2.     .08
        HYDROGRAPH AT
+                    P115      166.    .00     166.     91.     72.     .00
        ROUTED TO
+                    RP115     166.    .00     166.     91.     72.     .00
        5 COMBINED AT
+                    CP116     641.   4.75     315.    130.     91.    3.30
        DIVERSION TO
+                    P116      203.   4.75     199.    101.     77.    3.30
        HYDROGRAPH AT
+                    S116      438.   4.75     115.     29.     14.    3.30
        ROUTED TO
+                    RS116     432.   4.92     115.     29.     14.    3.30
+                                                                         1.21
4.92
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                HYDROGRAPH AT
+                          SB118     193.   4.33      47.      12.       6.     .22
                HYDROGRAPH AT
+                          IP119      21.    .00      21.      21.      21.     .00
                HYDROGRAPH AT
+                          S111S      79.   1.33      37.      17.      13.     .00
                ROUTED TO
+                         RS111S      79.   1.42      42.      18.      14.     .00
+                                                                                     .38
1.42
                HYDROGRAPH AT
+                          IFD48     167.    .00      18.       4.       2.     .00
                ROUTED TO
+                          RSD48     167.    .00      28.       7.       3.     .00
+                                                                                     .56
.00
                4 COMBINED AT
+                          CP118     267.    .33     136.      58.      44.     .22
                DIVERSION TO
+                           P118      64.    .33      63.      39.      35.     .22
                HYDROGRAPH AT
+                           S118     203.    .33      73.      18.       9.     .22
                DIVERSION TO
+                          S118S      69.    .33      26.       6.       3.     .22
                HYDROGRAPH AT
+                          S118W     134.    .33      47.      12.       6.     .22
                ROUTED TO
+                         RS118W     134.    .42      53.      13.       6.     .22
+                                                                                     .50
.42
                HYDROGRAPH AT
+                          SB119     139.   4.33      34.       9.       4.     .18
                2 COMBINED AT
+                          CP119     224.   4.50      87.      22.      11.     .40
                DIVERSION TO
+                           P119      21.   4.50      21.       6.       3.     .40
                HYDROGRAPH AT
+                           S119     203.   4.50      66.      16.       8.     .40
                ROUTED TO
+                          RS119     200.   4.58      69.      17.       8.     .40
+                                                                                     .86
4.58
                HYDROGRAPH AT
+                          SB120     120.   4.25      24.       6.       3.     .15
                2 COMBINED AT
+                          CP120     289.   4.50      92.      23.      11.     .55
                ROUTED TO
+                          RS120     287.   4.58      94.      24.      12.     .55
+                                                                                     .77
4.58
                HYDROGRAPH AT
+                          IP122      14.    .00      14.      14.      14.     .00
                HYDROGRAPH AT
+                          S113S     229.   4.50     115.      29.      14.     .00
                ROUTED TO
+                         RS113S     223.   4.75     118.      31.      15.     .00
+                                                                                     .77
4.75
                HYDROGRAPH AT
+                          SB121     120.   4.33      31.       8.       4.     .16
                4 COMBINED AT
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+                          CP121      620.   4.58      257.      78.      45.      .71
          DIVERSION TO
+                           P121       45.   4.58       45.      23.      19.      .71
          HYDROGRAPH AT
+                           S121      575.   4.58      212.      54.      26.      .71
          DIVERSION TO
+                          S121S      361.   4.58      146.      38.      18.      .71
          HYDROGRAPH AT
+                          S121W      214.   4.58       65.      17.       8.      .71
          ROUTED TO
+                         RS121W      203.   4.92       67.      18.       9.      .71
+                                                                                      1.05
4.92

          HYDROGRAPH AT
+                          S114S      429.   4.75      169.      44.      21.      .00
          ROUTED TO
+                         RS114S      424.   4.83      169.      45.      22.      .00
+                                                                                      1.66
4.83

          HYDROGRAPH AT
+                          SB122      153.   4.50       43.      11.       5.      .26
          DIVERSION TO
+                         RET122      153.    .00       43.      11.       5.      .26
          HYDROGRAPH AT
+                           D122        0.    .00        0.       0.       0.      .26
          3 COMBINED AT
+                          CP122      624.   4.92      236.      64.      31.      .97
          DIVERSION TO
+                           P122       14.   4.92       14.       5.       2.      .97
          HYDROGRAPH AT
+                           S122      610.   4.92      222.      59.      28.      .97
          DIVERSION TO
+                          S122S      306.   4.92      118.      32.      15.      .97
          HYDROGRAPH AT
+                          S122W      304.   4.92      104.      28.      13.      .97
          ROUTED TO
+                         RS122W      294.   5.17      104.      30.      14.      .97
+                                                                                      1.30
5.17

          HYDROGRAPH AT
+                          S115S      440.   4.92      131.      35.      17.      .00
          ROUTED TO
+                         RS115S      431.   5.08      130.      36.      18.      .00
+                                                                                      1.11
5.08

          HYDROGRAPH AT
+                          SB123      147.   4.58       46.      12.       6.      .26
          3 COMBINED AT
+                          CP123      833.   5.08      277.      78.      38.     1.23
          DIVERSION TO
+                           P123       33.   5.08       33.      11.       5.     1.23
          HYDROGRAPH AT
+                           S123      800.   5.08      244.      67.      32.     1.23
          DIVERSION TO
+                          S123S      501.   5.08      165.      46.      22.     1.23
          HYDROGRAPH AT
+                          S123W      299.   5.08       79.      21.      10.     1.23
          ROUTED TO
+                         RS123W      281.   5.33       79.      22.      11.     1.23
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+                                                                                                  1.04
5.33

+        HYDROGRAPH AT
                                SB124      124.   4.83       52.       14.       7.       .25

+        HYDROGRAPH AT
                                SB125       90.   4.50       31.        8.       4.       .13

+        4 COMBINED AT
                                CP124      815.   5.25      274.       73.      35.      4.91

+        ROUTED TO
                                RS124      810.   5.33      274.       73.      35.      4.91
+                                                                                                  1.83
5.33

+        HYDROGRAPH AT
                                SB126      186.   4.25       39.       10.       5.       .18

+        DIVERSION TO
                                P126        71.   4.25       25.        6.       3.       .18

+        HYDROGRAPH AT
                                S126       115.   4.25       14.        4.       2.       .18

+        DIVERSION TO
                                S126S       72.   4.25        9.        2.       1.       .18

+        HYDROGRAPH AT
                                S126W       44.   4.25        5.        1.       1.       .18

+        ROUTED TO
                                RS126W      40.   4.58        5.        1.       1.       .18
+                                                                                                   .59
4.58

+        HYDROGRAPH AT
                                IP128        7.    .00        7.        7.       7.       .00

+        HYDROGRAPH AT
                                S118S       69.    .33       26.        6.       3.       .00

+        ROUTED TO
                                RS118S      69.    .42       30.        8.       4.       .00
+                                                                                                   .31
.42

+        HYDROGRAPH AT
                                SB127      254.   4.25       56.       14.       7.       .25

+        HYDROGRAPH AT
                                P118        64.    .00       63.       39.      35.       .00

+        ROUTED TO
                                RP118       64.    .00       63.       40.      35.       .00

+        5 COMBINED AT
                                CP127      383.   4.50      161.       70.      53.       .43

+        DIVERSION TO
                                P127        64.   4.50       64.       45.      41.       .43

+        HYDROGRAPH AT
                                S127       319.   4.50       97.       24.      12.       .43

+        DIVERSION TO
                                S127S      237.   4.50       80.       20.      10.       .43

+        HYDROGRAPH AT
                                S127W       83.   4.50       17.        4.       2.       .43

+        ROUTED TO
                                RS127W      79.   4.58       17.        4.       2.       .43
+                                                                                                   .71
4.58

+        HYDROGRAPH AT
                                SB128      147.   4.33       33.        8.       4.       .19

+        2 COMBINED AT
                                CP128      208.   4.50       49.       13.       6.       .62

+        DIVERSION TO
                                P128        7.   4.50        7.        2.       1.       .62
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                HYDROGRAPH AT
+                          S128      201.   4.50      42.      11.      5.     .62
                ROUTED TO
+                          RS128     198.   4.58      42.      11.      5.     .62
+                                                                                      1.09
4.58

                HYDROGRAPH AT
+                          S121S     361.   4.58     146.      38.     18.     .00
                ROUTED TO
+                          RS121S    352.   4.83     149.      40.     19.     .00
+                                                                                      1.08
4.83

                HYDROGRAPH AT
+                          SB129     160.   4.58      47.      12.      6.     .31
                DIVERSION TO
+                          RET129    159.   4.67      20.       5.      2.     .31
                HYDROGRAPH AT
+                          D129      158.   4.67      28.       7.      3.     .31
                HYDROGRAPH AT
+                          P121       45.    .00      45.      23.     19.     .00
                ROUTED TO
+                          RP121      45.    .00      45.      24.     19.     .00
                4 COMBINED AT
+                          CP129     738.   4.75     257.      81.     46.     .93
                DIVERSION TO
+                          P129       45.   4.75      45.      24.     19.     .93
                HYDROGRAPH AT
+                          S129      693.   4.75     212.      57.     27.     .93
                DIVERSION TO
+                          S129S     534.   4.75     159.      43.     21.     .93
                HYDROGRAPH AT
+                          S129W     159.   4.75      53.      14.      7.     .93
                ROUTED TO
+                          RS129W    152.   5.00      53.      15.      7.     .93
+                                                                                      1.24
5.00

                HYDROGRAPH AT
+                          S122S     306.   4.92     118.      32.     15.     .00
                ROUTED TO
+                          RS122S    300.   5.00     117.      33.     16.     .00
+                                                                                      1.46
5.00

                HYDROGRAPH AT
+                          SB130     131.   4.58      39.      10.      5.     .25
                3 COMBINED AT
+                          CP130     557.   5.00     207.      58.     28.    1.18
                DIVERSION TO
+                          S130S     393.   5.00     146.      41.     20.    1.18
                HYDROGRAPH AT
+                          S130W     164.   5.00      61.      17.      8.    1.18
                ROUTED TO
+                          RS130W    159.   5.25      61.      18.      9.    1.18
+                                                                                      1.48
5.25

                HYDROGRAPH AT
+                          S123S     501.   5.08     165.      46.     22.     .00
                ROUTED TO
+                          RS123S    489.   5.25     165.      47.     23.     .00
+                                                                                      1.06
5.25
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                HYDROGRAPH AT
+                          SB131     141.   4.58      42.      11.      5.     .25

                HYDROGRAPH AT
+                           P123      33.    .00      33.      11.      5.     .00

                ROUTED TO
+                          RP123      33.    .00      33.      11.      6.     .00

                4 COMBINED AT
+                          CP131     766.   5.25     300.      87.     42.    1.43

                DIVERSION TO
+                           P131      72.   5.25      72.      25.     12.    1.43

                HYDROGRAPH AT
+                           S131     694.   5.25     228.      62.     30.    1.43

                DIVERSION TO
+                          S131S     580.   5.25     186.      51.     24.    1.43

                HYDROGRAPH AT
+                          S131W     114.   5.25      42.      12.      6.    1.43

                ROUTED TO
+                         RS131W     111.   5.50      42.      12.      6.    1.43
+                                                                                   1.21
5.50

                HYDROGRAPH AT
+                          SB132     160.   4.50      44.      11.      5.     .25

                3 COMBINED AT
+                          CP132     979.   5.33     358.      97.     46.    6.59

                ROUTED TO
+                          RS132     970.   5.42     358.      97.     47.    6.59
+                                                                                   2.00
5.42

                HYDROGRAPH AT
+                          SB133     259.   4.33      57.      14.      7.     .28

                HYDROGRAPH AT
+                          S126S      72.   4.25       9.       2.      1.     .00

                ROUTED TO
+                         RS126S      67.   4.50       9.       2.      1.     .00
+                                                                                    .54
4.50

                HYDROGRAPH AT
+                           IF51      74.    .00      15.       4.      2.     .00

                ROUTED TO
+                           RS51      74.    .00      21.       5.      3.     .00
+                                                                                    .40
.00

                HYDROGRAPH AT
+                           IF67     167.    .00      45.      11.      5.     .00

                ROUTED TO
+                           RS67     167.    .00      56.      14.      7.     .00
+                                                                                    .62
.00

                4 COMBINED AT
+                          CP133     325.   4.42     143.      36.     17.     .28

                DIVERSION TO
+                           P133      18.   4.42      18.       5.      2.     .28

                HYDROGRAPH AT
+                           S133     307.   4.42     125.      31.     15.     .28

                DIVERSION TO
+                          S133S      43.   4.42      18.       5.      2.     .28

                HYDROGRAPH AT
+                          S133W     263.   4.42     106.      27.     13.     .28

                ROUTED TO
+                         RS133W     255.   4.58     114.      29.     14.     .28
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+                                                                                                  .77
4.58
          HYDROGRAPH AT
+                          P133       18.    .00        18.        5.        2.       .00
          ROUTED TO
+                          RP133      18.    .00        18.        5.        2.       .00
          2 COMBINED AT
+                          CP134A    273.   4.58       132.       34.       16.       .28
          HYDROGRAPH AT
+                          S127S     237.   4.50        80.       20.       10.       .00
          ROUTED TO
+                          RS127S    231.   4.67        81.       21.       10.       .00
+                                                                                                  .61
4.67
          HYDROGRAPH AT
+                          SB134     240.   4.33        56.       14.        7.       .25
          DIVERSION TO
+                          RET134    240.   5.25        48.       12.        6.       .25
          HYDROGRAPH AT
+                          D134       79.   5.25         8.        2.        1.       .25
          HYDROGRAPH AT
+                          P126       71.   3.75        25.        6.        3.       .00
          ROUTED TO
+                          RP126      71.   3.83        25.        6.        3.       .00
          HYDROGRAPH AT
+                          P127       64.    .00        64.       45.       41.       .00
          ROUTED TO
+                          RP127      64.    .00        64.       45.       42.       .00
          5 COMBINED AT
+                          CP134     638.   4.58       309.      109.       72.       .53
          DIVERSION TO
+                          P134      286.   4.58       241.       92.       64.       .53
          HYDROGRAPH AT
+                          S134      352.   4.58        68.       17.        8.       .53
          DIVERSION TO
+                          S134S     183.   4.58        41.       10.        5.       .53
          HYDROGRAPH AT
+                          S134W     170.   4.58        27.        7.        3.       .53
          ROUTED TO
+                          RS134W    166.   4.67        28.        7.        3.       .53
+                                                                                                  .65
4.67
          HYDROGRAPH AT
+                          SB135     106.   4.33        28.        7.        3.       .12
          2 COMBINED AT
+                          CP135     257.   4.67        55.       14.        7.       .65
          DIVERSION TO
+                          P135       26.   4.67        16.        4.        2.       .65
          HYDROGRAPH AT
+                          S135      231.   4.67        39.       10.        5.       .65
          ROUTED TO
+                          RS135     228.   4.75        39.       10.        5.       .65
+                                                                                                  .76
4.75
          HYDROGRAPH AT
+                          SB136     115.   4.25        26.        7.        3.       .12
          DIVERSION TO
+                          RET136    115.    .00        26.        7.        3.       .12
          HYDROGRAPH AT
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+                    D136      0.    .00       0.       0.       0.      .12
        HYDROGRAPH AT
+                    P135     26.   3.67      16.       4.       2.      .00
        ROUTED TO
+                   RP135     26.   3.75      16.       4.       2.      .00
        3 COMBINED AT
+                   CP136    254.   4.75      55.      14.       7.      .77
        DIVERSION TO
+                    P136     39.   4.75      21.       6.       3.      .77
        HYDROGRAPH AT
+                    S136    215.   4.75      34.       8.       4.      .77
        DIVERSION TO
+                   S136S     61.   4.75      10.       2.       1.      .77
        HYDROGRAPH AT
+                   S136W    154.   4.75      24.       6.       3.      .77
        ROUTED TO
+                  RS136W    146.   5.00      24.       6.       3.      .77
+                                                                              .61
5.00
        HYDROGRAPH AT
+                   S129S    534.   4.75     159.      43.      21.      .00
        ROUTED TO
+                  RS129S    517.   4.92     158.      44.      21.      .00
+                                                                             1.09
4.92
        HYDROGRAPH AT
+                   SB137    204.   4.42      51.      13.       6.      .25
        HYDROGRAPH AT
+                    P129     45.    .00      45.      24.      19.      .00
        ROUTED TO
+                   RP129     45.    .00      45.      24.      19.      .00
        HYDROGRAPH AT
+                    P136     39.   4.00      21.       6.       3.      .00
        ROUTED TO
+                   RP136     39.   4.17      21.       6.       3.      .00
        5 COMBINED AT
+                   CP137    880.   4.92     298.      93.      52.     1.02
        DIVERSION TO
+                    P137    134.   4.92     133.      51.      32.     1.02
        HYDROGRAPH AT
+                    S137    746.   4.92     166.      42.      20.     1.02
        DIVERSION TO
+                   S137S    611.   4.92     144.      37.      18.     1.02
        HYDROGRAPH AT
+                   S137W    135.   4.92      21.       5.       3.     1.02
        ROUTED TO
+                  RS137W    122.   5.25      21.       5.       3.     1.02
+                                                                              .66
5.25
        HYDROGRAPH AT
+                   S130S    393.   5.00     146.      41.      20.      .00
        ROUTED TO
+                  RS130S    389.   5.08     146.      42.      20.      .00
+                                                                             1.50
5.08
        HYDROGRAPH AT
+                   SB138    187.   4.42      45.      11.       5.      .25
        HYDROGRAPH AT
+                    P137    134.    .00     133.      51.      32.      .00
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                ROUTED TO
+                          RP137     134.    .00      133.     51.     32.     .00
                4 COMBINED AT
+                          CP138     724.   5.08      343.    110.     60.    1.27
                DIVERSION TO
+                           P138     134.   5.08      134.     53.     33.    1.27
                HYDROGRAPH AT
+                           S138     590.   5.08      209.     57.     27.    1.27
                DIVERSION TO
+                          S138S     218.   5.08       81.     22.     11.    1.27
                HYDROGRAPH AT
+                          S138W     371.   5.08      128.     35.     17.    1.27
                ROUTED TO
+                         RS138W     367.   5.25      128.     36.     17.    1.27
+                                                                                    1.10
5.25
                HYDROGRAPH AT
+                          S131S     580.   5.25      186.     51.     24.     .00
                ROUTED TO
+                         RS131S     570.   5.33      186.     52.     25.     .00
+                                                                                    1.07
5.33
                HYDROGRAPH AT
+                          SB139     170.   4.42       45.     12.      6.     .25
                DIVERSION TO
+                         RET139      62.   4.42        8.      2.      1.     .25
                HYDROGRAPH AT
+                           D139     170.   4.42       38.     10.      5.     .25
                HYDROGRAPH AT
+                           P131      72.    .00       72.     25.     12.     .00
                ROUTED TO
+                          RP131      72.    .00       72.     25.     12.     .00
                4 COMBINED AT
+                          CP139    1076.   5.33      423.    123.     59.    1.52
                DIVERSION TO
+                           P139      62.   5.33       62.     22.     11.    1.52
                HYDROGRAPH AT
+                           S139    1014.   5.33      361.    100.     48.    1.52
                DIVERSION TO
+                          S139S     854.   5.33      324.     91.     44.    1.52
                HYDROGRAPH AT
+                          S139W     160.   5.33       38.     10.      5.    1.52
                ROUTED TO
+                         RS139W     153.   5.58       38.     10.      5.    1.52
+                                                                                     .71
5.58
                HYDROGRAPH AT
+                          SB140     175.   4.50       52.     13.      6.     .25
                DIVERSION TO
+                         RET140      51.   4.50        8.      2.      1.     .25
                HYDROGRAPH AT
+                           D140     175.   4.50       45.     11.      5.     .25
                HYDROGRAPH AT
+                           P139      62.    .00       62.     22.     11.     .00
                ROUTED TO
+                          RP139      62.    .00       62.     23.     11.     .00
                4 COMBINED AT
+                          CP140    1249.   5.42      503.    141.     68.    8.36
                DIVERSION TO
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+                          P140      83.   5.42      83.      32.      15.    8.36
          HYDROGRAPH AT
+                          S140    1166.   5.42     420.     109.      52.    8.36
          ROUTED TO
+                         RS140    1157.   5.50     419.     109.      53.    8.36
+                                                                                   2.54
5.50
          HYDROGRAPH AT
+                         SB141     282.   4.33      69.      18.       8.     .32
          HYDROGRAPH AT
+                          IF71      30.  17.00      30.      30.      30.     .10
          ROUTED TO
+                          RC71      30.  17.33      30.      30.      29.     .10
+                                                                                   .39
17.42
          HYDROGRAPH AT
+                         S133S      43.   4.42      18.       5.       2.     .00
          ROUTED TO
+                        RS133S      39.   5.17      22.       6.       3.     .00
+                                                                                   .84
5.17
          3 COMBINED AT
+                         CP141     316.   4.33     117.      52.      41.     .42
          ROUTED TO
+                         RC141     314.   4.42     117.      52.      41.     .42
+                                                                                  3.83
4.42
          HYDROGRAPH AT
+                         S134S     183.   4.58      41.      10.       5.     .00
          ROUTED TO
+                        RS134S     178.   4.75      43.      11.       5.     .00
+                                                                                   .56
4.75
          HYDROGRAPH AT
+                         SB142     110.   5.00      48.      13.       6.     .23
          3 COMBINED AT
+                         CP142     564.   4.67     196.      76.      52.     .65
          ROUTED TO
+                         BS142      60.   1.33      60.      60.      60.     .65
+                                                                                1219.47
7.58
          ROUTED TO
+                         RC142      60.   1.42      60.      60.      60.     .65
+                                                                                   1.93
1.50
          HYDROGRAPH AT
+                         S136S      61.   4.75      10.       2.       1.     .00
          ROUTED TO
+                        RS136S      57.   5.17      10.       2.       1.     .00
+                                                                                   .71
5.17
          HYDROGRAPH AT
+                         SB143     187.   4.50      52.      13.       6.     .23
          HYDROGRAPH AT
+                          P134     286.    .00     241.      92.      64.     .00
          ROUTED TO
+                         RP134     286.    .00     242.      92.      64.     .00
          4 COMBINED AT
+                         CP143     533.   4.50     358.     168.     132.     .88
          ROUTED TO
+                         BS143     480.   5.33     215.     127.     108.     .88
+                                                                                1223.10
5.33
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                ROUTED TO
+                         RC143      480.   5.42     215.     127.     108.     .88
+                                                                                      4.82
5.42

                HYDROGRAPH AT
+                         S137S      611.   4.92     144.      37.      18.     .00

                ROUTED TO
+                         RS137S     597.   5.00     143.      38.      18.     .00
+                                                                                      1.39
5.00

                HYDROGRAPH AT
+                         SB144      145.   4.75      51.      13.       6.     .23

                DIVERSION TO
+                         RET144      75.   4.75       8.       2.       1.     .23

                HYDROGRAPH AT
+                         D144       145.   4.75      45.      11.       5.     .23

                3 COMBINED AT
+                         CP144     1161.   5.08     389.     171.     131.    1.11

                ROUTED TO
+                         RC144     1154.   5.17     389.     171.     131.    1.11
+                                                                                      7.38
5.17

                HYDROGRAPH AT
+                         S138S      218.   5.08      81.      22.      11.     .00

                ROUTED TO
+                         RS138S     210.   5.25      81.      23.      11.     .00
+                                                                                      1.19
5.25

                HYDROGRAPH AT
+                         SB145      205.   4.42      53.      13.       6.     .24

                HYDROGRAPH AT
+                         P138       134.    .00     134.      53.      33.     .00

                ROUTED TO
+                         RP138      134.    .00     134.      54.      33.     .00

                HYDROGRAPH AT
+                         SB148       68.   4.83      36.      11.       5.     .15

                5 COMBINED AT
+                         CP145     1664.   5.17     670.     268.     187.    1.50

                ROUTED TO
+                         BS145     1063.   6.00     411.     238.     208.    1.50
+                                                                                   1219.88
6.00

                ROUTED TO
+                         RC145     1058.   6.08     411.     238.     208.    1.50
+                                                                                      5.73
6.08

                HYDROGRAPH AT
+                         S139S      854.   5.33     324.      91.      44.     .00

                ROUTED TO
+                         RS139S     841.   5.42     323.      92.      44.     .00
+                                                                                      1.88
5.42

                HYDROGRAPH AT
+                         SB146      182.   4.50      50.      13.       6.     .24

                DIVERSION TO
+                         RET146      56.   4.50       6.       2.       1.     .24

                HYDROGRAPH AT
+                         D146       182.   4.50      44.      11.       5.     .24

                HYDROGRAPH AT
+                         SB149       69.   4.17      17.       4.       2.     .06

                4 COMBINED AT
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+                    CP146    1675.   5.92     775.     345.     260.     1.80
        ROUTED TO
+                    RC146    1668.   6.00     775.     346.     260.     1.80          7.45
6.00
        DIVERSION TO
+                    P146A     175.   6.00     175.     175.     175.     1.80
        HYDROGRAPH AT
+                    S146A    1493.   6.00     600.     171.      85.     1.80
        DIVERSION TO
+                    P146B     746.   6.00     300.      86.      42.     1.80
        HYDROGRAPH AT
+                    S146B     746.   6.00     300.      86.      42.     1.80
        HYDROGRAPH AT
+                    SB147     132.   4.58      39.      10.       5.      .23
        HYDROGRAPH AT
+                    P140       83.    .00      83.      32.      15.      .00
        ROUTED TO
+                    RP140      83.    .00      83.      32.      16.      .00
        4 COMBINED AT
+                    CP147    1829.   5.75     841.     238.     116.    10.39
        ROUTED TO
+                    BS147    1575.   6.17     617.     159.      77.    10.39       1217.00
+
6.17
        HYDROGRAPH AT
+                    P146B     746.   6.00     300.      86.      42.      .00
        2 COMBINED AT
+                    CP147A   2307.   6.08     886.     244.     120.    10.39
        ROUTED TO
+                    RP147A   2305.   6.08     886.     244.     120.    10.39
        HYDROGRAPH AT
+                    IFHC23    362.   9.42     127.      36.      17.      .00
        2 COMBINED AT
+                    CPCSTB   2305.   6.08     931.     279.     137.    10.39
        ROUTED TO
+                    BSCST       0.    .00       0.       0.       0.    10.39       1212.62
+
49.92
        HYDROGRAPH AT
+                    SB202     128.   4.33      31.       8.       4.      .16
        HYDROGRAPH AT
+                    IP208      16.    .00      16.      16.      16.      .00
        2 COMBINED AT
+                    CP202     144.   4.33      47.      24.      20.      .16
        DIVERSION TO
+                    P202       32.   4.33      27.      19.      17.      .16
        HYDROGRAPH AT
+                    S202      112.   4.33      20.       5.       2.      .16
        DIVERSION TO
+                    S202S      62.   4.33      11.       3.       1.      .16
        HYDROGRAPH AT
+                    S202W      50.   4.33       9.       2.       1.      .16
        ROUTED TO
+                    RS202W     49.   4.50       9.       2.       1.      .16          .45
+
4.50
        HYDROGRAPH AT
+                    SB203     165.   4.17      33.       8.       4.      .18
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                2 COMBINED AT
+                          CP203      195.   4.33      41.      10.      5.      .34
                DIVERSION TO
+                           P203       59.   4.33      24.       6.      3.      .34
                HYDROGRAPH AT
+                           S203      136.   4.33      18.       4.      2.      .34
                ROUTED TO
+                          RS203      128.   4.50      18.       4.      2.      .34
+                                                                                        .74
4.50
                HYDROGRAPH AT
+                           P203       59.   3.75      24.       6.      3.      .00
                ROUTED TO
+                          RP203       59.   3.92      24.       6.      3.      .00
                HYDROGRAPH AT
+                          SB204      197.   4.33      44.      11.      5.      .24
                DIVERSION TO
+                         RET204      168.   4.33      16.       4.      2.      .24
                HYDROGRAPH AT
+                           D204      197.   4.33      28.       7.      3.      .24
                3 COMBINED AT
+                          CP204      367.   4.42      69.      17.      8.      .58
                DIVERSION TO
+                          S204N      235.   4.42      45.      11.      5.      .58
                HYDROGRAPH AT
+                          S204W      132.   4.42      24.       6.      3.      .58
                ROUTED TO
+                         RS204W      129.   4.58      24.       6.      3.      .58
+                                                                                        .56
4.58
                HYDROGRAPH AT
+                          SB206      124.   4.17      23.       6.      3.      .14
                DIVERSION TO
+                         RET206      105.   4.17       8.       2.      1.      .14
                HYDROGRAPH AT
+                           D206      124.   4.17      15.       4.      2.      .14
                2 COMBINED AT
+                          CP206      208.   4.50      40.      10.      5.      .72
                ROUTED TO
+                          RS206      207.   4.50      40.      10.      5.      .72
+                                                                                        .50
4.50
                HYDROGRAPH AT
+                          SB207       98.   4.25      21.       5.      3.      .12
                2 COMBINED AT
+                          CP207      287.   4.50      61.      15.      7.      .84
                HYDROGRAPH AT
+                          S202S       62.   4.33      11.       3.      1.      .00
                ROUTED TO
+                         RS202S       57.   4.83      11.       3.      1.      .00
+                                                                                        .40
4.83
                HYDROGRAPH AT
+                          SB208      112.   4.42      30.       8.      4.      .17
                DIVERSION TO
+                         RET208       82.   4.42       8.       2.      1.      .17
                HYDROGRAPH AT
+                           D208      112.   4.42      22.       6.      3.      .17
                2 COMBINED AT
+                          CP208      153.   4.58      33.       8.      4.      .17
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                DIVERSION TO
+                                P208      16.   4.58      8.      2.      1.     .17
                HYDROGRAPH AT
+                                S208     137.   4.58     26.      6.      3.     .17
                DIVERSION TO
+                               S208S      53.   4.58     10.      3.      1.     .17
                HYDROGRAPH AT
+                               S208W      84.   4.58     16.      4.      2.     .17
                ROUTED TO
+                              RS208W      81.   4.92     16.      4.      2.     .17
+                                                                                        .44
4.92
                HYDROGRAPH AT
+                               SB209     155.   4.33     36.      9.      4.     .19
                2 COMBINED AT
+                               CP209     173.   4.75     51.     13.      6.     .36
                DIVERSION TO
+                                P209       9.   4.75      8.      2.      1.     .36
                HYDROGRAPH AT
+                                S209     164.   4.75     43.     11.      5.     .36
                ROUTED TO
+                               RS209     160.   5.00     43.     11.      5.     .36
+                                                                                        .79
5.00
                HYDROGRAPH AT
+                               SB210     131.   4.50     38.     10.      5.     .17
                DIVERSION TO
+                              RET210     131.   5.17     28.      7.      3.     .17
                HYDROGRAPH AT
+                                D210      76.   5.17     11.      3.      1.     .17
                2 COMBINED AT
+                               CP210     228.   5.17     54.     13.      6.     .54
                DIVERSION TO
+                               S210S      96.   5.17     23.      6.      3.     .54
                HYDROGRAPH AT
+                               S210W     132.   5.17     31.      8.      4.     .54
                ROUTED TO
+                              RS210W     121.   5.42     31.      8.      4.     .54
+                                                                                        .43
5.42
                HYDROGRAPH AT
+                               SB211     215.   4.33     52.     13.      6.     .26
                2 COMBINED AT
+                               CP211     237.   4.67     82.     21.     10.     .80
                ROUTED TO
+                               RS211     233.   4.83     82.     21.     10.     .80
+                                                                                        .57
4.83
                HYDROGRAPH AT
+                               SB212     176.   4.25     40.     10.      5.     .21
                DIVERSION TO
+                              RET212      13.   4.25      4.      1.      0.     .21
                HYDROGRAPH AT
+                                D212     176.   4.25     36.      9.      4.     .21
                HYDROGRAPH AT
+                               IP213      11.    .00     11.     11.     11.     .00
                HYDROGRAPH AT
+                               IP218      99.    .00     99.     99.     99.     .00
                4 COMBINED AT
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+                    CP212     491.   4.42      228.      140.      124.      1.00

        DIVERSION TO
+                    P212       99.   4.42       99.       99.       99.      1.00

        HYDROGRAPH AT
+                    S212      392.   4.42      129.       41.       25.      1.00

        ROUTED TO
+                   RS212      389.   4.42      129.       41.       25.      1.00
+                                                                                .73
4.42

        HYDROGRAPH AT
+                   SB213      123.   4.33       28.        7.        3.       .19

        2 COMBINED AT
+                   CP213      511.   4.42      156.       48.       29.      1.19

        DIVERSION TO
+                    P213       11.   4.42       11.       11.       11.      1.19

        HYDROGRAPH AT
+                    S213      500.   4.42      145.       37.       18.      1.19

        2 COMBINED AT
+                     CPA      779.   4.50      205.       53.       25.      2.04

        HYDROGRAPH AT
+                   S208S       53.   4.58       10.        3.        1.       .00

        ROUTED TO
+                  RS208S       51.   5.00       10.        3.        1.       .00
+                                                                                .31
5.00

        HYDROGRAPH AT
+                   SB214      128.   4.42       37.        9.        4.       .17

        2 COMBINED AT
+                   CP214      143.   4.83       47.       12.        6.       .17

        DIVERSION TO
+                   S214S      113.   4.83       38.       10.        5.       .17

        HYDROGRAPH AT
+                   S214W       30.   4.83        9.        2.        1.       .17

        ROUTED TO
+                  RS214W       28.   5.25        9.        2.        1.       .17
+                                                                                .27
5.25

        HYDROGRAPH AT
+                    P209        9.   3.08        8.        2.        1.       .00

        ROUTED TO
+                   RP209        9.   3.25        8.        2.        1.       .00

        HYDROGRAPH AT
+                   SB215      115.   4.42       31.        8.        4.       .17

        3 COMBINED AT
+                   CP215      132.   4.50       47.       12.        6.       .33

        DIVERSION TO
+                   S215S       61.   4.50       23.        6.        3.       .33

        HYDROGRAPH AT
+                   S215W       71.   4.50       24.        6.        3.       .33

        ROUTED TO
+                  RS215W       69.   4.92       24.        6.        3.       .33
+                                                                                .41
4.92

        HYDROGRAPH AT
+                   S210S       96.   5.17       23.        6.        3.       .00

        ROUTED TO
+                  RS210S       84.   5.50       23.        6.        3.       .00
+                                                                                .42
5.50

        HYDROGRAPH AT
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+                          SB216      224.   4.33        54.       14.       7.       .24
          3 COMBINED AT
+                          CP216      270.   4.42        99.       26.      12.       .57
          DIVERSION TO
+                          S216S       76.   4.42        22.        5.       3.       .57
          HYDROGRAPH AT
+                          S216W      194.   4.42        77.       20.      10.       .57
          ROUTED TO
+                         RS216W      192.   4.67        77.       20.      10.       .57
+                                                                                          .57
4.67
          HYDROGRAPH AT
+                          SB217       88.   4.33        22.        6.       3.       .11
          2 COMBINED AT
+                          CP217      270.   4.50        98.       26.      12.       .68
          DIVERSION TO
+                           P217        5.   4.50         5.        2.       1.       .68
          HYDROGRAPH AT
+                           S217      265.   4.50        93.       24.      11.       .68
          DIVERSION TO
+                          S217S       97.   4.50        36.        9.       5.       .68
          HYDROGRAPH AT
+                          S217W      168.   4.50        56.       14.       7.       .68
          ROUTED TO
+                         RS217W      166.   4.67        56.       14.       7.       .68
+                                                                                          .48
4.67
          HYDROGRAPH AT
+                           P217        5.    .92         5.        2.       1.       .00
          ROUTED TO
+                          RP217        5.   1.08         5.        2.       1.       .00
          HYDROGRAPH AT
+                          SB218       40.   4.42        12.        3.       1.       .06
          3 COMBINED AT
+                          CP218      206.   4.67        73.       19.       9.       .74
          DIVERSION TO
+                           P218       99.   4.67        55.       15.       7.       .74
          HYDROGRAPH AT
+                           S218      107.   4.67        18.        5.       2.       .74
          ROUTED TO
+                          RS218      103.   4.92        18.        5.       2.       .74
+                                                                                          .33
4.92
          HYDROGRAPH AT
+                          SB219      146.   4.25        30.        7.       4.       .18
          2 COMBINED AT
+                          CP219      165.   4.75        48.       12.       6.       .92
          ROUTED TO
+                          BS219      142.   5.00        47.       12.       6.       .92
+                                                                                     1204.89
5.00
          HYDROGRAPH AT
+                          S215S       61.   4.50        23.        6.       3.       .00
          ROUTED TO
+                         RS215S       61.   4.67        23.        6.       3.       .00
+                                                                                          .47
4.67
          HYDROGRAPH AT
+                          SB221       80.   4.25        19.        5.       2.       .09
          2 COMBINED AT
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+                    CP221     131.   4.42      42.      11.      5.      .09
        ROUTED TO
+                    RC221     128.   4.58      42.      11.      5.      .09
+                                                                              2.37
4.58
        HYDROGRAPH AT
+                    S216S      76.   4.42      22.       5.      3.      .00
        ROUTED TO
+                   RS216S      74.   4.58      22.       5.      3.      .00
+                                                                               .36
4.58
        HYDROGRAPH AT
+                    SB222     108.   4.33      28.       7.      3.      .12
        3 COMBINED AT
+                    CP222     301.   4.50      91.      23.     11.      .21
        ROUTED TO
+                    RC222     295.   4.67      91.      23.     11.      .21
+                                                                              3.67
4.67
        HYDROGRAPH AT
+                    S217S      97.   4.50      36.       9.      5.      .00
        ROUTED TO
+                   RS217S      96.   4.58      36.       9.      5.      .00
+                                                                               .66
4.58
        HYDROGRAPH AT
+                    SB223     123.   4.25      31.       8.      4.      .13
        DIVERSION TO
+                   RET223     110.   4.25      12.       3.      1.      .13
        HYDROGRAPH AT
+                     D223     123.   4.25      19.       5.      2.      .13
        3 COMBINED AT
+                    CP223     491.   4.58     146.      38.     18.      .34
        ROUTED TO
+                    RC223     486.   4.67     146.      38.     18.      .34
+                                                                              4.61
4.67
        HYDROGRAPH AT
+                    SB224     116.   4.33      30.       8.      4.      .13
        DIVERSION TO
+                   RET224      99.   4.33      10.       3.      1.      .13
        HYDROGRAPH AT
+                     D224     116.   4.33      21.       5.      2.      .13
        2 COMBINED AT
+                    CP224     579.   4.58     167.      43.     21.      .47
        ROUTED TO
+                    RC224     574.   4.75     166.      43.     21.      .47
+                                                                              4.54
4.75
        HYDROGRAPH AT
+                    SB225     124.   4.42      35.       9.      4.      .17
        2 COMBINED AT
+                    CP225     678.   4.75     200.      52.     25.      .64
        ROUTED TO
+                    BS225     674.   4.75     199.      51.     25.      .64
+                                                                           1204.09
4.75
        2 COMBINED AT
+                      CPB     806.   4.83     246.      63.     30.     1.56
        2 COMBINED AT
+                      CPC    1479.   4.67     449.     116.     56.     3.59
```

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                HYDROGRAPH AT
+                          SB226      36.   4.50      12.       3.       2.      .05
                DIVERSION TO
+                          S226S      23.   4.50       8.       2.       1.      .05
                HYDROGRAPH AT
+                          S226W      13.   4.50       4.       1.       1.      .05
                ROUTED TO
+                         RS226W      12.   5.17       4.       1.       1.      .05
+                                                                                      .14
5.17
                HYDROGRAPH AT
+                          SB227     101.   4.42      29.       7.       4.      .12
                2 COMBINED AT
+                          CP227     106.   4.42      33.       9.       4.      .17
                DIVERSION TO
+                           P227      21.   4.42      15.       4.       2.      .17
                HYDROGRAPH AT
+                           S227      85.   4.42      18.       5.       2.      .17
                DIVERSION TO
+                          S227S      77.   4.42      17.       4.       2.      .17
                HYDROGRAPH AT
+                          S227W       9.   4.42       2.       0.       0.      .17
                ROUTED TO
+                         RS227W       8.   5.00       2.       0.       0.      .17
+                                                                                      .07
5.00
                HYDROGRAPH AT
+                          SB228     115.   4.33      32.       8.       4.      .13
                2 COMBINED AT
+                          CP228     117.   4.42      34.       9.       4.      .30
                DIVERSION TO
+                          S228S      37.   4.42      11.       3.       1.      .30
                HYDROGRAPH AT
+                          S228W      80.   4.42      23.       6.       3.      .30
                ROUTED TO
+                         RS228W      78.   4.67      22.       6.       3.      .30
+                                                                                      .39
4.67
                HYDROGRAPH AT
+                          SB229     104.   4.33      27.       7.       3.      .13
                2 COMBINED AT
+                          CP229     172.   4.50      50.      13.       6.      .43
                DIVERSION TO
+                           P229      14.   4.50      13.       3.       2.      .43
                HYDROGRAPH AT
+                           S229     158.   4.50      37.       9.       4.      .43
                DIVERSION TO
+                          S229S      65.   4.50      14.       4.       2.      .43
                HYDROGRAPH AT
+                          S229W      93.   4.50      22.       6.       3.      .43
                ROUTED TO
+                         RS229W      88.   4.92      22.       6.       3.      .43
+                                                                                      .36
4.92
                HYDROGRAPH AT
+                          SB230     182.   4.33      52.      13.       6.      .20
                2 COMBINED AT
+                          CP230     234.   4.58      74.      19.       9.      .63
                DIVERSION TO
+                           P230      84.   4.58      47.      12.       6.      .63
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+          HYDROGRAPH AT
                          S230      150.   4.58      28.      7.      3.     .63
           ROUTED TO
+                         BS230     145.   4.75      29.     10.      6.     .63
+                                                                              1202.20
4.75
           ROUTED TO
+                         RC230     115.   5.42      29.     10.      6.     .63
+                                                                                1.35
5.42
           HYDROGRAPH AT
+                         S214S     113.   4.83      38.     10.      5.     .00
           ROUTED TO
+                         RS214S    110.   5.08      38.     10.      5.     .00
+                                                                               .46
5.08
           HYDROGRAPH AT
+                         SB220     197.   4.25      44.     11.      5.     .19
           2 COMBINED AT
+                         CP220     265.   4.33      81.     21.     10.     .19
           DIVERSION TO
+                         S220      196.   3.67      37.      9.      4.     .19
           HYDROGRAPH AT
+                         P220       69.   3.67      43.     12.      6.     .19
           ROUTED TO
+                         RP220      69.   3.75      43.     12.      6.     .19
           HYDROGRAPH AT
+                         SB231      70.   4.33      20.      5.      2.     .08
           DIVERSION TO
+                         S231       45.   3.75       7.      2.      1.     .08
           HYDROGRAPH AT
+                         P231       25.   3.75      13.      3.      2.     .08
           ROUTED TO
+                         RP231      25.   3.92      13.      3.      2.     .08
           HYDROGRAPH AT
+                         SB232     142.   4.42      37.      9.      5.     .19
           DIVERSION TO
+                         RET232     74.   4.42       8.      2.      1.     .19
           HYDROGRAPH AT
+                         D232      142.   4.42      30.      7.      4.     .19
           3 COMBINED AT
+                         CP232     236.   4.42      86.     22.     11.     .46
           DIVERSION TO
+                         P232      138.   4.42      72.     19.      9.     .46
           HYDROGRAPH AT
+                         S232       98.   4.42      14.      3.      2.     .46
           DIVERSION TO
+                         S232S      82.   4.42      12.      3.      1.     .46
           HYDROGRAPH AT
+                         S232W      16.   4.42       2.      0.      0.     .46
           ROUTED TO
+                         RS232W     11.   5.50       2.      0.      0.     .46
+                                                                               .35
5.50
           HYDROGRAPH AT
+                         S226S      23.   4.50       8.      2.      1.     .00
           ROUTED TO
+                         RS226S     22.   4.75       8.      2.      1.     .00
+                                                                               .23
4.75
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                HYDROGRAPH AT
+                          SB233     178.   4.42      48.      12.       6.      .24
                3 COMBINED AT
+                          CP233     194.   4.50      57.      15.       7.      .70
                DIVERSION TO
+                          S233S     106.   4.50      31.       8.       4.      .70
                HYDROGRAPH AT
+                          S233W      88.   4.50      27.       7.       3.      .70
                ROUTED TO
+                         RS233W      86.   4.75      26.       7.       3.      .70
+                                                                                        .61
4.75
                HYDROGRAPH AT
+                          SB234     176.   4.42      44.      11.       5.      .24
                DIVERSION TO
+                         RET234     176.   5.08      34.       9.       4.      .24
                HYDROGRAPH AT
+                           D234      89.   5.08      10.       3.       1.      .24
                HYDROGRAPH AT
+                          S227S      77.   4.42      17.       4.       2.      .00
                ROUTED TO
+                         RS227S      74.   4.67      17.       4.       2.      .00
+                                                                                        .32
4.67
                HYDROGRAPH AT
+                           P227      21.   3.58      15.       4.       2.      .00
                ROUTED TO
+                          RP227      21.   3.75      15.       4.       2.      .00
                4 COMBINED AT
+                          CP234     240.   5.08      68.      18.       8.      .94
                DIVERSION TO
+                           P234     106.   5.08      52.      14.       7.      .94
                HYDROGRAPH AT
+                           S234     134.   5.08      16.       4.       2.      .94
                DIVERSION TO
+                          S234S      82.   5.08      10.       2.       1.      .94
                HYDROGRAPH AT
+                          S234W      51.   5.08       6.       2.       1.      .94
                ROUTED TO
+                         RS234W      36.   5.50       6.       2.       1.      .94
+                                                                                        .41
5.50
                HYDROGRAPH AT
+                          S228S      37.   4.42      11.       3.       1.      .00
                ROUTED TO
+                         RS228S      36.   4.67      11.       3.       1.      .00
+                                                                                        .34
4.67
                HYDROGRAPH AT
+                          SB235     195.   4.33      44.      11.       5.      .25
                3 COMBINED AT
+                          CP235     224.   4.33      61.      15.       7.     1.19
                DIVERSION TO
+                           P235      23.   4.33      18.       5.       2.     1.19
                HYDROGRAPH AT
+                           S235     201.   4.33      43.      11.       5.     1.19
                DIVERSION TO
+                          S235S      79.   4.33      16.       4.       2.     1.19
                HYDROGRAPH AT
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+                    S235W     122.   4.33      27.      7.      3.     1.19
        ROUTED TO
                    RS235W    119.   4.58      27.      7.      3.     1.19
+                                                                              .61
4.58
        HYDROGRAPH AT
+                     P235      23.   3.42      18.      5.      2.      .00
        ROUTED TO
+                    RP235      23.   3.58      18.      5.      2.      .00
        HYDROGRAPH AT
+                    S229S      65.   4.50      14.      4.      2.      .00
        ROUTED TO
+                   RS229S      63.   4.75      14.      4.      2.      .00
+                                                                              .30
4.75
        HYDROGRAPH AT
+                     P229      14.   3.08      13.      3.      2.      .00
        ROUTED TO
+                    RP229      14.   3.25      13.      3.      2.      .00
        HYDROGRAPH AT
+                    SB236     197.   4.33      48.     12.      6.      .25
        DIVERSION TO
+                   RET236      13.   4.33       4.      1.      0.      .25
        HYDROGRAPH AT
+                     D236     197.   4.33      45.     11.      5.      .25
        5 COMBINED AT
+                    CP236     391.   4.50     116.     30.     14.     1.43
        DIVERSION TO
+                     P236      64.   4.50      47.     12.      6.     1.43
        HYDROGRAPH AT
+                     S236     327.   4.50      70.     17.      8.     1.43
        DIVERSION TO
+                    S236S     181.   4.50      37.      9.      4.     1.43
        HYDROGRAPH AT
+                    S236W     147.   4.50      33.      8.      4.     1.43
        ROUTED TO
+                   RS236W     144.   4.67      33.      8.      4.     1.43
+                                                                              .85
4.67
        HYDROGRAPH AT
+                    SB237     195.   4.33      48.     12.      6.      .25
        2 COMBINED AT
+                    CP237     321.   4.50      81.     20.     10.     1.68
        DIVERSION TO
+                     P237      11.   4.50      11.      3.      1.     1.68
        HYDROGRAPH AT
+                     S237     310.   4.50      70.     18.      8.     1.68
        ROUTED TO
+                    RS237     307.   4.50      70.     18.      8.     1.68
+                                                                             2.63
4.50
        HYDROGRAPH AT
+                     P237      11.   2.75      11.      3.      1.      .00
        ROUTED TO
+                    RP237      11.   2.83      10.      3.      1.      .00
        HYDROGRAPH AT
+                    SB238      60.   4.42      13.      3.      2.      .10
        4 COMBINED AT
+                    CP238     446.   4.58     123.     33.     18.     2.41
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+          HYDROGRAPH AT
                              S231       45.    4.33       7.       2.       1.      .00
           ROUTED TO
+                             RS231      41.    4.83       7.       2.       1.      .00
+                                                                                          .45
4.83

+          HYDROGRAPH AT
                              S232S      82.    4.42      12.       3.       1.      .00
           ROUTED TO
+                            RS232S      77.    4.67      12.       3.       1.      .00
+                                                                                          .33
4.67

+          HYDROGRAPH AT
                               P232     138.    4.00      72.      19.       9.      .00
           ROUTED TO
+                              RP232     138.    4.08      72.      19.       9.      .00
           HYDROGRAPH AT
+                              SB239     175.    4.42      43.      11.       5.      .24
           DIVERSION TO
+                             RET239     109.    4.42      10.       3.       1.      .24
           HYDROGRAPH AT
+                               D239     175.    4.42      34.       8.       4.      .24
           4 COMBINED AT
+                              CP239     401.    4.67     125.      32.      15.      .24
           DIVERSION TO
+                               P239     175.    4.67      88.      23.      11.      .24
           HYDROGRAPH AT
+                               S239     226.    4.67      37.       9.       4.      .24
           DIVERSION TO
+                              S239S      97.    4.67      16.       4.       2.      .24
           HYDROGRAPH AT
+                              S239W     128.    4.67      21.       5.       3.      .24
           ROUTED TO
+                             RS239W     123.    4.92      21.       5.       3.      .24
+                                                                                          .55
4.92

+          HYDROGRAPH AT
                              S233S     106.    4.50      31.       8.       4.      .00
           ROUTED TO
+                             RS233S     104.    4.67      31.       8.       4.      .00
+                                                                                          .53
4.67

+          HYDROGRAPH AT
                              SB240     188.    4.42      47.      12.       6.      .25
           3 COMBINED AT
+                              CP240     359.    4.75      99.      25.      12.      .49
           DIVERSION TO
+                               P240      30.    4.75      24.       7.       3.      .49
           HYDROGRAPH AT
+                               S240     329.    4.75      75.      19.       9.      .49
           DIVERSION TO
+                              S240S     219.    4.75      51.      13.       6.      .49
           HYDROGRAPH AT
+                              S240W     110.    4.75      24.       6.       3.      .49
           ROUTED TO
+                             RS240W     104.    5.08      24.       6.       3.      .49
+                                                                                          .69
5.08

+          HYDROGRAPH AT
                               P240      30.    3.50      24.       7.       3.      .00
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                ROUTED TO
+                          RP240      30.   3.67      24.      7.      3.     .00
                HYDROGRAPH AT
+                          S234S      82.   5.08      10.      2.      1.     .00
                ROUTED TO
+                          RS234S     62.   5.33      10.      2.      1.     .00
+                                                                                .29
5.33
                HYDROGRAPH AT
+                          P234      106.   4.33      52.     14.      7.     .00
                ROUTED TO
+                          RP234     106.   4.42      52.     14.      7.     .00
                HYDROGRAPH AT
+                          SB241     212.   4.33      50.     13.      6.     .25
                DIVERSION TO
+                          RET241    212.   4.58      28.      7.      3.     .25
                HYDROGRAPH AT
+                          D241      181.   4.58      23.      6.      3.     .25
                5 COMBINED AT
+                          CP241     375.   5.00     132.     34.     16.     .74
                DIVERSION TO
+                          P241       83.   5.00      60.     16.      8.     .74
                HYDROGRAPH AT
+                          S241      292.   5.00      72.     18.      9.     .74
                DIVERSION TO
+                          S241S     204.   5.00      51.     13.      6.     .74
                HYDROGRAPH AT
+                          S241W      88.   5.00      21.      5.      3.     .74
                ROUTED TO
+                          RS241W     87.   5.17      21.      5.      3.     .74
+                                                                                .39
5.17
                HYDROGRAPH AT
+                          S235S      79.   4.33      16.      4.      2.     .00
                ROUTED TO
+                          RS235S     73.   4.75      16.      4.      2.     .00
+                                                                                .64
4.75
                HYDROGRAPH AT
+                          SB242     199.   4.42      52.     13.      6.     .25
                3 COMBINED AT
+                          CP242     279.   4.83      89.     23.     11.     .98
                DIVERSION TO
+                          P242       50.   4.83      33.      9.      4.     .98
                HYDROGRAPH AT
+                          S242      229.   4.83      56.     14.      7.     .98
                DIVERSION TO
+                          S242S      81.   4.83      20.      5.      2.     .98
                HYDROGRAPH AT
+                          S242W     148.   4.83      36.      9.      4.     .98
                ROUTED TO
+                          RS242W    143.   5.00      36.      9.      4.     .98
+                                                                                .49
5.00
                HYDROGRAPH AT
+                          P242       50.   3.75      33.      9.      4.     .00
                ROUTED TO
+                          RP242      50.   3.92      33.      9.      4.     .00
                HYDROGRAPH AT
+                          S236S     181.   4.50      37.      9.      4.     .00
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                ROUTED TO
+                          RS236S     175.   4.75      37.       9.       4.      .00
+                                                                                          .58
4.75

                HYDROGRAPH AT
+                            P236      64.   3.50      47.      12.       6.      .00

                ROUTED TO
+                           RP236      64.   3.58      47.      12.       6.      .00

                HYDROGRAPH AT
+                           SB243     214.   4.42      60.      15.       7.      .28

                5 COMBINED AT
+                           CP243     601.   4.75     212.      54.      26.     1.26

                DIVERSION TO
+                            P243     125.   4.75      95.      25.      12.     1.26

                HYDROGRAPH AT
+                            S243     476.   4.75     117.      29.      14.     1.26

                DIVERSION TO
+                           S243S     208.   4.75      47.      12.       6.     1.26

                HYDROGRAPH AT
+                           S243W     268.   4.75      70.      17.       8.     1.26

                ROUTED TO
+                          RS243W     263.   4.83      70.      17.       8.     1.26
+                                                                                          1.00
4.83

                HYDROGRAPH AT
+                           SB244     178.   4.33      44.      11.       5.      .22

                3 COMBINED AT
+                          CP244A     832.   4.67     236.      62.      31.     3.90

                ROUTED TO
+                          BS244A     730.   5.00     208.      54.      27.     3.90
+                                                                                       1200.12
5.00

                HYDROGRAPH AT
+                            P243     125.   3.58      95.      25.      12.      .00

                ROUTED TO
+                           RP243     125.   3.67      95.      25.      12.      .00

                2 COMBINED AT
+                           CP244     855.   5.00     296.      79.      39.     3.90

                ROUTED TO
+                           RC244     850.   5.00     296.      79.      39.     3.90
+                                                                                          4.80
5.00

                ROUTED TO
+                          RC244B     850.   5.08     296.      79.      39.     3.90
+                                                                                          3.53
5.08

                HYDROGRAPH AT
+                           S239S      97.   4.67      16.       4.       2.      .00

                ROUTED TO
+                          RS239S      92.   4.83      16.       4.       2.      .00
+                                                                                          .37
4.83

                HYDROGRAPH AT
+                           SB245     198.   4.33      50.      13.       6.      .23

                HYDROGRAPH AT
+                           P146A     175.    .00     175.     175.     175.      .00

                ROUTED TO
+                          RC146A     175.    .00     175.     175.     175.      .00
+                                                                                          1.62
.00

                HYDROGRAPH AT
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+                    SB252      77.   4.08      18.      4.      2.     .06
        HYDROGRAPH AT
+                     P239     175.   4.08      88.     23.     11.     .00
        ROUTED TO
+                    RP239     175.   4.17      88.     23.     11.     .00
        5 COMBINED AT
+                    CP245     634.   4.50     345.    219.    196.     .29
        DIVERSION TO
+                     P245     190.   4.50     190.    180.    177.     .29
        HYDROGRAPH AT
+                     S245     444.   4.50     155.     39.     19.     .29
        ROUTED TO
+                    RC245     442.   4.67     155.     39.     19.     .29
+                                                                        2.78
4.67
        HYDROGRAPH AT
+                    S240S     219.   4.75      51.     13.      6.     .00
        ROUTED TO
+                   RS240S     211.   5.00      51.     13.      6.     .00
+                                                                        1.45
5.00
        HYDROGRAPH AT
+                    SB246     216.   4.33      56.     14.      7.     .23
        3 COMBINED AT
+                    CP246     791.   4.67     260.     66.     32.     .52
        HYDROGRAPH AT
+                    SB247     102.   4.25      21.      5.      3.     .13
        HYDROGRAPH AT
+                    SB248      91.   4.33      24.      6.      3.     .10
        HYDROGRAPH AT
+                     P245     190.    .75     190.    180.    177.     .00
        ROUTED TO
+                    RP245     190.    .83     190.    180.    177.     .00
        4 COMBINED AT
+                    CP247    1147.   4.50     494.    257.    215.     .75
        ROUTED TO
+                    BS247     941.   5.08     406.    236.    207.     .75
+                                                                     1207.39
5.08
        ROUTED TO
+                    RC247     937.   5.17     406.    236.    207.     .75
+                                                                        3.42
5.17
        HYDROGRAPH AT
+                    S241S     204.   5.00      51.     13.      6.     .00
        ROUTED TO
+                   RS241S     201.   5.08      51.     13.      6.     .00
+                                                                         .63
5.08
        HYDROGRAPH AT
+                     P241      83.   4.17      60.     16.      8.     .00
        ROUTED TO
+                    RP241      83.   4.25      60.     16.      8.     .00
        HYDROGRAPH AT
+                    SB253      42.   4.42      15.      4.      2.     .05
        4 COMBINED AT
+                    CP248    1249.   5.17     528.    269.    223.     .81
        ROUTED TO
+                    RC248    1247.   5.17     528.    269.    223.     .81
+                                                                        4.14
5.17
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                HYDROGRAPH AT
+                          S242S      81.   4.83      20.      5.      2.     .00
                ROUTED TO
+                          RS242S     78.   5.17      20.      5.      2.     .00
+                                                                                    1.01
5.17

                HYDROGRAPH AT
+                          SB249     159.   4.42      45.     11.      5.     .18
                DIVERSION TO
+                          RET249    159.   5.58      40.     10.      5.     .18
                HYDROGRAPH AT
+                          D249       38.   5.58       5.      1.      1.     .18
                3 COMBINED AT
+                          CP249    1325.   5.17     553.    275.    226.     .98
                ROUTED TO
+                          RC249    1319.   5.25     553.    275.    226.     .98
+                                                                                    4.64
5.25

                HYDROGRAPH AT
+                          S243S     208.   4.75      47.     12.      6.     .00
                ROUTED TO
+                          RS243S    203.   4.92      47.     12.      6.     .00
+                                                                                     .86
4.92

                HYDROGRAPH AT
+                          SB250     263.   4.33      63.     16.      8.     .30
                DIVERSION TO
+                          RET250    262.   4.42      30.      8.      4.     .30
                HYDROGRAPH AT
+                          D250      258.   4.42      33.      8.      4.     .30
                HYDROGRAPH AT
+                          SB254      63.   4.42      21.      6.      3.     .08
                4 COMBINED AT
+                          CP250    1617.   5.17     654.    301.    238.    1.35
                ROUTED TO
+                          RC250    1612.   5.25     654.    301.    238.    1.35
+                                                                                    4.36
5.25

                HYDROGRAPH AT
+                          SB251     123.   4.33      35.      9.      4.     .13
                DIVERSION TO
+                          RET251    123.   4.67      20.      5.      2.     .13
                HYDROGRAPH AT
+                          D251      105.   4.67      16.      4.      2.     .13
                3 COMBINED AT
+                          CP251    2506.   5.17     965.    384.    279.    5.39
                HYDROGRAPH AT
+                          SB201     103.   4.00      14.      3.      2.     .09
                HYDROGRAPH AT
+                          S204N     235.   4.42      45.     11.      5.     .00
                ROUTED TO
+                          RS204N    230.   4.58      45.     11.      5.     .00
+                                                                                     .56
4.58

                HYDROGRAPH AT
+                          SB205     145.   4.42      38.     10.      5.     .21
                2 COMBINED AT
+                          CP205     362.   4.50      83.     21.     10.     .21
                4 COMBINED AT
+                          CPD      3947.   5.00    1508.    524.    347.    9.28
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                HYDROGRAPH AT
+                          SB401      234.   3.92        51.       13.        6.      .23
                DIVERSION TO
+                          RET401     234.    .00        51.       13.        6.      .23
                HYDROGRAPH AT
+                           D401       0.    .00         0.        0.        0.      .23
                ROUTED TO
+                          RS401       0.    .00         0.        0.        0.      .23
+                                                                                          .00
4.00

                HYDROGRAPH AT
+                          SB301      113.   4.50        40.       10.        5.      .23
                2 COMBINED AT
+                          CP301      113.   4.50        40.       10.        5.      .46
                DIVERSION TO
+                          S301S       27.   4.50        10.        3.        1.      .46
                HYDROGRAPH AT
+                          S301W       87.   4.50        30.        8.        4.      .46
                ROUTED TO
+                          RS301W      84.   4.92        30.        8.        4.      .46
+                                                                                          .54
4.92

                HYDROGRAPH AT
+                          SB302      152.   4.33        48.       12.        6.      .26
                2 COMBINED AT
+                          CP302      209.   4.67        77.       20.       10.      .72
                DIVERSION TO
+                           P302       29.   4.67        25.        7.        3.      .72
                HYDROGRAPH AT
+                           S302      180.   4.67        52.       13.        6.      .72
                DIVERSION TO
+                          S302S       11.   4.67         3.        1.        0.      .72
                HYDROGRAPH AT
+                          S302W      169.   4.67        49.       12.        6.      .72
                ROUTED TO
+                          RS302W     164.   5.00        49.       12.        6.      .72
+                                                                                          .89
5.00

                HYDROGRAPH AT
+                          SB303      141.   4.33        42.       11.        5.      .23
                HYDROGRAPH AT
+                           P302       29.   3.50        25.        7.        3.      .00
                ROUTED TO
+                          RP302       29.   3.83        25.        7.        3.      .00
                3 COMBINED AT
+                          CP303      282.   4.92       114.       30.       14.      .95
                DIVERSION TO
+                          P303        48.   4.92        42.       12.        6.      .95
                HYDROGRAPH AT
+                           S303      234.   4.92        73.       18.        9.      .95
                ROUTED TO
+                          RS303      231.   5.08        73.       18.        9.      .95
+                                                                                          .82
5.08

                HYDROGRAPH AT
+                          SB304      137.   4.42        45.       12.        6.      .23
                DIVERSION TO
+                          RET304     137.    .00        45.       12.        6.      .23
                HYDROGRAPH AT
```

```
+                          D304      0.    .00       0.       0.       0.      .23
          HYDROGRAPH AT
+                          P303     48.   3.50      42.      12.       6.      .00
          ROUTED TO
+                         RP303     48.   4.08      42.      12.       6.      .00
          3 COMBINED AT
+                         CP304    279.   5.08     114.      30.      14.     1.18
          DIVERSION TO
+                          P304     48.   5.08      42.      12.       6.     1.18
          HYDROGRAPH AT
+                          S304    231.   5.08      72.      18.       9.     1.18
          DIVERSION TO
+                         S304S    160.   5.08      50.      12.       6.     1.18
          HYDROGRAPH AT
+                         S304W     72.   5.08      22.       6.       3.     1.18
          ROUTED TO
+                        RS304W     68.   5.67      22.       6.       3.     1.18
+                                                                                .39
5.67
          HYDROGRAPH AT
+                         SB305    197.   4.42      64.      16.       8.      .36
          2 COMBINED AT
+                         CP305    197.   4.42      84.      22.      11.     1.54
          ROUTED TO
+                         BS305     13.   8.58      12.      10.       6.     1.54
+                                                                             1196.63
8.67
          HYDROGRAPH AT
+                        IFDIVR      3.  22.75       3.       3.       2.      .10
          ROUTED TO
+                        RSDIVR      3.  24.00       3.       3.       2.      .10
+                                                                                .08
24.25
          HYDROGRAPH AT
+                         SB402    503.   4.08     118.      30.      14.      .55
          DIVERSION TO
+                        RET402    503.   5.83     115.      29.      14.      .55
          HYDROGRAPH AT
+                          D402     45.   5.83       4.       1.       0.      .55
          2 COMBINED AT
+                         CP402     45.   5.83       4.       3.       3.      .65
          ROUTED TO
+                         RS402     21.   6.92       4.       3.       3.      .65
+                                                                                .30
6.92
          HYDROGRAPH AT
+                         S301S     27.   4.50      10.       3.       1.      .00
          ROUTED TO
+                        RS301S     23.   5.08      10.       3.       1.      .00
+                                                                                .38
5.08
          HYDROGRAPH AT
+                         SB306    183.   4.25      52.      13.       6.      .23
          2 COMBINED AT
+                         CP306    194.   4.33      61.      16.       8.      .23
          ROUTED TO
+                         RS306    190.   4.58      61.      16.       8.      .23
+                                                                                1.37
4.58
          HYDROGRAPH AT
+                         SB308    202.   4.42      61.      16.       7.      .28
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                3 COMBINED AT
+                          CP308     387.   4.50     125.     33.     18.     1.16
                DIVERSION TO
+                           P308      13.   4.50      13.      5.      4.     1.16
                HYDROGRAPH AT
+                           S308     374.   4.50     112.     28.     14.     1.16
                DIVERSION TO
+                          S308S      95.   4.50      30.      7.      4.     1.16
                HYDROGRAPH AT
+                          S308W     279.   4.50      83.     21.     10.     1.16
                ROUTED TO
+                         RS308W     274.   4.75      82.     21.     10.     1.16
+                                                                                    1.25
4.75
                HYDROGRAPH AT
+                          S302S      11.   4.67       3.      1.      0.      .00
                ROUTED TO
+                         RS302S       9.   6.33       3.      1.      0.      .00
+                                                                                     .27
6.33
                HYDROGRAPH AT
+                          SB307     143.   4.58      54.     14.      7.      .27
                DIVERSION TO
+                         RET307     143.   6.58      48.     12.      6.      .27
                HYDROGRAPH AT
+                           D307      40.   6.58       8.      2.      1.      .27
                2 COMBINED AT
+                          CP307      48.   6.58      11.      3.      1.      .27
                DIVERSION TO
+                           P307      13.   6.58       7.      2.      1.      .27
                HYDROGRAPH AT
+                           S307      35.   6.58       4.      1.      1.      .27
                ROUTED TO
+                          RS307      13.   7.67       4.      1.      1.      .27
+                                                                                     .24
7.67
                HYDROGRAPH AT
+                          SB309     178.   4.33      51.     13.      6.      .22
                HYDROGRAPH AT
+                           P308      13.   2.83      13.      5.      4.      .00
                ROUTED TO
+                          RP308      13.   3.25      13.      5.      4.      .00
                4 COMBINED AT
+                          CP309     440.   4.58     148.     40.     21.     1.65
                DIVERSION TO
+                           P309       6.   4.58       6.      4.      3.     1.65
                HYDROGRAPH AT
+                           S309     434.   4.58     142.     36.     18.     1.65
                DIVERSION TO
+                          S309S     262.   4.58      86.     22.     11.     1.65
                HYDROGRAPH AT
+                          S309W     173.   4.58      56.     14.      7.     1.65
                ROUTED TO
+                         RS309W     168.   5.08      55.     14.      7.     1.65
+                                                                                     .70
5.08
                DIVERSION TO
+                          P310A      32.   5.08      25.      7.      3.     1.65
                HYDROGRAPH AT
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+                    S310A     136.   5.08      30.      8.      4.    1.65
+   DIVERSION TO     S310AS     54.   5.08      13.      3.      2.    1.65
+   HYDROGRAPH AT    S310AW     82.   5.08      18.      4.      2.    1.65
+   ROUTED TO        RS310A     70.   6.25      18.      4.      2.    1.65
+                                                                          .57
6.25
+   HYDROGRAPH AT    P310A      32.   4.58      25.      7.      3.     .00
+   ROUTED TO        RP310A     32.   4.75      25.      7.      3.     .00
+   HYDROGRAPH AT    P307       13.   6.50       7.      2.      1.     .00
+   HYDROGRAPH AT    P309        6.   1.25       6.      4.      3.     .00
+   2 COMBINED AT    CP310B     19.   6.50      13.      5.      4.     .00
+   ROUTED TO        RC310B     14.   9.00      11.      5.      4.     .00
+                                                                          .78
9.00
+   HYDROGRAPH AT    S304S     160.   5.08      50.     12.      6.     .00
+   ROUTED TO        RS304S    159.   5.33      50.     12.      6.     .00
+                                                                          .77
5.33
+   HYDROGRAPH AT    SB310     777.   4.42     232.     59.     28.    1.11
+   DIVERSION TO     RET310    534.   4.42      46.     12.      6.    1.11
+   HYDROGRAPH AT    D310A     777.   4.42     189.     47.     23.    1.11
+   3 COMBINED AT    CP310     780.   4.42     247.     65.     33.    1.11
+   ROUTED TO        BS310     722.   5.00     209.     55.     28.    1.11
+                                                                         5.66
5.00
+   ROUTED TO        RC310     351.   6.00     182.     54.     27.    1.11
+                                                                         3.05
6.00
+   3 COMBINED AT    CP311A    448.   6.17     224.     65.     33.    2.76
+   HYDROGRAPH AT    SB311     445.   4.50     147.     38.     18.     .83
+   HYDROGRAPH AT    P304       48.   4.00      42.     12.      6.     .00
+   3 COMBINED AT    CP311     626.   6.08     394.    114.     57.    3.59
+   ROUTED TO        BS311      54.  11.00      53.     46.     33.    3.59
+                                                                      1193.86
11.08
+   DIVERSION TO     P311       54.    .00      53.     46.     33.    3.59
+   HYDROGRAPH AT    S311        0.    .00       0.      0.      0.    3.59
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                ROUTED TO
+                          RS311      0.    .00       0.       0.       0.    3.59
+                                                                                          .00
34.92

                HYDROGRAPH AT
+                          S308S     95.   4.50      30.       7.       4.     .00

                ROUTED TO
+                          RS308S    94.   4.83      30.       7.       4.     .00
+                                                                                          .79
4.83

                HYDROGRAPH AT
+                          SB403    225.   3.92      37.       9.       4.     .25

                DIVERSION TO
+                          RET403   225.    .00      37.       9.       4.     .25

                HYDROGRAPH AT
+                          D403      0.    .00       0.       0.       0.     .25

                ROUTED TO
+                          RS403     0.    .00       0.       0.       0.     .25
+                                                                                          .00
4.83

                HYDROGRAPH AT
+                          SB312    250.   4.25      67.      17.       8.     .28

                3 COMBINED AT
+                          CP312    304.   4.50      95.      24.      12.     .53

                DIVERSION TO
+                          P312      39.   4.50      29.       8.       4.     .53

                HYDROGRAPH AT
+                          S312     265.   4.50      66.      16.       8.     .53

                ROUTED TO
+                          RS312    260.   4.67      66.      16.       8.     .53
+                                                                                          1.96
4.67

                HYDROGRAPH AT
+                          S309S    262.   4.58      86.      22.      11.     .00

                ROUTED TO
+                          RS309S   256.   4.92      86.      22.      11.     .00
+                                                                                          1.18
4.92

                HYDROGRAPH AT
+                          SB313    241.   4.00      52.      13.       6.     .22

                HYDROGRAPH AT
+                          P312      39.   3.42      29.       8.       4.     .00

                ROUTED TO
+                          RP312     39.   3.58      29.       8.       4.     .00

                4 COMBINED AT
+                          CP313    646.   4.67     228.      60.      29.     .75

                DIVERSION TO
+                          P313      11.   4.67       9.       3.       1.     .75

                HYDROGRAPH AT
+                          S313     635.   4.67     219.      57.      28.     .75

                ROUTED TO
+                          RS313    624.   4.92     219.      57.      28.     .75
+                                                                                          2.31
4.92

                HYDROGRAPH AT
+                          S310AS    54.   5.08      13.       3.       2.     .00

                ROUTED TO
+                          R310AS    50.   5.67      13.       3.       2.     .00
+                                                                                          .39
5.67

                HYDROGRAPH AT
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+                    SB314      438.   4.25      121.      31.      15.      .50
        DIVERSION TO
+                    RET314     438.   4.42       54.      14.       7.      .50
        HYDROGRAPH AT
+                    D314A      421.   4.42       68.      17.       8.      .50
        HYDROGRAPH AT
+                    P313        11.   3.42        9.       3.       1.      .00
        ROUTED TO
+                    RP313       11.   3.83        9.       3.       1.      .00
        4 COMBINED AT
+                    CP314      948.   4.67      308.      80.      38.     1.25
        ROUTED TO
+                    BS314      211.   6.75       73.      50.      38.     1.25
+                                                                                 1194.06
6.75
        DIVERSION TO
+                    P314         2.   6.75        1.       1.       1.     1.25
        HYDROGRAPH AT
+                    S314       209.   6.75       71.      49.      37.     1.25
        ROUTED TO
+                    RC314      142.   7.25       71.      49.      37.     1.25
+                                                                                    1.20
7.25
        HYDROGRAPH AT
+                    SB315      477.   4.17      111.      28.      13.      .49
        HYDROGRAPH AT
+                    P314         2.   6.58        1.       1.       1.      .00
        ROUTED TO
+                    RP314        2.   8.17        1.       1.       1.      .00
        4 COMBINED AT
+                    CP315      495.   4.17      165.      75.      52.     5.34
        ROUTED TO
+                    BS315      235.   4.92      177.     145.     140.     5.34
+                                                                                 1179.02
4.92
        ROUTED TO
+                    RP315      235.   5.08      177.     145.     140.     5.34
        HYDROGRAPH AT
+                    P311        54.  11.00       53.      46.      33.      .00
        ROUTED TO
+                    RP311       54.  11.08       53.      46.      33.      .00
        2 COMBINED AT
+                    CP316      244.   5.33      209.     189.     173.     5.34
        ROUTED TO
+                    RP316      244.   5.75      209.     189.     173.     5.34
        2 COMBINED AT
+                    CP317      253.   5.92      219.     198.     179.     6.88
1
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SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING

(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

						INTERPOLATED TO COMPUTATION INTERVAL			
ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)

RP103	MANE	1.13	25.00	345.31	-1.00	5.00	25.00	345.00	-1.00
RP111	MANE	.88	64.00	184.41	-1.00	5.00	64.00	5.00	-1.00
RP102	MANE	1.41	18.00	181.62	-1.00	5.00	18.00	5.00	-1.00
RP112	MANE	1.13	83.00	350.32	-1.00	5.00	83.00	350.00	-1.00
RP113	MANE	1.16	83.00	1.16	-1.00	5.00	83.00	5.00	-1.00
RP104	MANE	1.08	56.00	370.37	-1.00	5.00	56.00	370.00	-1.00
RP106	MANE	2.55	6.00	28.04	-1.00	5.00	6.00	30.00	-1.00
RP114	MANE	.98	166.00	409.50	-1.00	5.00	166.00	5.00	-1.00
RP115	MANE	.94	166.01	439.56	-1.00	5.00	166.00	5.00	-1.00
RP118	MANE	.93	64.00	174.56	-1.00	5.00	64.00	5.00	-1.00
RP121	MANE	1.03	45.00	1.03	-1.00	5.00	45.00	5.00	-1.00

RP123	MANE	1.01	33.00	1.01	-1.00	5.00	33.00	5.00	-1.00
RP133	MANE	1.19	18.00	365.81	-1.00	5.00	18.00	365.00	-1.00
RP126	MANE	.54	71.00	227.95	-1.00	5.00	71.00	230.00	-1.00
RP127	MANE	.93	64.00	.93	-1.00	5.00	64.00	5.00	-1.00
RP135	MANE	.75	26.00	224.24	-1.00	5.00	26.00	225.00	-1.00
RP129	MANE	1.02	45.00	444.56	-1.00	5.00	45.00	5.00	-1.00
RP136	MANE	1.14	39.00	245.99	-1.00	5.00	39.00	250.00	-1.00
RP137	MANE	1.00	134.00	169.82	-1.00	5.00	134.00	5.00	-1.00
RP131	MANE	.84	72.00	468.96	-1.00	5.00	72.00	5.00	-1.00
RP139	MANE	1.24	62.00	490.62	-1.00	5.00	62.00	490.00	-1.00

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RP134  MANE        .59   286.00    87.65    -1.00     5.00   286.00    85.00    -1.00

RP138  MANE        .85   134.00      .85    -1.00     5.00   134.00     5.00    -1.00

RP140  MANE        .95    83.00   514.69    -1.00     5.00    83.00     5.00    -1.00

RP147A MANE        .16  2306.26   365.62      .89     5.00  2305.10   365.00      .89

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4941E+03 EXCESS= .0000E+00 OUTFLOW= .4943E+03 BASIN STORAGE=-.2238E+00 PERCENT
ERROR=    .0

RP203  MANE       2.46    59.00   230.48    -1.00     5.00    59.00   235.00    -1.00

RP209  MANE       3.50     9.00   195.38    -1.00     5.00     9.00   200.00    -1.00

RP217  MANE       3.45     5.00    64.81    -1.00     5.00     5.00    65.00    -1.00

RP220  MANE       1.81    69.00   223.98     2.25     5.00    69.00   225.00     2.25

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2289E+02 EXCESS= .0000E+00 OUTFLOW= .2290E+02 BASIN STORAGE= .7557E-10 PERCENT
ERROR=    .0

RP231  MANE       2.66    25.00   232.42     1.57     5.00    25.00   235.00     1.57

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .6618E+01 EXCESS= .0000E+00 OUTFLOW= .6621E+01 BASIN STORAGE= .1098E-09 PERCENT
ERROR=    .0
```

RP227	MANE	2.31	21.00	220.94	-1.00	5.00	21.00	225.00	-1.00
RP235	MANE	2.37	23.00	211.13	-1.00	5.00	23.00	215.00	-1.00
RP229	MANE	2.79	13.90	193.27	-1.00	5.00	13.90	195.00	-1.00
RP237	MANE	.47	11.00	166.33	-1.00	5.00	11.00	170.00	-1.00
RP232	MANE	1.45	138.00	243.42	-1.00	5.00	138.00	245.00	-1.00
RP240	MANE	3.11	30.00	216.53	-1.00	5.00	30.00	220.00	-1.00
RP234	MANE	1.44	106.00	264.19	-1.00	5.00	106.00	265.00	-1.00
RP242	MANE	2.43	50.00	230.24	-1.00	5.00	50.00	235.00	-1.00
RP236	MANE	1.92	64.00	214.64	-1.00	5.00	64.00	215.00	-1.00
RP243	MANE	1.13	125.00	217.37	-1.00	5.00	125.00	220.00	-1.00
RP239	MANE	1.31	175.00	248.16	-1.00	5.00	175.00	250.00	-1.00

RP245	MANE	1.51	190.00	48.25	-1.00	5.00	190.00	50.00	-1.00
RP241	MANE	1.70	83.00	253.51	-1.00	5.00	83.00	255.00	-1.00
RP302	MANE	2.76	29.00	443.39	-1.00	5.00	29.00	230.00	-1.00
RP303	MANE	5.00	48.00	242.37	-1.00	5.00	48.00	245.00	-1.00
RP308	MANE	4.66	13.00	192.61	-1.00	5.00	13.00	195.00	-1.00
RP310A	MANE	1.28	32.00	282.64	-1.00	5.00	32.00	285.00	-1.00
RP312	MANE	1.96	39.00	398.61	-1.00	5.00	39.00	215.00	-1.00
RP313	MANE	3.50	11.00	225.02	-1.00	5.00	11.00	230.00	-1.00
RP314	MANE	5.10	2.00	490.40	-1.00	5.00	2.00	495.00	-1.00
RP315	MANE	2.23	235.18	305.32	2.03	5.00	235.17	305.00	2.03

```
 CONTINUITY SUMMARY (AC-FT) - INFLOW= .5776E+03 EXCESS= .0000E+00 OUTFLOW= .5779E+03 BASIN STORAGE=-.6675E+00 PERCENT
ERROR=    .1


            RP311  MANE          .56     53.58    666.31     -1.00      5.00     53.58    665.00       -1.00


            RP316  MANE         5.44    244.32    343.33      2.50      5.00    244.29    345.00        2.50


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7132E+03 EXCESS= .0000E+00 OUTFLOW= .7128E+03 BASIN STORAGE=-.1226E+01 PERCENT
ERROR=    .2



 *** NORMAL END OF HEC-1 ***


   -----DSS---ZCLOSE Unit:  71,   File: TC-6HR.DSS
             Pointer Utilization:    .19
             Number of Records:    126
             File Size:    463.9  Kbytes
             Percent Inactive:  41.1
```

D.6.2 100-YR, 24-HR HEC-1 OUTPUT

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                    *          609 SECOND STREET           *
 *                                      *                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   27OCT06  TIME  11:21:57  *                    *           (916) 756-1104             *
 *                                      *                    *                                      *
 ****************************************                    ****************************************

X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT
STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                          HEC-1 INPUT                                          PAGE  1

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

         1          ID   TEMPE CANAL FLOODPLAIN DELINEATION STUDY (FCD 2002-22)
         2          ID
         3          ID   100-YEAR, 24-HOUR HEC-1 MODEL
         4          ID   FILENAME: TC-24HR.DAT          DATE: OCTOBER 27, 2006
         5          ID
         6          ID
         7          ID   PREPARED BY HOSIN-RYAN CONSULTANTS, INC. (HRC 03-023)
         8          ID   IN ASSOCIATION WITH COE & VAN LOO CONSULTANTS, INC.
         9          ID
        10          ID   THE TEMPE CANAL FDS MODEL AREA IS BOUNDED BY TEMPE CANAL AND PRICE ROAD TO
        11          ID   THE WEST, CONSOLIDATED CANAL AND SOUTHERN-PACIFIC RAILROAD TO THE EAST,
        12          ID   CROSSCUT CANAL TO THE NORTH, AND WESTERN CANAL AND US60 TO THE SOUTH.
        13          ID   THREE WATERSHED AREAS ARE INCLUDED IN THIS MODEL; THE 100, 200, AND 300
        14          ID   SERIES.  WATERSHED BOUNDARY DESCRIPTIONS ARE GIVEN IN THE MODEL.
        15          ID
        16          ID   INFLOW HYDROGRAPHS TO THE MODEL ARE INCLUDED IN THE FILE TC-24HR.DSS
        17          ID   AND COME FROM THE "CONSOLIDATED CANAL FLOODPLAIN DELINEATION STUDY,"
        18          ID   BY TETRA TECH, INC., MARCH 2003, AND THE "GILBERT-CHANDLER ADMS,
        19          ID   VOL II-FUTURE CONDITIONS HYDROLOGY," BY FCDMC, JANUARY 1994.
        20          ID
        21          ID   NOTES:
        22          ID    - SUB-BASIN AND PRECIPITATION DATA WERE GENERATED USING DDMSW VERSION 2.1.0
        23          ID    - NORMAL DEPTH ROUTING WAS USED FOR STREET FLOW ROUTING
        24          ID    - KINEMATIC WAVE ROUTING WAS USED FOR PIPE FLOW ROUTING
        25          ID    - STREET INTERSECTION FLOW SPLIT RATING CURVES WERE BASED ON NORMAL DEPTH
        26          ID    - PB WERE ADJUSTED BY AREAL REDUCTION FACTORS BASED ON THE FCDMC DRAINAGE
        27          ID      DESIGN MANUAL.  KEY CONCENTRATION POINTS WERE IDENTIFIED ALONG THE
        28          ID      TEMPE CANAL AND ADOT US60 CHANNEL, AND AT DOBSON LAKES AND CARRIAGE
        29          ID      LANE PARK.
        30          ID
                    *  ********************************************************************
                    *  *                                                                  *
                    *  * 100 SERIES WATERSHED -                                           *
                    *  * BOUNDED TO THE NORTH BY CROSSCUT CANAL, TO THE EAST BY CONSOLIDATED *
                    *  * CANAL, TO THE SOUTH BY US60 (SUPERSTITION) FREEWAY, AND TO THE   *
                    *  * WEST BY CENTER STREET AND THE SOUTHERN-PACIFIC RAILROAD.         *
                    *  *                                                                  *
                    *  ********************************************************************
                    *
                    *     CHANGED: START TIME, AT IF71 - CHANGED CONSTANT FLOW TO 39 HR AND ADDED
                    *     ZERO AT 40 HR, AT BS142 CHANGED FIRST Q FROM 60 TO 59.9 TO FIX TIME TO
                    *     PEAK, NO. OF TIME STEPS FROM 300 TO 600, AND
                    *     ADDED NDXMIN OF 6 TO ALL RK RECORDS   MIKE DUNCAN   FCD   05-04-04
                    *
                    *     CHANGED: TEXT NOTE ON RP147A.  HOSKIN-RYAN CONSULTANTS, INC. 2006-10-27
                    *
```

```
                 *
                 *DIAGRAM
   31            IT       5 01JUL93    0100     600
   32            IO       5
1                                        HEC-1 INPUT                                                    PAGE  2

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

   33            KK   SB101
   34            KM  RUNOFF FROM SUB BASIN 101
   35            BA   0.070
   36            IN      15
   37            PB    3.37
   38            KM   AREAL REDUCTION BASED ON ENTIRE 100 SERIES AREA
   39            KM   AREA IS BOUNDED BY THE CONSOLIDATED CANAL ON THE WEST,US 60 ON THE SOUTH,
   40            KM   CENTER ST AND SOME PORTIONS EAST OF CENTER ST ON THE EAST AND TEMPE CANAL
   41            KM   ON THE NORTH.
   42            KM   TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 10.29 SQUARE MILES
   43            KM   AREA REDUCTION FACTOR = 0.937
   44            PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
   45            PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
   46            PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
   47            PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
   48            PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   49            PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   50            PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   51            PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
   52            PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
   53            PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
   54            LG    0.20    0.26    4.80    0.37      44
   55            UC   0.333   0.210
   56            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
   57            UA     100
                 *

   58            KK    IF17
   59            KM  INFLOW IF17 - REFERENCE STATION 17-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
   60            KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
   61            BA       0
   62            ZR     =QI A=TEMPE  B=17-OUT  C=FLOW  F=CC24HR
                 *

   63            KK    RS17
   64            KM  CONSOLIDATED CANAL & STAPLEY DR: ROUTE STREET FLOW IF17 TO
   65            KM  CP101 VIA STAPLEY DR
   66            KM  4 LANE ARTERIAL
   67            RS       3    FLOW      -1
   68            RC   0.018   0.018   0.018    2630  0.0023
   69            RX       0       0      31      31      99      99     130     130
   70            RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

   71            KK    IF25
   72            KM  INFLOW IF25 - REFERENCE STATION 25-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
   73            KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
   74            BA       0
   75            ZR     =QI A=TEMPE  B=25-OUT  C=FLOW  F=CC24HR
                 *
1                                        HEC-1 INPUT                                                    PAGE  3

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

   76            KK    RS25
   77            KM  CONSOLIDATED CANAL & 8TH ST: ROUTE STREET FLOW IF25 TO
   78            KM  CP101 VIA 8TH ST
   79            KM  60-FT RIGHT-OF-WAY COLLECTOR
   80            RS       3    FLOW      -1
   81            RC   0.018   0.018   0.018    2640  0.0023
   82            RX       0       0      13      13      47      47      60      60
   83            RY       4    0.33    0.33       0       0    0.33    0.33       4
                 *

   84            KK   CP101
   85            KM  COMBINE 17-OUT,SB101,25-OUT
   86            HC       3
                 *

   87            KK   RS101
   88            KM  8TH ST & STAPLEY DR: ROUTE STREET FLOW CP101 TO CP102 VIA STAPLEY DR
   89            KM  4-LANE ARTERIAL
   90            RS       2    FLOW      -1
   91            RC   0.018   0.018   0.018    2630  0.0023
   92            RX       0       0      31      31      99      99     130     130
```

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 93          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

 94          KK   SB102
 95          KM  RUNOFF FROM SUB-BASIN 102
 96          BA   0.310
 97          LG    0.18    0.27    4.80    0.36      43
 98          UC   0.675   0.463
 99          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
100          UA     100
             *

101          KK    D102
102          KM  DIVERT RETENTION VOLUME FOR HAWTHORNE ELEMENTARY SCHOOL.
103          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR THE PLAY FIELD
104          KM  TOTAL VOLUME = 6 ACRE-FT
105          DT  RET102       6
106          DI       0   10000
107          DQ       0   10000
             *

108          KK   IFD36
109          KM  INFLOW IFD36 - REFERENCE STATION D36OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
110          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
111          BA       0
112          ZR     =QI A=TEMPE  B=D36OUT  C=FLOW  F=CC24HR
             *
1                                        HEC-1 INPUT                                          PAGE  4

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

113          KK   RSD36
114          KM  CONSOLIDATED CANAL & UNIVERSITY DR: ROUTE STREET FLOW IFD36 TO
115          KM  CP102 VIA UNIVERSITY DR
116          KM  4-LANE ARTERIAL
117          RS       6    FLOW      -1
118          RC   0.018   0.018   0.018    2630  0.0023
119          RX       0       0      31      31      99      99     130     130
120          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

121          KK   CP102
122          KM  UNIVERSITY DR & STAPLEY DR: COMBINE RS101,SB102,D36OUT
123          HC       3
             *

124          KK    S102
125          KM  UNIVERSITY DR & STAPLEY DR: STREET FLOW S102 VS. PIPE FLOW P102
126          KM  36" RCP PIPE - CAPACITY = 26CFS
127          DT    P102
128          DI       0     100   10000
129          DQ       0      18      18
             *

130          KK   S102W
131          KM  UNIVERSITY DR & STAPLEY DR: STREET FLOW WEST S102W VS. STREET FLOW SOUTH S102S
132          KM  SURVEYED INTERSECTION
133          DT   S102S
134          DI       0      48     120     255     612     889    1192    1531    1907    2315
135          DQ       0      48     116     241     508     670     850    1045    1257    1483
             *

136          KK  RS102W
137          KM  UNIVERSITY DR & STAPLEY DR: ROUTE STREET FLOW CP102 TO CP104 VIA UNIVERSITY
138          KM  4-LANE ARTERIAL
139          RS      15    FLOW      -1
140          RC   0.018   0.018   0.018    2650  0.0004
141          RX       0       0      31      31      99      99     130     130
142          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

143          KK   SB103
144          KM  RUNOFF FROM SUB-BASIN 103
145          BA   0.230
146          LG    0.24    0.25    4.80    0.35      34
147          UC   0.621   0.417
148          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
149          UA     100
             *
1                                        HEC-1 INPUT                                          PAGE  5

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
150          KK   IFD21
151          KM  INFLOW IFD21 - REFERENCE STATION D21OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
152          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
153          BA       0
154          ZR     =QI A=TEMPE  B=D21OUT  C=FLOW  F=CC24HR
             *

155          KK   RSD21
156          KM  CONSOLIDATED CANAL & HORNE: ROUTE STREET FLOW IFD21 TO CP103 VIA HORNE
157          KM  60-FT RIGHT-OF-WAY COLLECTOR
158          RS       4    FLOW      -1
159          RC   0.018   0.018   0.018    2640  0.0023
160          RX       0       0      13      13      47      47      60      60
161          RY       4    0.33    0.33       0       0    0.33    0.33       4
             *

162          KK   CP103
163          KM  8TH ST & HORNE: COMBINE RSD21,SB103
164          HC       2
             *

165          KK    S103
166          KM  8TH ST & HORNE: STREET FLOW S103 VS. PIPE FLOW P103
167          KM  36" RCP PIPE - CAPACITY = 25CFS
168          DT    P103
169          DI       0      25   10000
170          DQ       0      25      25
             *

171          KK   RS103
172          KM  8TH ST & HORNE: ROUTE STREET FLOW S103 TO CP104 VIA HORNE
173          KM  60-FT RIGHT-OF-WAY COLLECTOR
174          RS       3    FLOW      -1
175          RC   0.018   0.018   0.018    2640  0.0023
176          RX       0       0      13      13      47      47      60      60
177          RY       4    0.33    0.33       0       0    0.33    0.33       4
             *

178          KK   SB104
179          KM  RUNOFF FROM SUB-BASIN 104
180          BA   0.250
181          LG    0.24    0.25    4.80    0.36      37
182          UC   0.821    0.66
183          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
184          UA     100
             *

185          KK    P103
186          KM  RETURN DIVERTED PIPE FLOW FROM CP103
187          DR    P103
             *
1                                    HEC-1 INPUT                                          PAGE  6

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

188          KK   RP103
189          KM  ROUTE PIPE FLOW CP103 TO CP104 VIA HORNE
190          KM  33" RCP PIPE - CAPACITY = 25CFS
191          RK    2640  0.0023   0.013            CIRC    2.75                        6
             *

192          KK   CP104
193          KM  UNIVERSITY DR & HORNE: COMBINE RS103,RP103,SB104,RS102W
194          HC       4
             *

195          KK    S104
196          KM  UNIVERSITY DR & HORNE: STREET FLOW S104 VS. PIPE FLOW P104
197          KM  48" RCP PIPE - CAPACITY = 56CFS
198          DT    P104
199          DI       0      56   10000
200          DQ       0      56      56
             *

201          KK   S104W
202          KM  UNIVERSITY DR & HORNE: STREET FLOW WEST S104W VS. STREET FLOW SOUTH S104S
203          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
204          KM  UNIVERSITY DR IS 4-LANE ARTERIAL, HORNE IS A 60-FT RIGHT-OF-WAY COLLECTOR
205          DT   S104S
206          DI       0      24     230     673    1283    2033    2911
207          DQ       0      16     152     444     846    1341    1920
             *

208          KK  RS104W
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```
209          KM  UNIVERSITY DR & HORNE: ROUTE STREET FLOW S104W TO CP106 VIA UNIVERSITY DR
210          KM  4-LANE ARTERIAL
211          RS       9    FLOW      -1
212          RC   0.018   0.018   0.018    2650  0.0015
213          RX       0       0      31      31      99      99     130     130
214          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

215          KK   SB105
216          KM  RUNOFF FROM SUB-BASIN 105
217          BA   0.230
218          LG    0.22    0.26    4.80    0.35      41
219          UC   0.671   0.505
220          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
221          UA     100
             *

222          KK    D105
223          KM  DIVERT RETENTION VOLUME FOR KINO JUNIOR HIGH SCHOOL
224          KM  APPROXIMATELY 1 FT OF RETENTION DEPTH FOR BASEBALL AND TRACK FIELDS
225          KM  TOTAL VOLUME = 18 ACRE-FT
226          DT  RET105      18
227          DI       0    5000
228          DQ       0    5000
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

229          KK   RS105
230          KM  8TH ST & MESA DRIVE: ROUTE STREET FLOW D105 TO CP106 VIA MESA DR
231          KM  4-LANE ARTERIAL
232          RS       6    FLOW      -1
233          RC   0.018   0.018   0.018    2750  0.0022
234          RX       0       0      31      31      99      99     130     130
235          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

236          KK   SB106
237          KM  RUNOFF FROM SUB-BASIN 106
238          BA   0.230
239          LG    0.23    0.25    4.80    0.36      42
240          UC   0.838   0.663
241          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
242          UA     100
             *

243          KK   CP106
244          KM  UNIVERSITY DR & MESA DR: COMBINE RS105,SB106,RS104W
245          HC       3
             *

246          KK    S106
247          KM  UNIVERSITY DR & MESA DR: STREET FLOW S106 VS. PIPE FLOW P106
248          KM  24" RCP PIPE - CAPACITY = 6CFS
249          DT    P106
250          DI       0       6   10000
251          DQ       0       6       6
             *

252          KK   S106W
253          KM  UNIVERSITY DR & MESA DR: STREET FLOW WEST S106W VS. STREET FLOW SOUTH S106S
254          KM  SURVEYED INTERSECTION
255          DT   S106S
256          DI       0      94     402     870    1470    2186
257          DQ       0      66     229     456     738    1067
             *

258          KK  RS106W
259          KM  UNIVERSITY DR & MESA DR: ROUTE STREET FLOW S106W TO CP108 VIA UNIVERSITY DR
260          KM  4-LANE ARTERIAL
261          RS       5    FLOW      -1
262          RC   0.018   0.018   0.018    2650  0.0015
263          RX       0       0      31      31      99      99     130     130
264          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

265          KK   SB107
266          KM  RUNOFF FROM SUB-BASIN 107
267          BA   0.240
268          LG    0.21    0.27    4.80    0.34      43
269          UC   0.675   0.487
270          UA       0       5    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1                                          HEC-1 INPUT                                          PAGE  8
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 271          UA     100
              *

 272          KK   SB109
 273          KM  RUNOFF FROM SUB-BASIN 109
 274          BA   0.080
 275          LG    0.24    0.26    4.80    0.35      39
 276          UC   0.471   0.413
 277          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 278          UA     100
              *

 279          KK   CP107
 280          KM  8TH ST & CENTER ST: COMBINE SB107,SB109
 281          HC       2
              *

 282          KK   RS107
 283          KM  8TH ST & CENTER ST: ROUTE STREET FLOW CP107 TO CP108 VIA CENTER ST
 284          KM  80-FT RIGHT-OF-WAY COLLECTOR
 285          RS       3    FLOW      -1
 286          RC   0.018   0.018   0.018    2650  0.0015
 287          RX       0       0      17      17      63      63      80      80
 288          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

 289          KK   SB108
 290          KM  RUNOFF FROM SUB-BASIN 108
 291          BA   0.250
 292          LG    0.18    0.25    4.80    0.42      49
 293          UC    1.35   1.046
 294          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 295          UA     100
              *

 296          KK    D108
 297          KM  DIVERT RETENTION VOLUME FOR FITCH PARK
 298          KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR OPEN SPACE AND PLAY FIELDS
 299          KM  TOTAL VOLUME = 25 ACRE-FT
 300          DT  RET108      25
 301          DI       0    5000
 302          DQ       0    5000
              *

 303          KK   SB110
 304          KM  RUNOFF FROM SUB-BASIN 110
 305          BA   0.080
 306          LG    0.23    0.25    4.80    0.36      41
 307          UC   0.633   0.641
 308          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 309          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE  9

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

 310          KK   CP108
 311          KM  UNIVERSITY DR & CENTER ST: COMBINE SB110,RS107,D108,RS106W
 312          HC       4
              *

 313          KK   RS108
 314          KM  UNIVERSITY DR & CENTER ST: ROUTE STREET FLOW CP108 TO CP116 VIA CENTER ST
 315          KM  4-LANE ARTERIAL
 316          RS       4    FLOW      -1
 317          RC   0.018   0.018   0.018    2650  0.0019
 318          RX       0       0      31      31      99      99     130     130
 319          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

 320          KK   SB111
 321          KM  RUNOFF FROM SUB-BASIN 111
 322          BA   0.030
 323          LG    0.25    0.15    8.00    0.10      45
 324          UC   0.346   0.286
 325          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 326          UA     100
              *

 327          KK    IF34
 328          KM  INFLOW IF34 - REFERENCE STATION 34-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
```

```
KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
BA       0
ZR     =QI A=TEMPE  B=34-OUT  C=FLOW  F=CC24HR
*

KK    RS34
KM  CONSOLIDATED CANAL & GILBERT RD: ROUTE STREET FLOW IF34 TO
KM  CP111 VIA GILBERT RD
KM  6-LANE ARTERIAL
RS       2    FLOW      -1
RC   0.018   0.018   0.018    1420  0.0015
RX       0       0      21      21     109     109     130     130
RY       4   0.014   0.014       0       0    0.14    0.14       4
*

KK   IF44B
KM  INFLOW IF44B - REFERENCE STATION 44BOUT FROM "CONSOLIDATED CANAL FLOOPLAIN
KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
BA       0
ZR     =QI A=TEMPE  B=44BOUT  C=FLOW  F=CC24HR
*

KK   RS44B
KM  CONSOLIDATED CANAL & MAIN ST: ROUTE STREET FLOW IF44B TO
KM  CP111 VIA MAIN ST
KM  6-LANE ARTERIAL
RS       2    FLOW      -1
RC   0.018   0.018   0.018    1195  0.0015
RX       0       0      21      21     109     109     130     130
```

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

RY       4   0.014   0.014       0       0    0.14    0.14       4
*

KK  IPMAIN
KM  INLFOW FROM 48" PIPE ALONG MAIN ST ENTERING THE STUDY AREA AT MAIN ST AND THE
KM  CONSOLIDATED CANAL. PIPE FLOW IS MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE
KM  PIPE CAPACITY.
KM  48" RCP PIPE - CAPACITY = 64CFS
BA       0
IN      15
QI      64      64      64      64      64      64      64      64      64      64
QI      64      64      64      64      64      64      64      64      64      64
QI      64      64      64      64      64
*

KK   CP111
KM  MAIN ST & GILBERT RD: COMBINE 34-OUT,RS44B,IPMAIN,SB111
HC       4
*

KK    S111
KM  MAIN ST & GILBERT RD: STREET FLOW S111 VS. PIPE FLOW P111
KM  48" RCP PIPE - CAPACITY = 64CFS
DT    P111
DI       0     100   10000
DQ       0      64      64
*

KK   S111W
KM  MAIN ST & GILBERT RD: STREET FLOW WEST S111W VS. STREET FLOW SOUTH S111S
KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
KM  MAIN ST IS A 4-LANE ARTERIAL, GILBERT RD IS A 6-LANE ARTERIAL
DT   S111S
DI       0      37     341    1017    1952    3107    4458
DQ       0      16     138     422     818    1308    1882
*

KK  RS111W
KM  MAIN ST & GILBERT RD: ROUTE STREET FLOW S111W TO CP112 VIA MAIN ST
KM  4-LANE ARTERIAL
RS       4    FLOW      -1
RC   0.018   0.018   0.018    2650  0.0019
RX       0       0      31      31      99      99     130     130
RY       4    0.18    0.18       0       0    0.18    0.18       4
*

KK   SB112
KM  RUNOFF FROM SUB-BASIN 112
BA   0.220
LG    0.21    0.25    4.90    0.35      44
UC    0.65   0.441
UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
392          UA     100
             *
1                                    HEC-1 INPUT                                                    PAGE 11

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

393          KK    P111
394          KM  RETURN DIVERTED PIPE FLOW FROM CP111
395          KM  FOR ROUTING WEST TO CP112
396          DR    P111
             *

397          KK   RP111
398          KM  ROUTE PIPE FLOW P111 TO CP113 VIA STAPLEY DR
399          KM  36" RCP PIPE - CAPACITY = 26CFS
400          RK    2614    .002   0.013            CIRC       6                        6
             *

401          KK   CP112
402          KM  MAIN ST & HARRIS DR: COMBINE SB112,RP111,RS111W
403          HC       3
             *

404          KK    S112
405          KM  MAIN ST & HARRIS DR: STREET FLOW S112 VS. PIPE FLOW P112
406          KM  60" RCP PIPE - CAPACITY = 83CFS
407          DT    P112
408          DI       0      83   10000
409          DQ       0      83      83
             *

410          KK   RS112
411          KM  MAIN ST & HARRIS DR: ROUTE STREET FLOW S112 TO CP113 VIA MAIN ST
412          KM  4-LANE ARTERIAL
413          RS       4    FLOW      -1
414          RC   0.018   0.018   0.018    2610  0.0019
415          RX       0       0      31      31      99      99     130     130
416          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

417          KK   S102S
418          KM  RETURN DIVERTED STREET FLOW FROM CP102
419          KM  FOR ROUTING SOUTH TO CP113
420          DR   S102S
             *

421          KK  RS102S
422          KM  ROUTE STREET FLOW S102S TO CP113 ALONG STAPLEY DR
423          KM  4-LANE ARTERIAL
424          RS       3    FLOW      -1
425          RC   0.018   0.018   0.018    2610  0.0019
426          RX       0       0      31      31      99      99     130     130
427          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *
1                                    HEC-1 INPUT                                                    PAGE 12

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

428          KK    P102
429          KM  RETURN DIVERTED PIPE FLOW FROM CP102
430          KM  FOR ROUTING SOUTH TO CP113
431          DR    P102
             *

432          KK   RP102
433          KM  ROUTE PIPE FLOW P102 TO CP113 VIA STAPLEY DR
434          KM  36" RCP PIPE - CAPACITY = 26CFS
435          RK    2630  0.0015   0.013            CIRC       3
             *

436          KK   SB113
437          KM  RUNOFF FROM SUB-BASIN 113
438          BA   0.250
439          LG    0.21    0.25    4.80    0.37      43
440          UC   0.758     0.6
441          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
442          UA     100
             *

443          KK    P112
444          KM  RETURN DIVERTED PIPE FLOW FROM CP112
445          KM  FOR ROUTING WEST TO CP113
446          DR    P112
```

```
                *

447             KK  RP112
448             KM  ROUTE PIPE FLOW P112 TO CP113 VIA MAIN ST
449             KM  60" RCP PIPE - CAPACITY = 83CFS
450             RK    2600   0.001   0.013            CIRC       5                       6
                *

451             KK   CP113
452             KM  MAIN ST. & STAPLEY DR: COMBINE RS102S,RP102,SB113,RP112,RS112
453             HC       5
                *

454             KK    S113
455             KM  MAIN ST. & STAPLEY DR: STREET FLOW S113 VS. PIPE FLOW P113
456             KM  60" RCP PIPE - CAPACITY = 83CFS
457             DT    P113
458             DI       0      83   10000
459             DQ       0      83      83
                *

460             KK   S113W
461             KM  MAIN ST & STAPLEY DR: STREET FLOW WEST S113W VS. STREET FLOW SOUTH S113S
462             KM  SURVEYED INTERSECTION
463             DT   S113S
464             DI       0       5      26      67     165     353     548     864    1158    1532
465             DI    1948    4579
466             DQ       0       2      10      27      57     143     201     355     491     645
467             DQ     816    1894
                *
1                                                HEC-1 INPUT                                          PAGE 13

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


468             KK  RS113W
469             KM  MAIN ST & STAPLEY DR: ROUTE STREET FLOW S113W TO CP114 VIA MAIN ST
470             KM  4-LANE ARTERIAL
471             RS       6    FLOW      -1
472             RC   0.018   0.018   0.018    2630  0.0015
473             RX       0       0      31      31      99      99     130     130
474             RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

475             KK   S104S
476             KM  RETURN DIVERTED STREET FLOW FROM CP104
477             KM  FOR ROUTING SOUTH TO CP114
478             DR   S104S
                *

479             KK  RS104S
480             KM  ROUTE STREET FLOW S104S TO CP114 VIA HORNE
481             KM  60-FT RIGHT-OF-WAY COLLECTOR
482             RS       4    FLOW      -1
483             RC   0.018   0.018   0.018    2680  0.0001
484             RX       0       0      13      13      47      47      60      60
485             RY       4    0.33    0.33       0       0    0.33    0.33       4
                *

486             KK   SB114
487             KM  RUNOFF FROM SUB-BASIN 114
488             BA   0.250
489             LG    0.22    0.25    4.80    0.37      41
490             UC   0.963    0.75
491             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
492             UA     100
                *

493             KK    P113
494             KM  RETURN DIVERTED PIPE FLOW FROM CP113
495             KM  FOR ROUTING WEST TO CP114
496             DR    P113
                *

497             KK   RP113
498             KM  ROUTE PIPE FLOW CP113 TO CP114 VIA MAIN ST
499             KM  60" RCP PIPE - CAPACITY = 83CFS
500             RK    2680   0.001   0.013            CIRC       5                       6
                *

501             KK    P104
502             KM  RETURN DIVERTED PIPE FLOW FROM CP104
503             KM  FOR ROUTING SOUTH TO CP114
504             DR    P104
                *
```

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1                                    HEC-1 INPUT                                                    PAGE 14

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

   505          KK   RP104
   506          KM  ROUTE PIPE FLOW P104 TO CP114 VIA HORNE
   507          KM  48" RCP PIPE - CAPACITY = 56CFS
   508          RK    2630  0.0015   0.013            CIRC       4                        6
                *

   509          KK   CP114
   510          KM  MAIN ST & HORNE: COMBINE RS104S,RP104,SB114,RP113,RS113W
   511          HC       5
                *

   512          KK    S114
   513          KM  MAIN ST & HORNE: STREET FLOW S114 VS. PIPE FLOW P114
   514          KM  78" RCP PIPE -  CAPACITY = 166CFS
   515          DT    P114
   516          DI       0     166   10000
   517          DQ       0     166     166
                *

   518          KK   S114W
   519          KM  MAIN ST & HORNE: STREET FLOW WEST S114W VS. STREET FLOW SOUTH S114S
   520          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
   521          KM  MAIN ST IS A 4-LANE ARTERIAL, HORNE IS A 60-FT RIGHT-OF-WAY COLLECTOR
   522          DT   S114S
   523          DI       0      23     145     383     700    1086    1532
   524          DQ       0      19     106     268     482     740    1036
                *

   525          KK  RS114W
   526          KM  MAIN ST & HORNE: ROUTE STREET FLOW S114W TO CP115 VIA MAIN ST
   527          KM  4-LANE ARTERIAL
   528          RS       9    FLOW      -1
   529          RC   0.018   0.018   0.018    2640  0.0011
   530          RX       0       0      31      31      99      99     130     130
   531          RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

   532          KK   S106S
   533          KM  RETURN DIVERTED STREET FLOW FROM CP106
   534          KM  FOR ROUTING SOUTH TO CP115
   535          DR   S106S
                *

   536          KK  RS106S
   537          KM  ROUTE STREET FLOW S106S TO CP115 VIA MESA DR
   538          KM  4-LANE ARTERIAL
   539          RS       4    FLOW      -1
   540          RC   0.018   0.018   0.018    2640  0.0011
   541          RX       0       0      31      31      99      99     130     130
   542          RY       4    0.18    0.18       0       0    0.18    0.18       4
                *
1                                    HEC-1 INPUT                                                    PAGE 15

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

   543          KK    P106
   544          KM  RETURN DIVERTED PIPE FLOW FROM CP106
   545          KM  FOR ROUTING SOUTH TO CP115
   546          DR    P106
                *

   547          KK   RP106
   548          KM  ROUTE PIPE FLOW CP106 TO CP115 VIA MESA DR
   549          KM  24" RCP PIPE - CAPACITY = 6CFS
   550          RK    2640  0.0007   0.013            CIRC       2                        6
                *

   551          KK   SB115
   552          KM  RUNOFF FROM SUB-BASIN 115
   553          BA   0.260
   554          LG    0.20    0.25    4.80    0.38      42
   555          UC   1.033   0.753
   556          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
   557          UA     100
                *

   558          KK    D115
   559          KM  DIVERT RETENTION VOLUME FOR PIONEER PARK
   560          KM  APPROXIMATELY 1 FT OF DEPTH FOR RETENTION
```

```
561          KM  TOTAL VOLUME = 11 ACRE-FT
562          DT  RET115      11
563          DI       0   10000
564          DQ       0   10000
             *

565          KK    P114
566          KM  RETURN DIVERTED PIPE FLOW FROM CP114
567          KM  FOR ROUTING WEST TO CP115
568          DR    P114
             *

569          KK   RP114
570          KM  ROUTE PIPE FLOW CP114 TO CP115 VIA MAIN ST
571          KM  78" RCP PIPE - CAPACITY = 166CFS
572          RK    2690   0.001   0.013            CIRC     6.5                        6
             *

573          KK   CP115
574          KM  MAIN ST & MESA DR: COMBINE RS106S,RP106,D115,RP114,RS114W
575          HC       5
             *

576          KK    S115
577          KM  MAIN ST & MESA DR: STREET FLOW S115 VS. PIPE FLOW P115
578          KM  78" RCP PIPE - CAPACITY = 166CFS
579          DT    P115
580          DI       0     166   10000
581          DQ       0     166     166
             *
1                                          HEC-1 INPUT                                                    PAGE 16

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

582          KK   S115W
583          KM  MAIN ST & MESA DR: STREET FLOW WEST S115W VS. STREET FLOW SOUTH S115S
584          KM  SURVEYED INTERSECTION
585          DT   S115S
586          DI       0      18     172     494    1076    1663    2524    3555
587          DQ       0      18     172     490    1029    1471    2109    2836
             *

588          KK  RS115W
589          KM  MAIN ST & MESA DR: ROUTE STREET FLOW S115W TO CP116 VIA MAIN ST
590          KM  4-LANE ARTERIAL
591          RS      18    FLOW      -1
592          RC   0.018   0.018   0.018    2590  0.0004
593          RX       0       0      31      31      99      99     130     130
594          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *
             *

595          KK   SB116
596          KM  RUNOFF FROM SUB-BASIN 116
597          BA   0.240
598          LG    0.15    0.23    4.80    0.39      48
599          UC   1.204   0.985
600          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
601          UA     100
             *

602          KK   SB117
603          KM  RUNOFF FROM SUB-BASIN 117
604          BA   0.080
605          LG    0.18    0.25    4.80    0.38      59
606          UC     0.6   0.596
607          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
608          UA     100
             *

609          KK    P115
610          KM  RETURN DIVERTED PIPE FLOW FROM CP115
611          KM  FOR ROUTING WEST TO CP116
612          DR    P115
             *

613          KK   RP115
614          KM  ROUTE PIPE FLOW CP115 TO CP116 VIA MAIN ST
615          KM  78" RCP PIPE - CAPACITY = 166CFS
616          RK    2590   0.001   0.013            CIRC     6.5                        6
             *

617          KK   CP116
618          KM  MAIN ST & CENTER ST: COMBINE SB117,RS108,SB116,RP115,RS115W
```

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619          HC       5
             *
1                                    HEC-1 INPUT                                                    PAGE 17

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

620          KK    S116
621          KM  MAIN ST & CENTER ST: STREET FLOW S116 VS. PIPE FLOW P116
622          KM  84" RCP PIPE - CAPACITY = 203CFS. 84" PIPE CONTINUES WEST IN MAIN ST, NORTH
623          KM  IN ALMA SCHOOL RD AND OUTLETS TO THE TEMPE WASTEWAY. THE PIPE REACHES CAPACITY
624          KM  WITHIN THE 100 WATERSHED AND, THEREFORE, WAS NOT MODELED IN THE 200 WATERSHED.
625          DT    P116
626          DI       0     203   10000
627          DQ       0     203     203
             *

628          KK   RS116
629          KM  ROUTE STREET FLOW S116 TO CP124 VIA CENTER ST
630          KM  4-LANE ARTERIAL
631          RS       3    FLOW      -1
632          RC   0.018   0.018   0.018    2620  0.0011
633          RX       0       0      31      31      99      99     130     130
634          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

635          KK   SB118
636          KM  RUNOFF FROM SUB-BASIN 118
637          BA   0.220
638          LG    0.24    0.15    8.00    0.10      35
639          UC   0.667   0.458
640          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
641          UA     100
             *

642          KK   IP119
643          KM  BROADWAY RD & GILBERT RD: PIPE FLOW ROUTED EAST FROM CP119
644          KM  TO CP118 CREATES A LOOP. THEREFORE, PIPE FLOW IS MODELED AS AN INFLOW
645          KM  HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
646          KM  36" RCP PIPE - CAPACITY = 21CFS
647          BA       0
648          IN      15
649          QI      21      21      21      21      21      21      21      21      21      21
650          QI      21      21      21      21      21      21      21      21      21      21
651          QI      21      21      21      21      21
             *

652          KK   S111S
653          KM  RETURN DIVERTED STREET FLOW FROM CP111
654          DR   S111S
             *

655          KK  RS111S
656          KM  ROUTE STREET FLOW S111S TO CP118 VIA GILBERT RD
657          KM  6-LANE ARTERIAL
658          RS       5    FLOW      -1
659          RC   0.018   0.018   0.018    2630  0.0015
660          RX       0       0      21      21     109     109     130     130
661          RY       4   0.014   0.014       0       0    0.14    0.14       4
             *
1                                    HEC-1 INPUT                                                    PAGE 18

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

662          KK   IFD48
663          KM  INFLOW IFD48 - REFERENCE STATION D48OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
664          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
665          BA       0
666          ZR     =QI A=TEMPE  B=D48OUT  C=FLOW  F=CC24HR
             *

667          KK   RSD48
668          KM  CONSOLIDATED CANAL & BROADWAY RD: ROUTE STREET FLOW IFD48 TO
669          KM  CP118 VIA BROADWAY RD
670          KM  4-LANE ARTERIAL
671          RS       7    FLOW      -1
672          RC   0.018   0.018   0.018    3631  0.0026
673          RX       0       0      31      31      99      99     130     130
674          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

675          KK   CP118
676          KM  BROADWAY RD & GILBERT RD: COMBINE IP119,RS11S,SB118,RSD48
677          HC       4
```

```
                *

678             KK    S118
679             KM  BROADWAY RD & GILBERT RD: STREET FLOW S118 VS. PIPE FLOW P118
680             KM  48" RCP PIPE - CAPCITY = 64CFS
681             DT    P118
682             DI       0       64   10000
683             DQ       0       64      64
                *

684             KK   S118W
685             KM  BROADWAY RD & GILBERT RD: STREET FLOW WEST S118W VS. STREET FLOW SOUTH S118S
686             KM  SURVEYED INTERSECTION
687             DT   S118S
688             DI       0        1      10      35      93     200     364     638     940    1285
689             DI    1684     4277
690             DQ       0        0       2      12      35      68     130     262     396     549
691             DQ     734     1956
                *

692             KK  RS118W
693             KM  BROADWAY RD & GILBERT RD: ROUTE STREET FLOW S118W TO CP119 VIA BROADWAY RD
694             KM  4-LANE ARTERIAL
695             RS       2    FLOW      -1
696             RC   0.018   0.018   0.018    2650  0.0026
697             RX       0       0      31      31      99      99     130     130
698             RY       4    0.18    0.18       0       0    0.18    0.18       4
                *
1                                          HEC-1 INPUT                                                PAGE 19

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

699             KK   SB119
700             KM  RUNOFF FROM SUB-BASIN 119
701             BA   0.180
702             LG     0.2    0.25    4.80    0.37      49
703             UC   0.592   0.459
704             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
705             UA     100
                *

706             KK   CP119
707             KM  BROADWAY RD & WILLIAMS: COMBINE SB119,RS118W
708             HC       2
                *

709             KK    S119
710             KM  BROADWAY RD & WILLIAMS: STREET FLOW S119 VS. PIPE FLOW P119
711             KM  36" RCP PIPE - CAPCITY = 21CFS
712             DT    P119
713             DI       0       21   10000
714             DQ       0       21      21
                *

715             KK   RS119
716             KM  BROADWAY RD & WILLIAMS: ROUTE STREET FLOW S119 TO CP120 VIA BROADWAY RD
717             KM  4-LANE ARTERIAL
718             RS       2    FLOW      -1
719             RC   0.018   0.018   0.018    1240  0.0008
720             RX       0       0      31      31      99      99     130     130
721             RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

722             KK   SB120
723             KM  RUNOFF FROM SUB-BASIN 120
724             BA   0.150
725             LG    0.24    0.25    4.80    0.35      32
726             UC   0.471   0.323
727             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
728             UA     100
                *

729             KK   CP120
730             KM  BROADWAY RD & BARKLEY: COMBINE SB120,RS119
731             HC       2
                *

732             KK   RS120
733             KM  BROADWAY RD & BARKLEY: ROUTE STREET FLOW S120 TO CP121 VIA BROADWAY RD
734             KM  4-LANE ARTERIAL
735             RS       2    FLOW      -1
736             RC   0.018   0.018   0.018    1700  0.0024
737             RX       0       0      31      31      99      99     130     130
738             RY       4    0.18    0.18       0       0    0.18    0.18       4
```

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                 *
1                                    HEC-1 INPUT                                                    PAGE 20

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

 739             KK   IP122
 740             KM  BROADWAY RD & STAPLEY DR: PIPE FLOW ROUTED EAST FROM CP122
 741             KM  TO CP121 CREATES A LOOP. THEREFORE, PIPE FLOW IS MODELED AS AN INFLOW
 742             KM  HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
 743             KM  27" RCP PIPE - CAPACITY = 14CFS
 744             BA       0
 745             IN      15
 746             QI      14      14      14      14      14      14      14      14      14      14
 747             QI      14      14      14      14      14      14      14      14      14      14
 748             QI      14      14      14      14      14
                 *

 749             KK   S113S
 750             KM  RETURN DIVERTED STREET FLOW FROM CP113
 751             KM  FOR ROUTING SOUTH TO CP121
 752             DR   S113S
                 *

 753             KK  RS113S
 754             KM  ROUTE STREET FLOW S113S TO CP121 VIA STAPLEY DR
 755             KM  4-LANE ARTERIAL
 756             RS       4    FLOW      -1
 757             RC   0.018   0.018   0.018    2630  0.0015
 758             RX       0       0      31      31      99      99     130     130
 759             RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

 760             KK   SB121
 761             KM  RUNOFF FROM SUB-BASIN 121
 762             BA   0.160
 763             LG    0.20    0.25    4.80    0.38      52
 764             UC   0.658   0.491
 765             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 766             UA     100
                 *

 767             KK   CP121
 768             KM  BROADWAY RD & STAPLEY DR: COMBINE IP122,RS113S,SB121,RS120
 769             HC       4
                 *

 770             KK    S121
 771             KM  BROADWAY RD & STAPLEY DR: STREET FLOW S121 VS. PIPE FLOW P121
 772             KM  42" RCP PIPE - CAPACITY = 45CFS
 773             DT    P121
 774             DI       0      45   10000
 775             DQ       0      45      45
                 *
1                                    HEC-1 INPUT                                                    PAGE 21

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

 776             KK   S121W
 777             KM  BROADWAY RD & STAPLEY DR: STREET FLOW WEST S121W VS. STREET FLOW SOUTH S121S
 778             KM  SURVEYED INTERSECTION
 779             DT   S121S
 780             DI       0      36     152     360     637     974    1570    2039    2842
 781             DQ       0      31     114     238     396     584     800    1043    1603
                 *

 782             KK  RS121W
 783             KM  BROADWAY RD & STAPLEY DR: ROUTE STREET FLOW S121W TO CP122 VIA BROADWAY RD
 784             KM  4-LANE ARTERIAL
 785             RS       5    FLOW      -1
 786             RC   0.018   0.018   0.018    2670  0.0004
 787             RX       0       0      31      31      99      99     130     130
 788             RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

 789             KK   S114S
 790             KM  RETURN DIVERTED STREET FLOW FROM CP114
 791             KM  FOR ROUTING SOUTH TO CP122
 792             DR   S114S
                 *

 793             KK  RS114S
 794             KM  ROUTE STREET FLOW S114S TO CP122 VIA HORNE
 795             KM  60-FT RIGHT-OF-WAY COLLECTOR
```

```
 796          RS       2    FLOW      -1
 797          RC   0.018   0.018   0.018    2660  0.0019
 798          RX       0       0      13      13      47      47      60      60
 799          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

 800          KK   SB122
 801          KM  RUNOFF FROM SUB-BASIN 122
 802          BA   0.260
 803          LG    0.21    0.25    4.80    0.37      37
 804          UC   0.908   0.629
 805          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 806          UA     100
              *

 807          KK    D122
 808          KM  DIVERT RETENTION VOLUME FOR MESA JUNIOR HIGH SCHOOL AND ELLSWORTH PARK
 809          KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR OPEN SPACE AND PLAY FIELDS
 810          KM  TOTAL VOLUME = 27 ACRE-FT
 811          DT  RET122      27
 812          DI       0   10000
 813          DQ       0   10000
              *
1                                        HEC-1 INPUT                                          PAGE 22

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

 814          KK   CP122
 815          KM  BROADWAY RD & HORNE: COMBINE RS114S,D122,RS121W
 816          HC       3
              *

 817          KK    S122
 818          KM  BROADWAY RD & HORNE: STREET FLOW S122 VS. PIPE FLOW P122
 819          KM  27" RCP PIPE - CAPACITY = 14CFS
 820          DT    P122
 821          DI       0      14   10000
 822          DQ       0      14      14
              *

 823          KK   S122W
 824          KM  BROADWAY RD & HORNE: STREET FLOW WEST S122W VS. STREET FLOW SOUTH S122W
 825          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
 826          KM  BROADWAY RD IS A 4-LANE ARTERIAL, HORNE IS A 60-FT RIGHT-OF-WAY COLLECTOR
 827          DT   S122S
 828          DI       0      25     172     467     865    1350    1912
 829          DQ       0      17      94     238     428     658     921
              *

 830          KK  RS122W
 831          KM  BROADWAY RD & HORNE: ROUTE STREET FLOW CP122 TO CP123 VIA BROADWAY RD
 832          KM  4-LANE ARTERIAL
 833          RS       5    FLOW      -1
 834          RC   0.018   0.018   0.018    2690  0.0004
 835          RX       0       0      31      31      99      99     130     130
 836          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

 837          KK   S115S
 838          KM  RETURN DIVERTED STREET FLOW FROM CP115
 839          KM  FOR ROUTING SOUTH TO CP123
 840          DR   S115S
              *

 841          KK  RS115S
 842          KM  ROUTE STREET FLOW S115S TO CP123 VIA MESA DR
 843          KM  4-LANE ARTERIAL
 844          RS       3    FLOW      -1
 845          RC   0.018   0.018   0.018    2650  0.0015
 846          RX       0       0      31      31      99      99     130     130
 847          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

 848          KK   SB123
 849          KM  RUNOFF FROM SUB-BASIN 123
 850          BA   0.260
 851          LG    0.21    0.22    4.80    0.38      44
 852          UC   1.033    0.76
 853          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 854          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE 23

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
855          KK   CP123
856          KM  BROADWAY RD & MESA DR: COMBINE RS115S,SB123,RS122W
857          HC       3
             *

858          KK    S123
859          KM  BROADWAY RD & MESA DR: STREET FLOW S123 VS. PIPE FLOW P123
860          KM  36" RCP PIPE - CAPACITY = 33CFS
861          DT    P123
862          DI       0      33   10000
863          DQ       0      33      33
             *

864          KK   S123W
865          KM  BROADWAY RD & MESA DR: STREET FLOW WEST S123W VS. STREET FLOW SOUTH S123S
866          KM  SURVEYED INTERSECTION
867          DT   S123S
868          DI       0      69     333     779    1365    2076    2901    3824
869          DQ       0      56     223     489     832    1245    1721    2280
             *

870          KK  RS123W
871          KM  BROADWAY RD & MESA DR: ROUTE STREET FLOW S123W TO CP124 VIA BROADWAY RD
872          KM  4-LANE ARTERIAL
873          RS       3    FLOW      -1
874          RC   0.018   0.018   0.018    2600  0.0008
875          RX       0       0      31      31      99      99     130     130
876          RY       4    0.18    0.18       0       0    0.18    0.18       4
             *

877          KK   SB124
878          KM  RUNOFF FROM SUB-BASIN 124
879          BA   0.250
880          LG    0.15    0.25    4.80    0.40      63
881          UC   1.392   1.158
882          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
883          UA     100
             *

884          KK   SB125
885          KM  RUNOFF FROM SUB-BASIN 125
886          BA   0.130
887          LG    0.10    0.26    4.80    0.41      74
888          UC   0.854   0.789
889          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
890          UA     100
             *

891          KK   CP124
892          KM  BROADWAY RD & CENTER ST: COMBINE SB125,RS116,SB124,RS123W
893          HC       4
             *
1                                        HEC-1 INPUT                                        PAGE 24

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

894          KK   RS124
895          KM  ROUTE STREET FLOW CP124 TO CP132 VIA CENTER STREET
896          KM  80-FT RIGHT-OF-WAY COLLECTOR
897          RS       2    FLOW      -1
898          RC   0.018   0.018   0.018    2650  0.0026
899          RX       0       0      17      17      63      63      80      80
900          RY       4    0.27    0.27       0       0    0.27    0.27       4
             *

901          KK   SB126
902          KM  RUNOFF FROM SUB-BASIN 126
903          BA   0.180
904          LG    0.25    0.15    9.70    0.06      31
905          UC   0.492   0.325
906          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
907          UA     100
             *

908          KK    S126
909          KM  8TH AVE & 24TH ST: STREET FLOW S126 VS. PIPE P126
910          KM  48" RCP PIPE - CAPACITY = 71CFS
911          DT    P126
912          DI       0      71   10000
913          DQ       0      71      71
             *
```

```
914          KK   S126W
915          KM  8TH AVE & 24TH ST: STREET FLOW WEST S126W VS. STREET FLOW SOUTH S126S
916          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
917          KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, 24TH ST IS AN 80-FT RIGHT-OF-WAY
918          KM  COLLECTOR
919          DT   S126S
920          DI       0      28     184     479     871    1345    1892    2506
921          DQ       0      16     115     305     558     865    1220    1619
             *

922          KK  RS126W
923          KM  8TH AVE & 24TH ST: ROUTE STREET FLOW S126W TO CP127 VIA 8TH AVE
924          KM  60-FT RIGHT-OF-WAY COLLECTOR
925          RS       7    FLOW      -1
926          RC   0.018   0.018   0.018    2560  0.0008
927          RX       0       0      13      13      47      47      60      60
928          RY       4    0.33    0.33       0       0    0.33    0.33       4
             *

929          KK   IP128
930          KM  8TH AVE & GILBERT RD: PIPE FLOW ROUTED EAST FROM CP128
931          KM  TO CP127 CREATES A LOOP. THEREFORE, PIPE FLOW IS MODELED AS AN INFLOW
932          KM  HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
933          KM  24" RCP PIPE - CAPACITY = 7CFS
934          BA       0
935          IN      15
936          QI       7       7       7       7       7       7       7       7       7       7
937          QI       7       7       7       7       7       7       7       7       7       7
```



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

938          QI       7       7       7       7       7
             *

939          KK   S118S
940          KM  RETURN DIVERTED STREET FLOW FROM CP118
941          KM  FOR ROUTING SOUTH TO CP127
942          DR   S118S
             *

943          KK  RS118S
944          KM  ROUTE STREET FLOW S118S TO CP127 VIA GILBERT RD
945          KM  6-LANE ARTERIAL
946          RS       4    FLOW      -1
947          RC   0.018   0.018   0.018    2620  0.0023
948          RX       0       0      21      21     109     109     130     130
949          RY       4   0.014   0.014       0       0    0.14    0.14       4
             *

950          KK   SB127
951          KM  RUNOFF FROM SUB-BASIN 127
952          BA   0.250
953          LG    0.23    0.15    9.70    0.06      36
954          UC   0.546   0.352
955          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
956          UA     100
             *

957          KK    P118
958          KM  RETURN DIVERTED PIPE FLOW FROM CP118
959          KM  FOR ROUTING SOUTH TO CP127
960          DR    P118
             *

961          KK   RP118
962          KM  ROUTE PIPE FLOW P118 TO CP127 VIA GILBERT RD
963          KM  48" RCP PIPE - CAPACITY = 64CFS
964          RK    2620   0.002   0.013            CIRC       4                       6
             *

965          KK   CP127
966          KM  8TH AVE & GILBERT RD: COMBINE IP128,RS118S,RP118,SB127,RS126W
967          HC       5
             *

968          KK    S127
969          KM  8TH AVE & GILBERT RD: STREET FLOW S127 VS. PIPE FLOW P127
970          KM  48" RCP PIPE - CAPACITY = 64CFS
971          DT    P127
972          DI       0      64   10000
973          DQ       0      64      64
             *
```

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

 974          KK   S127W
 975          KM  8TH AVE & GILBERT RD: STREET FLOW WEST S127W VS. STREET FLOW SOUTH S127S
 976          KM  SURVEYED INTERSECTION
 977          DT   S127S
 978          DI       0      19      56     131     258     451     680     947    1249    1583
 979          DI    1948    4191
 980          DQ       0      18      51     111     203     309     446     603     779     971
 981          DQ    1181    2454
              *

 982          KK  RS127W
 983          KM  8TH AVE & GILBERT RD: ROUTE STREET FLOW S127W TO CP128 VIA 8TH AVE
 984          KM  60-FT RIGHT-OF-WAY COLLECTOR
 985          RS       3    FLOW      -1
 986          RC   0.018   0.018   0.018    1970  0.0015
 987          RX       0       0      13      13      47      47      60      60
 988          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

 989          KK   SB128
 990          KM  RUNOFF FROM SUB-BASIN 128
 991          BA   0.190
 992          LG    0.23    0.26    5.30    0.28      36
 993          UC   0.567   0.412
 994          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 995          UA     100
              *

 996          KK   CP128
 997          KM  8TH AVE & WILLIAMS: COMBINE SB128,RS127W
 998          HC       2
              *

 999          KK    S128
1000          KM  8TH AVE & WILLIAMS: STREET FLOW S128 VS. PIPE FLOW P128
1001          KM  PIPE DIRECTS FLOW EAST. THE PIPE FLOW IS DIVERTED OUT OF S128
1002          KM  AND ADDED AS AN INFLOW HYDROGRAPH (IP128) TO CP127
1003          KM  24" RCP PIPE - CAPACITY = 7CFS
1004          DT    P128
1005          DI       0       7   10000
1006          DQ       0       7       7
              *

1007          KK   RS128
1008          KM  8TH AVE & WILLIAMS: ROUTE STREET FLOW CP128 TO CP129 VIA 8TH AVE
1009          KM  60-FT RIGHT-OF-WAY COLLECTOR
1010          RS       3    FLOW      -1
1011          RC   0.018   0.018   0.018    3220  0.0019
1012          RX       0       0      13      13      47      47      60      60
1013          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *
1                                        HEC-1 INPUT                                          PAGE 27

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

1014          KK   S121S
1015          KM  RETURN DIVERTED STREET FLOW FROM CP121
1016          KM  FOR ROUTING SOUTH TO CP129
1017          DR   S121S
              *

1018          KK  RS121S
1019          KM  ROUTE STREET FLOW S121S TO CP129 VIA STAPLEY DR
1020          KM  4-LANE ARTERIAL
1021          RS       3    FLOW      -1
1022          RC   0.018   0.018   0.018    2650  0.0011
1023          RX       0       0      31      31      99      99     130     130
1024          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1025          KK   SB129
1026          KM  RUNOFF FROM SUB-BASIN 129
1027          BA   0.310
1028          LG    0.24    0.25    4.80    0.37      32
1029          UC   0.992   0.732
1030          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1031          UA     100
              *

1032          KK    D129
1033          KM  DIVERT RETENTION VOLUME FOR REED SKATE PARK
```

```
1034          KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR SKATE AREA
1035          KM  TOTAL VOLUME = 10 ACRE-FT
1036          DT  RET129      10
1037          DI       0   10000
1038          DQ       0   10000
              *

1039          KK    P121
1040          KM  RETURN DIVERTED PIPE FLOW FROM CP121
1041          KM  FOR ROUTING SOUTH TO CP129
1042          DR    P121
              *

1043          KK   RP121
1044          KM  ROUTE PIPE FLOW P121 TO CP129 VIA STAPLEY DR
1045          KM  42" RCP PIPE - CAPACITY = 45CFS
1046          RK    2650   0.002   0.013            CIRC     3.5                        6
              *

1047          KK   CP129
1048          KM  8TH AVE & STAPLEY DR: COMBINE RS121S,RP121,D129,RS128
1049          HC       4
              *
1                                          HEC-1 INPUT                                          PAGE 28

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

1050          KK    S129
1051          KM  8TH AVE & STAPLEY DR: STREET FLOW S129 VS. PIPE FLOW P129
1052          KM  42" RCP PIPE - CAPACITY = 45CFS
1053          DT    P129
1054          DI       0      45   10000
1055          DQ       0      45      45
              *

1056          KK   S129W
1057          KM  8TH AVE & STAPLEY DR: STREET FLOW WEST S129W VS. STREET FLOW SOUTH S129S
1058          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1059          KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, STAPLEY IS A 4-LANE ARTERIAL
1060          DT   S129S
1061          DI       0      30     252     713    1340    2109    3007
1062          DQ       0      19     188     550    1047    1660    2378
              *

1063          KK  RS129W
1064          KM  8TH AVEE & STAPLEY DR: ROUTE STREET FLOW SP129W TO CP130 VIA 8TH AVE
1065          KM  60-FT RIGHT-OF-WAY COLLECTOR
1066          RS       4    FLOW      -1
1067          RC   0.018   0.018   0.018    2670  0.0007
1068          RX       0       0      13      13      47      47      60      60
1069          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

1070          KK   S122S
1071          KM  RETURN DIVERTED STREET FLOW FROM CP122
1072          KM  FOR ROUTING SOUTH TO CP130
1073          DR   S122S
              *

1074          KK  RS122S
1075          KM  ROUTE STREET FLOW S122S TO CP130 VIA HORNE
1076          KM  60-FT RIGHT-OF-WAY COLLECTOR
1077          RS       2    FLOW      -1
1078          RC   0.018   0.018   0.018    2620  0.0015
1079          RX       0       0      13      13      47      47      60      60
1080          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

1081          KK   SB130
1082          KM  RUNOFF FROM SUB-BASIN 130
1083          BA   0.250
1084          LG    0.24    0.25    4.80    0.35      32
1085          UC   1.004    0.74
1086          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1087          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 29

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

1088          KK   CP130
1089          KM  8TH AVE & HORNE: COMBINE RS122S,SB130,RS129W
1090          HC       3
```

```
                *

1091            KK   S130W
1092            KM  8TH AVE & HORNE: STREET FLOW WEST S130W VS. STREET FLOW SOUTH S130S
1093            KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1094            KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, HORNE IS A 60-FT RIGHT-OF-WAY
1095            KM  COLLECTOR
1096            DT   S130S
1097            DI       0      30     166     418     752    1154    1616
1098            DQ       0      21     117     295     531     814    1140
                *

1099            KK  RS130W
1100            KM  8TH AVE & HORNE: ROUTE STREET FLOW S130W TO CP131 VIA 8TH AVE
1101            KM  60-FT RIGHT-OF-WAY COLLECTOR
1102            RS       5    FLOW      -1
1103            RC   0.018   0.018   0.018    2680  0.0004
1104            RX       0       0      13      13      47      47      60      60
1105            RY       4    0.33    0.33       0       0    0.33    0.33       4
                *

1106            KK   S123S
1107            KM  RETURN DIVERTED STREET FLOW FROM CP123
1108            KM  FOR ROUTING SOUTH TO CP131
1109            DR   S123S
                *

1110            KK  RS123S
1111            KM  ROUTE STREET FLOW S123S TO CP131 VIA MESA DR
1112            KM  4-LANE ARTERIAL
1113            RS       2    FLOW      -1
1114            RC   0.018   0.018   0.018    2600  0.0023
1115            RX       0       0      31      31      99      99     130     130
1116            RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

1117            KK   SB131
1118            KM  RUNOFF FROM SUB-BASIN 131
1119            BA   0.250
1120            LG    0.23    0.25    4.80    0.36      39
1121            UC   0.921   0.714
1122            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1123            UA     100
                *

1124            KK    P123
1125            KM  RETURN DIVERTED PIPE FLOW FROM CP123
1126            KM  FOR ROUTING SOUTH TO CP131
1127            DR    P123
                *
1                                    HEC-1 INPUT                                          PAGE 30

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

1128            KK   RP123
1129            KM  ROUTE PIPE FLOW P123 TO CP131 VIA MESA DR
1130            KM  36" RCP PIPE - CAPACITY = 33CFS
1131            RK    2600  0.0025   0.013            CIRC       3                       6
                *

1132            KK   CP131
1133            KM  8TH AVE & MESA DR: COMBINE RS123S,RP123,SB131,RS130W
1134            HC       4
                *

1135            KK    S131
1136            KM  8TH AVE & MESA DR: STREET FLOW S131 VS. PIPE FLOW P131
1137            KM  48" RCP PIPE - CAPACITY = 72CFS
1138            DT    P131
1139            DI       0      72   10000
1140            DQ       0      72      72
                *

1141            KK   S131W
1142            KM  8TH AVE & MESA DR: STREET FLOW WEST S131W VS. STREET FLOW SOUTH S131S
1143            KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1144            KM  8TH AVE IS A 60-FT RIGHT-OF-WAY COLLECTOR, MESA DR IS A 4-LANE ARTERIAL
1145            DT   S131S
1146            DI       0      31     263     751    1417    2236    3191
1147            DQ       0      22     214     628    1196    1896    2715
                *

1148            KK  RS131W
1149            KM  8TH AVE & MESA DR: ROUTE STREET FLOW S131W TO CP132 VIA 8TH AVE
```

```
1150          KM  60-FT RIGHT-OF-WAY COLLECTOR
1151          RS       6    FLOW      -1
1152          RC   0.018   0.018   0.018    2600  0.0004
1153          RX       0       0      13      13      47      47      60      60
1154          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

1155          KK   SB132
1156          KM  RUNOFF FROM SUB-BASIN 132
1157          BA   0.250
1158          LG    0.21    0.25    4.80    0.37      42
1159          UC   0.821   0.591
1160          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1161          UA     100
              *

1162          KK   CP132
1163          KM  8TH AVE & CENTER ST: COMBINE RS124,SB132,RS131W
1164          HC       3
              *
1                                        HEC-1 INPUT                                          PAGE 31

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

1165          KK   RS132
1166          KM  ROUTE DIVERTED FLOW FROM CP132 TO CP140 VIA CENTER ST
1167          KM  80-FT RIGHT-OF-WAY COLLECTOR
1168          RS       1    FLOW      -1
1169          RC   0.018   0.018   0.018    2630  0.0027
1170          RX       0       0      17      17      63      63      80      80
1171          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1172          KK   SB133
1173          KM  RUNOFF FROM SUB-BASIN 133
1174          BA   0.280
1175          LG    0.27    0.15    9.70    0.05      16
1176          UC   0.629   0.416
1177          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1178          UA     100
              *

1179          KK   S126S
1180          KM  RETURN DIVERTED STREET FLOW FROM CP126
1181          KM  FOR ROUTING SOUTH TO CP133
1182          DR   S126S
              *

1183          KK  RS126S
1184          KM  ROUTE STREET FLOW SP126S TO CP133 VIA 24TH ST
1185          KM  80-FT RIGHT-OF-WAY COLLECTOR
1186          RS       5    FLOW      -1
1187          RC   0.018   0.018   0.018    2640  0.0015
1188          RX       0       0      17      17      63      63      80      80
1189          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1190          KK    IF51
1191          KM  INFLOW IF51 - REFERENCE STATION 51-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
1192          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
1193          BA       0
1194          ZR     =QI A=TEMPE  B=51-OUT  C=FLOW  F=CC24HR
              *

1195          KK    RS51
1196          KM  CONSOLIDATED CANAL & SOUTHERN AVE: ROUTE STREET FLOW IF51 TO
1197          KM  CP133 VIA SOUTHERN AVE
1198          KM  4-LANE ARTERIAL
1199          RS       7    FLOW      -1
1200          RC   0.018   0.018   0.018    3420  0.0019
1201          RX       0       0      31      31      99      99     130     130
1202          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                        HEC-1 INPUT                                          PAGE 32

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

1203          KK    IF67
1204          KM  INFLOW IF67 - REFERENCE STATION 67-OUT FROM "CONSOLIDATED CANAL FLOOPLAIN
1205          KM  DELINEATION STUDY" BY TETRA TECH INC. FLOWS WERE PROVIDED BY THE FCDMC.
1206          BA       0
1207          ZR     =QI A=TEMPE  B=67-OUT  C=FLOW  F=CC24HR
              *
```

```
1208          KK    RS67
1209          KM  CONSOLIDATED CANAL & SOUTHERN AVE: ROUTE STREET FLOW IF67 TO
1210          KM  CP133 VIA SOUTHERN AVE
1211          KM  4-LANE ARTERIAL
1212          RS       7    FLOW      -1
1213          RC   0.018   0.018   0.018    3420  0.0019
1214          RX       0       0      31      31      99      99     130     130
1215          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1216          KK   CP133
1217          KM  SOUTHERN AVE & 24TH ST: COMBINE RS126S,SB133,IF51,IF67
1218          HC       4
              *

1219          KK    S133
1220          KM  SOUTHERN AVE & 24TH ST: STREET FLOW S133 VS. PIPE FLOW P133
1221          KM  30" RCP PIPE - CAPACITY = 18CFS
1222          DT    P133
1223          DI       0      18   10000
1224          DQ       0      18      18
              *

1225          KK   S133W
1226          KM  SOUTHERN AVE & 24TH ST: STREET FLOW WEST S133W VS STREET FLOW SOUTH S133S
1227          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1228          KM  SOUTHERN AVE IS A 4-LANE ARTERIAL, 24TH ST IS AN 80-FT RIGHT-OF-WAY COLLECTOR
1229          DT   S133S
1230          DI       0      22     200     579    1096    1732    2476
1231          DQ       0       4      29      79     144     223     315
              *

1232          KK  RS133W
1233          KM  SOUTHERN AVE & 24TH ST: ROUTE STREET FLOW S133W TO CP134 VIA SOUTHERN AVE
1234          KM  4-LANE ARTERIAL
1235          RS       3    FLOW      -1
1236          RC   0.018   0.018   0.018    2590  0.0019
1237          RX       0       0      31      31      99      99     130     130
1238          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1239          KK    P133
1240          KM  RETURN DIVERTED PIPE FLOW FROM CP133
1241          KM  FOR ROUTING WEST TO CP134A
1242          DR    P133
              *
1                                    HEC-1 INPUT                                    PAGE 33

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

1243          KK   RP133
1244          KM  ROUTE PIPE FLOW P133 TO CP134A VIA SOUTHERN AVE
1245          KM  30" RCP PIPE - CAPACITY = 18CFS
1246          RK    2590   0.002   0.012            CIRC     2.5                        6
              *

1247          KK  CP134A
1248          KM  COMBINE RP133,RS133W
1249          HC       2
              *

1250          KK   S127S
1251          KM  RETURN DIVERTED STREET FLOW FROM CP127
1252          KM  FOR ROUTING SOUTH TO CP134
1253          DR   S127S
              *

1254          KK  RS127S
1255          KM  ROUTE STREET FLOW S127S TO CP134 VIA GILBERT RD
1256          KM  6-LANE ARTERIAL
1257          RS       3    FLOW      -1
1258          RC   0.018   0.018   0.018    2620  0.0027
1259          RX       0       0      21      21     109     109     130     130
1260          RY       4   0.014   0.014       0       0    0.14    0.14       4
              *

1261          KK   SB134
1262          KM  RUNOFF FROM SUB-BASIN 134
1263          BA   0.250
1264          LG    0.22    0.15    9.70    0.06      37
1265          UC   0.596   0.411
1266          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1267          UA     100
```

```
                 *
1268             KK    D134
1269             KM  DIVERT RETENTION VOLUME FOR SILVERGATE PARK
1270             KM  APPROXIMATELY 1 FT RETENTION DEPTH FOR OPEN SPACE AND PLAY FIELDS
1271             KM  TOTAL VOLUME = 24 ACRE-FT
1272             DT  RET134      24
1273             DI       0    5000
1274             DQ       0    5000
                 *

1275             KK    P126
1276             KM  RETURN DIVERTED PIPE FLOW FROM CP126
1277             KM  FOR ROUTING SOUTHWEST TO CP134
1278             DR    P126
                 *
1                                          HEC-1 INPUT                                                    PAGE 34

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

1279             KK   RP126
1280             KM  ROUTE PIPE P126 TO CP134 VIA 24TH ST
1281             KM  48" RCP PIPE - CAPACITY = 71CFS
1282             RK    1320  0.0024   0.013            CIRC       4                        6
                 *

1283             KK    P127
1284             KM  RETURN DIVERTED PIPE FLOW FROM CP127
1285             KM  FOR ROUTING SOUTH TO CP134
1286             DR    P127
                 *

1287             KK   RP127
1288             KM  ROUTE PIPE FLOW P127 TO CP134 VIA GILBERT RD
1289             KM  48" RCP PIPE - CAPACITY = 64CFS
1290             RK    2620   0.002   0.013            CIRC       4                        6
                 *

1291             KK   CP134
1292             KM  SOUTHERN AVE & GILBERT RD: COMBINE RS127S,RP127,RP126,D134,CP134A
1293             HC       5
                 *

1294             KK    S134
1295             KM  SOUTHERN AVE & GILBERT RD: STREET FLOW S134 VS. PIPE FLOW P134
1296             KM  84" RCP PIPE - CAPACITY = 286CFS
1297             DT    P134
1298             DI       0     286   10000
1299             DQ       0     286     286
                 *

1300             KK   S134W
1301             KM  SOUTHERN AVE & GILBERT RD: STREET FLOW WEST S134W VS. STREET FLOW SOUTH S134S
1302             KM  SURVEYED INTERSECTION
1303             DT   S134S
1304             DI       0      34     548    1619    3054    4904    7080
1305             DQ       0      34     274     785    1480    2398    3484
                 *

1306             KK  RS134W
1307             KM  SOUTHERN AVE & GILBERT RD: ROUTE STREET FLOW S134W TO CP135 VIA SOUTHERN AVE
1308             KM  4-LANE ARTERIAL
1309             RS       2    FLOW      -1
1310             RC   0.018   0.018   0.018    1280  0.0016
1311             RX       0       0      31      31      99      99     130     130
1312             RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

1313             KK   SB135
1314             KM  RUNOFF FROM SUB-BASIN 135
1315             BA   0.120
1316             LG    0.21    0.15    9.70    0.06      43
1317             UC   0.583    0.53
1318             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1                                          HEC-1 INPUT                                                    PAGE 35

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

1319             UA     100
                 *

1320             KK   CP135
1321             KM  SOUTHERN AVE & TOLTEC: COMBINE SB135,RS134W
1322             HC       2
```

```
                *
1323            KK    S135
1324            KM  SOUTHERN AVE & TOLTEC: STREET FLOW S135 VS. PIPE FLOW P135
1325            KM  36" RCP PIPE - CAPACITY = 26CFS
1326            DT    P135
1327            DI       0      26   10000
1328            DQ       0      26      26
                *

1329            KK   RS135
1330            KM  SOUTHERN AVE & TOLTEC: ROUTE STREET FLOW S135 TO CP136 VIA SOUTHERN AVE
1331            KM  4-LANE ARTERIAL
1332            RS       2    FLOW      -1
1333            RC   0.018   0.018   0.018    1280  0.0016
1334            RX       0       0      31      31      99      99     130     130
1335            RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

1336            KK   SB136
1337            KM  RUNOFF FROM SUB-BASIN 136
1338            BA   0.120
1339            LG    0.20    0.15    8.80    0.07      33
1340            UC   0.504    0.41
1341            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1342            UA     100
                *

1343            KK    D136
1344            KM  DIVERT RETENTION VOLUME FOR MESA HIGH SCHOOL
1345            KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR PLAY FIELDS
1346            KM  TOTAL VOLUME = 26 ACRE-FT
1347            DT  RET136      26
1348            DI       0    5000
1349            DQ       0    5000
                *

1350            KK    P135
1351            KM  RETURN DIVERTED PIPE FLOW FROM CP135
1352            KM  FOR ROUTING WEST TO CP136
1353            DR    P135
                *

1354            KK   RP135
1355            KM  ROUTE PIPE FLOW P135 TO CP136 VIA SOUTHERN AVE
1356            KM  36" RCP PIPE - CAPACITY = 26CFS
1357            RK    1310  0.0015   0.013            CIRC       3                       6
                *
1                                          HEC-1 INPUT                                          PAGE 36

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

1358            KK   CP136
1359            KM  SOUTHERN AVE & HARRIS DR: COMBINE D136,RP135,RS135
1360            HC       3
                *

1361            KK    S136
1362            KM  SOUTHERN AVE & HARRIS DR: STREET FLOW S136 VS. PIPE FLOW P136
1363            KM  42" RCP PIPE - CAPACITY = 39CFS
1364            DT    P136
1365            DI       0      39   10000
1366            DQ       0      39      39
                *

1367            KK   S136W
1368            KM  SOUTHERN AVE & HARRIS DR: STREET FLOW WEST S136W VS. STREET FLOW SOUTH S136S
1369            KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1370            KM  SOUTHERN AVE IS A 4-LANE ARTERIAL, HARRIS DR IS AN 80-FT RIGHT-OF-WAY COLLECTO
1371            DT   S136S
1372            DI       0      24     212     602    1134    1788    2550
1373            DQ       0       8      60     158     288     447     630
                *

1374            KK  RS136W
1375            KM  SOUTHERN AVE & HARRIS DR: ROUTE STREET FLOW S136W TO CP137 VIA SOUTHERN AVE
1376            KM  4-LANE ARTERIAL
1377            RS       4    FLOW      -1
1378            RC   0.018   0.018   0.018    2600  0.0015
1379            RX       0       0      31      31      99      99     130     130
1380            RY       4    0.18    0.18       0       0    0.18    0.18       4
                *

1381            KK   S129S
```

```
1382          KM  RETURN DIVERTED STREET FLOW FROM CP129
1383          KM  FOR ROUTING SOUTH TO CP137
1384          DR   S129S
              *

1385          KK  RS129S
1386          KM  ROUTE STREET FLOW S129S TO CP137 VIA STAPLEY DR
1387          KM  4-LANE ARTERIAL
1388          RS       2    FLOW      -1
1389          RC   0.018   0.018   0.018    2620  0.0023
1390          RX       0       0      31      31      99      99     130     130
1391          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1392          KK   SB137
1393          KM  RUNOFF FROM SUB-BASIN 137
1394          BA   0.250
1395          LG    0.23    0.16    7.00    0.14      37
1396          UC   0.683   0.517
1397          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1398          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE 37

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


1399          KK    P129
1400          KM  RETURN DIVERTED PIPE FLOW FROM CP129
1401          KM  FOR ROUTING SOUTH TO CP137
1402          DR    P129
              *

1403          KK   RP129
1404          KM  ROUTE PIPE FLOW P129 TO CP137 VIA STAPLEY DR
1405          KM  42" RCP PIPE - CAPACITY = 45 CFS
1406          RK    2620   0.002   0.013            CIRC     3.5                        6
              *

1407          KK    P136
1408          KM  RETURN DIVERTED PIPE FLOW FROM CP136
1409          KM  FOR ROUTING WEST TO CP137
1410          DR    P136
              *

1411          KK   RP136
1412          KM  ROUTE PIPE FLOW P136 TO CP137 VIA SOUTHERN AVE
1413          KM  42" RCP PIPE - CAPACITY = 39 CFS
1414          RK    2600  0.0015   0.012            CIRC     3.5                        6
              *

1415          KK   CP137
1416          KM  SOUTHERN AVE & STAPLEY DR: COMBINE RS129S,RP129,SB137,RP136,RS136W
1417          HC       5
              *

1418          KK    S137
1419          KM  SOUTHERN AVE & STAPLEY DR: STREET FLOW S137 VS. PIPE FLOW P137
1420          KM  72" RCP PIPE - CAPACITY = 134CFS
1421          DT    P137
1422          DI       0     134   10000
1423          DQ       0     134     134
              *

1424          KK   S137W
1425          KM  SOUTHERN AVE & STAPLEY DR: STREET FLOW WEST S137W VS. STREET FLOW SOUTH S137S
1426          KM  SURVEYED INTERSECTION
1427          DT   S137S
1428          DI       0       9      89     397     925    1626    2480    3475    4599
1429          DQ       0       9      87     350     745    1252    1858    2557    3341
              *

1430          KK  RS137W
1431          KM  SOUTHERN AVE & STAPLEY DR: ROUTE STREET FLOW S137W TO CP138 VIA SOUTHERN AVE
1432          KM  4-LANE ARTERIAL
1433          RS       5    FLOW      -1
1434          RC   0.018   0.018   0.018    2660  0.0008
1435          RX       0       0      31      31      99      99     130     130
1436          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                        HEC-1 INPUT                                          PAGE 38

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
1437          KK   S130S
1438          KM  RETURN DIVERTED STREET FLOW FROM CP130
1439          KM  FOR ROUTING SOUTH TO CP138
1440          DR   S130S
              *

1441          KK  RS130S
1442          KM  ROUTE STREET FLOW S130S TO CP138 VIA HORNE
1443          KM  60-FT RIGHT-OF-WAY COLLECTOR
1444          RS       2    FLOW      -1
1445          RC   0.018   0.018   0.018    2630  0.0023
1446          RX       0       0      13      13      47      47      60      60
1447          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

1448          KK   SB138
1449          KM  RUNOFF FROM SUB-BASIN 138
1450          BA   0.250
1451          LG    0.22    0.23    6.40    0.18      31
1452          UC   0.692   0.507
1453          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1454          UA     100
              *

1455          KK    P137
1456          KM  RETURN DIVERTED PIPE FLOW FROM CP137
1457          KM  FOR ROUTING WEST TO CP138
1458          DR    P137
              *

1459          KK   RP137
1460          KM  ROUTE PIPE FLOW P137 TO CP138 VIA SOUTHERN AVE
1461          KM  72" RCP PIPE - CAPACITY = 134CFS
1462          RK    2600   0.001   0.013            CIRC       6                       6
              *

1463          KK   CP138
1464          KM  SOUTHERN AVE & HORNE: COMBINE RS130S,SB138,RP137,RS137W
1465          HC       4
              *

1466          KK    S138
1467          KM  SOUTHERN AVE & HORNE: STREET FLOW S138 VS. PIPE FLOW P138
1468          KM  72" RCP PIPE - CAPACITY = 134CFS
1469          DT    P138
1470          DI       0     134    1000
1471          DQ       0     134     134
              *
1                                    HEC-1 INPUT                                    PAGE 39

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

1472          KK   S138W
1473          KM  SOUTHERN AVE & HORNE: STREET FLOW WEST S138W VS. STREET FLOW SOUTH S138S
1474          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTION USED
1475          KM  SOUTHERN AVE IS A 4-LANE ARTERIAL, HORNE IS AN 80-FT RIGHT-OF-WAY COLLECTOR
1476          DT   S138S
1477          DI       0      25     215     603    1132    1780    2535
1478          DQ       0      12      85     223     408     632     891
              *

1479          KK  RS138W
1480          KM  SOUTHERN AVE & HORNE: ROUTE STREET FLOW S138W TO CP139 VIA SOUTHERN AVE
1481          KM  4-LANE ARTERIAL
1482          RS       5    FLOW      -1
1483          RC   0.018   0.018   0.018    2660  0.0011
1484          RX       0       0      31      31      99      99     130     130
1485          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1486          KK   S131S
1487          KM  RETURN DIVERTED STREET FLOW FROM CP131
1488          KM  FOR ROUTING SOUTH TO CP139
1489          DR   S131S
              *

1490          KK  RS131S
1491          KM  ROUTE STREET FLOW S131S TO CP139 VIA MESA DR
1492          KM  4-LANE ARTERIAL
1493          RS       2    FLOW      -1
1494          RC   0.018   0.018   0.018    2650   0.003
1495          RX       0       0      31      31      99      99     130     130
1496          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
```

```
1497          KK   SB139
1498          KM  RUNOFF FROM SUB-BASIN 139
1499          BA   0.250
1500          LG    0.21    0.25    5.00    0.34      44
1501          UC   0.738   0.563
1502          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1503          UA     100
              *

1504          KK    D139
1505          KM  DIVERT RETENTION VOLUME FOR HOLMES ELEMENTARY SCHOOL
1506          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR THE PLAY FIELD
1507          KM  TOTAL VOLUME = 4 ACRE-FT
1508          DT  RET139       4
1509          DI       0    5000
1510          DQ       0    5000
              *
1                                        HEC-1 INPUT                                          PAGE 40

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

1511          KK    P131
1512          KM  RETURN DIVERTED PIPE FLOW FROM 131
1513          KM  FOR ROUTING SOUTH TO CP139
1514          DR    P131
              *

1515          KK   RP131
1516          KM  ROUTE PIPE FLOW P131 TO CP139 VIA MESA DR
1517          KM  48" RCP PIPE - CAPACITY = 72CFS
1518          RK    2650  0.0025   0.013            CIRC       4                        6
              *

1519          KK   CP139
1520          KM  SOUTHERN AVE & MESA DR: COMBINE RS131S,RP131,D139,RS138W
1521          HC       4
              *

1522          KK    S139
1523          KM  SOUTHERN AVE & MESA DR: STREET FLOW S139 VS. PIPE FLOW P139
1524          KM  54" RCP PIPE - CAPACITY = 62CFS
1525          DT    P139
1526          DI       0      62   10000
1527          DQ       0      62      62
              *

1528          KK   S139W
1529          KM  SOUTHERN AVE & MESA DR: STREET FLOW WEST S139W VS. STREET FLOW SOUTH S139S
1530          KM  SURVEYED INTERSECTION
1531          DT   S139S
1532          DI       0      21     172     560    1138    1873    2750    3758
1533          DQ       0      21     168     496     952    1518    2185    2946
              *

1534          KK  RS139W
1535          KM  SOUTHERN AVE & MESA DR: ROUTE STREET FLOW S139W TO CP140 VIA SOUTHERN AVE
1536          KM  4-LANE ARTERIAL
1537          RS       5    FLOW      -1
1538          RC   0.018   0.016   0.018    2660  0.0008
1539          RX       0       0      31      31      99      99     130     130
1540          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1541          KK   SB140
1542          KM  RUNOFF FROM SUB-BASIN 140
1543          BA   0.250
1544          LG    0.17    0.25    4.80    0.38      59
1545          UC     0.8   0.631
1546          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1547          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE 41

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

1548          KK    D140
1549          KM  DIVERT RETENTION VOLUME FOR LINCOLN ELEMENTARY SCHOOL
1550          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR THE PLAY FIELD
1551          KM  TOTAL VOLUME = 4 ACRE-FT
1552          DT  RET140       4
1553          DI       0    5000
1554          DQ       0    5000
```

```
                *

1555            KK    P139
1556            KM  RETURN DIVERTED PIPE FLOW FROM CP139
1557            KM  FOR ROUTING WEST TO CP140
1558            DR    P139
                *

1559            KK   RP139
1560            KM  ROUTE PIPE FLOW P139 TO CP140 VIA SOUTHERN AVE
1561            KM  54" RCP PIPE - CAPACITY = 62CFS
1562            RK    2660   0.001   0.013            CIRC     4.5                      6
                *

1563            KK   CP140
1564            KM  SOUTHERN AVE & CENTER ST: COMBINE RS132,D140,RP139,RS139W
1565            HC       4
                *

1566            KK    S140
1567            KM  SOUTHERN AVE & CENTER ST: STREET FLOW S140 VS. PIPE FLOW P140
1568            KM  60" RCP PIPE - CAPACITY = 83CFS
1569            DT    P140
1570            DI       0      83   10000
1571            DQ       0      83      83
                *

1572            KK   RS140
1573            KM  ROUTE STREET FLOW S140S TO CP147 VIA CENTER ST
1574            KM  80-FT RIGHT-OF-WAY COLLECTOR
1575            RS       1    FLOW      -1
1576            RC   0.018   0.018   0.018    2400  0.0017
1577            RX       0       0      17      17      63      63      80      80
1578            RY       4    0.27    0.27       0       0    0.27    0.27       4
                *

1579            KK   SB141
1580            KM  RUNOFF FROM SUB-BASIN 141
1581            BA   0.320
1582            LG    0.21    0.17    8.80    0.07      34
1583            UC   0.667    0.48
1584            UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1585            UA     100
                *
1                                          HEC-1 INPUT                                          PAGE 42

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

1586            KK    IF71
1587            KM  INFLOW FROM ADOT CHANNEL EAST OF THE STUDY AREA
1588            KM  INFLOW IS EQUAL TO THE CAPACITY OF THE 2-24" PIPES CONVEYING CHANNEL FLOW
1589            KM  2-24" RCP PIPE - CAPACITY = 30CFS
1590            BA     0.1
1591            IN      60
1592            QI       0      30      30      30      30      30      30      30      30      30
1593            QI      30      30      30      30      30      30      30      30      30    30.1
1594            QI      30      30      30      30      30      30      30      30      30      30
1595            QI      30      30      30      30      30      30      30      30      30      30
1596            QI       0
                *

1597            KK    RC71
1598            KM  US 60 & CONSOLIDATED CANAL: ROUTE CHANNEL FLOW IF71 TO CP142 VIA US 60
1599            KM  ADOT CHANNEL CROSS SECTION
1600            RS       3    FLOW      -1
1601            RC   0.014   0.014   0.014    3740  0.0012
1602            RX       0       1       2      16      48      62      63      64
1603            RY      10       7       7       0       0       7       7      10
                *

1604            KK   S133S
1605            KM  RETURN DIVERTED STREET FLOW FROM CP133
1606            KM  FOR ROUTING SOUTH TO CP141
1607            DR   S133S
                *

1608            KK  RS133S
1609            KM  ROUTE STREET FLOW S133S TO CP141 VIA 24TH ST
1610            KM  80-FT RIGHT-OF-WAY COLLECTOR
1611            RS      16    FLOW      -1
1612            RC   0.018   0.018   0.018    2550  0.0001
1613            RX       0       0      17      17      63      63      80      80
1614            RY       4    0.27    0.27       0       0    0.27    0.27       4
                *
```

```
1615          KK   CP141
1616          KM  ADOT US 60 CHANNEL: COMBINE RS133S,SB141,RI71
1617          HC       3
              *

1618          KK   RC141
1619          KM  ADOT US 60 CHANNEL: ROUTE CHANNEL FLOW CP141 TO CP142 VIA US 60
1620          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BULIT INFORMATION
1621          RS       1    FLOW      -1
1622          RC   0.014   0.014   0.014    2640  0.0026
1623          RX       0       1       2      12      14      24      25      26
1624          RY      10       5       5       0       0       5       5      10
              *
1                                          HEC-1 INPUT                                                    PAGE 43

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

1625          KK   S134S
1626          KM  RETURN DIVERTED STREET FLOW FROM CP134
1627          KM  FOR ROUTING SOUTH TO CP142
1628          DR   S134S
              *

1629          KK  RS134S
1630          KM  ROUTE STREET FLOW S134S TO CP142 VIA GILBERT RD
1631          KM  6-LANE ARTERIAL
1632          RS       3    FLOW      -1
1633          RC   0.018   0.018   0.018    2400  0.0021
1634          RX       0       0      21      21     109     109     130     130
1635          RY       4   0.014   0.014       0       0    0.14    0.14       4
              *

1636          KK   SB142
1637          KM  RUNOFF FROM SUB-BASIN 142
1638          BA   0.230
1639          LG    0.21    0.15    8.80    0.08      39
1640          UC   1.500   1.405
1641          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1642          UA     100
              *

1643          KK   CP142
1644          KM  ADOT US 60 CHANNEL: COMBINE RS134S,SB142,RC141
1645          HC       3
              *

1646          KK   BS142
1647          KM  KINGSBOROUGH PARK RETENTION BASIN
1648          KM  STAGE STORAGE ASSUMES LOW FLOW REMAINS IN THE CHANNEL.
1649          KM  LOW FLOW IN THE CHANNEL IS BASED ON THE OPENING AT THE DIVERSION GATE
1650          KM  INTENDED TO DIVERT FLOWS INTO THE RETENTION BASIN. FLOWS CONTINUING
1651          KM  IN THE CHANNEL IS BASED ON THE ORIFICE EQUATION WITH THE HEAD BEING EQUAL
1652          KM  TO THE WEIR ELEVATION INTO THE BASIN AND THE DIMENSIONS OF THE GATE
1653          KM  BASED ON FIELD OBSERVATION
1654          KM  OVERFLOW BASED ON WEIR DIMENSIONS
1655          RS       1    STOR       0
1656          SA     2.5       3       6      18      19      20      22      23
1657          SE    1212    1213    1214    1231    1233    1235    1236    1239
1658          SQ    59.9      60      60      60     166     777    1276    3289
              *

1659          KK   RC142
1660          KM  ADOT US60 CHANNEL & GILBERT RD: ROUTE BS142 TO CP143 ALONG US60
1661          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1662          RS       6    FLOW      -1
1663          RC   0.014   0.014   0.014    2560  0.0022
1664          RX       0       1       2      12      14      24      25      26
1665          RY      10       5       5       0       0       5       5      10
              *
1                                          HEC-1 INPUT                                                    PAGE 44

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

1666          KK   S136S
1667          KM  RETURN DIVERTED STREET FLOW FROM CP136
1668          KM  FOR ROUTING SOUTH TO CP143
1669          DR   S136S
              *

1670          KK  RS136S
1671          KM  ROUTE STREET FLOW S136S TO CP143 VIA HARRIS DR
1672          KM  80-FT RIGHT-OF-WAY COLLECTOR
```

```
1673          RS       8    FLOW      -1
1674          RC   0.018   0.018   0.018    2450  0.0004
1675          RX       0       0      17      17      63      63      80      80
1676          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1677          KK   SB143
1678          KM  RUNOFF FROM SUB-BASIN 143
1679          BA    0.23
1680          LG    0.21    0.15    9.70    0.06      39
1681          UC   0.767   0.606
1682          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1683          UA     100
              *

1684          KK    P134
1685          KM  RETURN DIVERTED PIPE FLOW FROM CP134
1686          KM  FOR ROUTING SOUTHWEST TO CP143
1687          DR    P134
              *

1688          KK   RP134
1689          KM  ROUTE PIPE FLOW CP134 TO CP143 VIA GILBERT RD TO EMERALD PARK
1690          KM  84" RCP PIPE - CAPACITY = 286CFS
1691          RK    2400   0.002   0.013            CIRC       7                       6
              *

1692          KK   CP143
1693          KM  US 60 & HARRIS DR: COMBINE RS136S,SB143,RP134,RC142
1694          HC       4
              *

1695          KK   BS143
1696          KM  EMERALD PARK RETENTION BASIN
1697          KM  STAGE STORAGE ASSUMES LOW FLOW REMAINS IN THE CHANNEL.
1698          KM  LOW FLOW IN THE CHANNEL IS BASED ON THE OPENING AT THE DIVERSION GATE
1699          KM  INTENDED TO DIVERT FLOWS INTO THE RETENTION BASIN. FLOWS CONTINUING
1700          KM  IN THE CHANNEL IS BASED ON THE ORIFICE EQUATION WITH THE HEAD BEING EQUAL
1701          KM  TO THE WEIR ELEVATION INTO THE BASIN AND THE DIMENSIONS OF THE GATE
1702          KM  BASED ON FEILD OBSERVATION
1703          KM  OVERFLOW BASED ON WEIR DIMENSIONS
1704          RS       1    STOR       0
1705          SA     3.8       4       8      11    11.5      12    12.5
1706          SE    1210    1211    1214    1222    1224    1226    1227
1707          SQ      50      50      50      50     836    2459    3545
              *
1                                          HEC-1 INPUT                                    PAGE 45

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

1708          KK   RC143
1709          KM  ADOT US60 CHANNEL& HARRIS DR: ROUTE BS143 TO CP144 VIA US60
1710          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1711          RS       4    FLOW      -1
1712          RC   0.014   0.014   0.014    2630   0.002
1713          RX       0       1       2      12      14      24      25      26
1714          RY      10       5       5       0       0       5       5      10
              *

1715          KK   S137S
1716          KM  RETURN DIVERTED STREET FLOW FROM CP137
1717          KM  FOR ROUTING SOUTH TO CP144
1718          DR   S137S
              *

1719          KK  RS137S
1720          KM  ROUTE STREET FLOW S137S TO CP144 VIA STAPLEY DR
1721          KM  4-LANE ARTERIAL
1722          RS       2    FLOW      -1
1723          RC   0.018   0.018   0.018    2350  0.0013
1724          RX       0       0      31      31      99      99     130     130
1725          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1726          KK   SB144
1727          KM  RUNOFF FROM SUB-BASIN 144
1728          BA   0.230
1729          LG    0.22    0.15    9.70    0.06      41
1730          UC   1.171   0.953
1731          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1732          UA     100
              *

1733          KK    D144
```

```
1734          KM  DIVERT RETENTION VOLUME FOR RETENTION BASIN
1735          KM  LOCATED ON THE SOUTH SIDE OF HILTON EAST OF STAPLEY DR
1736          KM  APPROXIMATELY 2 FT OF DEPTH FOR RETENTION. TOTAL VOLUME = 4 ACRE-FEET
1737          DT  RET144       4
1738          DI       0   10000
1739          DQ       0   10000
              *

1740          KK   CP144
1741          KM  ADOT US 60 CHANNEL & STAPLEY DR: COMBINE RS137S,D144,RC143
1742          HC       3
              *

1743          KK   RC144
1744          KM  ADOT US 60 CHANNEL & STAPLEY DR: ROUTE CP144 TO CP145 VIA US60
1745          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1746          RS       1    FLOW      -1
1747          RC   0.014   0.014   0.014    2660  0.0012
1748          RX       0       1       2      14      16      28      29      30
1749          RY      10       6       6       0       0       6       6      10
              *
1                                          HEC-1 INPUT                                                    PAGE 46

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

1750          KK   S138S
1751          KM  RETURN DIVERTED STREET FLOW FROM CP138
1752          KM  FOR ROUTING SOUTH TO CP145
1753          DR   S138S
              *

1754          KK  RS138S
1755          KM  ROUTE STREET FLOW S138S TO CP145 VIA HORNE
1756          KM  80-FT RIGHT-OF-WAY COLLECTOR
1757          RS       2    FLOW      -1
1758          RC   0.018   0.018   0.018    2400  0.0008
1759          RX       0       0      17      17      63      63      80      80
1760          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1761          KK   SB145
1762          KM  RUNOFF FROM SUB-BASIN 145
1763          BA   0.240
1764          LG    0.22    0.15    9.70    0.06      34
1765          UC   0.729   0.531
1766          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1767          UA     100
              *

1768          KK    P138
1769          KM  RETURN DIVERTED PIPE FLOW FROM CP138
1770          KM  FOR ROUTING SOUTH TO CP145
1771          DR    P138
              *

1772          KK   RP138
1773          KM  ROUTE PIPE FLOW P138 TO CP145 VIA HORNE
1774          KM  72" RCP PIPE - CAPACITY = 134CFS
1775          RK    2200   0.001   0.013            CIRC       6                       6
              *

1776          KK   SB148
1777          KM  RUNOFF FROM SUB-BASIN 148
1778          BA    0.15
1779          LG    0.05    0.25     4.8    0.25      90
1780          UC   0.892    2.12
1781          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1782          UA     100
              *

1783          KK   CP145
1784          KM  ADOT US 60 CHANNEL & HORNE: COMBINE RS138S,RP138,SB145,RC144,SB148
1785          HC       5
              *
1                                          HEC-1 INPUT                                                    PAGE 47

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

1786          KK   BS145
1787          KM  SHERWOOD PARK RETENTION BASIN
1788          KM  STAGE STORAGE ASSUMES LOW FLOW REMAINS IN THE CHANNEL.
1789          KM  LOW FLOW IN THE CHANNEL IS BASED ON THE OPENING AT THE DIVERSION GATE
1790          KM  INTENDED TO DIVERT FLOWS INTO THE RETENTION BASIN. FLOWS CONTINUING
```

```
1791          KM  IN THE CHANNEL IS BASED ON THE ORIFICE EQUATION WITH THE HEAD BEING EQUAL
1792          KM  TO THE WEIR ELEVATION INTO THE BASIN AND THE DIMENSIONS OF THE GATE
1793          KM  BASED ON FEILD OBSERVATION
1794          KM  OVERFLOW BASED ON WEIR DIMENSIONS
1795          RS       1    STOR       0
1796          SA       1     1.5       4       8      11      15    15.2    15.5      16
1797          SE    1203    1204    1206    1208    1210    1218    1219    1221    1222
1798          SQ     180     180     180     180     180     180     465    1817    2820
              *

1799          KK   RC145
1800          KM  ADOT US60 CHANNEL & HORNE: ROUTE CP145 TO CP146 VIA US60
1801          KM  ADOT CHANNEL CROSS SECTION
1802          RS       1    FLOW      -1
1803          RC   0.014   0.014   0.014    2640  0.0016
1804          RX       0       1       2      16      24      38      39      40
1805          RY      10       7       7       0       0       7       7      10
              *

1806          KK   S139S
1807          KM  RETURN DIVERTED FLOW FROM CP139
1808          KM  FOR ROUTING SOUTH TO CP146
1809          DR   S139S
              *

1810          KK  RS139S
1811          KM  ROUTE STREET FLOW S139S TO CP146 VIA MESA DR
1812          KM  4-LANE ARTERIAL
1813          RS       2    FLOW      -1
1814          RC   0.018   0.018   0.018    2250  0.0009
1815          RX       0       0      31      31      99      99     130     130
1816          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

1817          KK   SB146
1818          KM  RUNOFF FROM SUB-BASIN 146
1819          BA   0.240
1820          LG    0.23    0.15    7.30    0.13      37
1821          UC   0.817   0.607
1822          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1823          UA     100
              *

1824          KK    D146
1825          KM  DIVERT RETENTION VOLUME FOR RETENTION BASIN
1826          KM  LOCATED ON HOLMES AVE WEST OF HOBSON
1827          KM  APPROXIMATELY 2 FT OF DEPTH FOR RETENTION. TOTAL VOLUME = 3 ACRE-FEET
1828          DT  RET146       3
1829          DI       0   10000
1                                        HEC-1 INPUT                                          PAGE 48

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

1830          DQ       0   10000
              *

1831          KK   SB149
1832          KM  RUNOFF FROM SUB-BASIN 149
1833          BA    0.06
1834          LG    0.05    0.25     4.8    0.25      90
1835          UC   0.288   0.323
1836          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1837          UA     100
              *

1838          KK   CP146
1839          KM  ADOT US 60 CHANNEL & MESA DR: COMBINE RS139S,D146,RC145,SB149
1840          HC       4
              *

1841          KK   RC146
1842          KM  US60 & MESA DR: ROUTE CP146 TO CP147 VIA US60
1843          KM  ADOT CHANNEL CROSS SECTION BASED ON SURVEY AND AS-BUILT INFORMATION
1844          RS       1    FLOW      -1
1845          RC   0.014   0.014   0.014    2670  0.0012
1846          RX       0       1       2      16      24      38      39      40
1847          RY      10       7       7       0       0       7       7      10
              *

1848          KK   S146A
1849          KM  DIVERT 175CFS TO 200 SERIES WATERSHED THROUGH A 54" PIPE UNDER RAILROAD
1850          DT   P146A
1851          DI       0     175   10000
1852          DQ       0     175     175
              *
```

```
1853          KK   S146B
1854          KM  DIVERT 50% OF THE REMAINING FLOW SOUTH TO BE ROUTED THROUGH THE 10' X 10'
1855          KM  BOX CULVERT. ASSUMES WEIR ELEVATION ON THE SOUTH SIDE OF THE ADOT CHANNEL IS
1856          KM  THE SAME AS THE WEIR ELEVATION ON THE NORTH SIDE WHICH DRAINS INTO THE
1857          KM  HERITAGE PARK BASIN
1858          DT   P146B
1859          DI       0    5000   10000
1860          DQ       0    2500    5000
              *

1861          KK   SB147
1862          KM  RUNOFF FROM SUB-BASIN 147
1863          BA   0.230
1864          LG     0.2    0.25    4.80    0.39      42
1865          UC   0.992    0.68
1866          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1867          UA     100
              *
1                                        HEC-1 INPUT                                          PAGE 49

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

1868          KK    P140
1869          KM  RETURN DIVERTED PIPE FLOW FROM CP140
1870          KM  FOR ROUTING SOUTH TO CP147
1871          DR    P140
              *

1872          KK   RP140
1873          KM  ROUTE PIPE FLOW P140 TO CP147 VIA CENTER ST
1874          KM  60" RCP PIPE - CAPACITY = 83CFS
1875          RK    2200   0.001   0.013            CIRC       5                        6
              *

1876          KK   CP147
1877          KM  ADOT US 60 CHANNEL & CENTER ST: COMBINE RS140,RP140,SB147,S146B
1878          HC       4
              *

1879          KK   BS147
1880          KM  HERITAGE PARK RETENTION BASIN
1881          KM  OUTFLOW BASED ON THE WEIR STRUCTURE LOCATED ADJACENT TO THE ADOT CHANNEL.
1882          KM  ONCE THE PARK BASIN FILLS, FLOWS WILL DISCHARGE OVER THE WEIR STRUCTURE BACK
1883          KM  INTO THE ADOT CHANNEL WHERE FLOWS WILL DISCHARGE TO THE SOUTH WEIR
1884          KM  AND BE ROUTED TO THE CENTER ST BASIN.
1885          KM  VOLUME BASED ON SURVEY DATA
1886          RS       1    STOR       0
1887          SA       7      13    18.5      19    19.5      20
1888          SE    1200    1208    1213    1215    1218    1220
1889          SQ       0       0       0     430    2146    3785
              *

1890          KK   P146B
1891          KM  RETURN DIVERTED FLOW S146B
1892          KM  REPRESENTS HALF OF THE ADOT CHANNAL CAPACITY MINUS THE CAPACITY OF THE 54"
1893          KM  PIPE UNDER THE RAILROAD
1894          DR   P146B
              *

1895          KK  CP147A
1896          KM  COMBINE BS147,P146B
1897          HC       2
              *

1898          KK  RP147A
1899          KM  ROUTE FLOW FROM THE ADOT CHANNEL TO CENTER ST BASIN
1900          KM  10' X 10' BOX CULVERT
1901          RK     900   0.002   0.013            DEEP      10                        6
              *

1902          KK  IFHC23
1903          KM  INFLOW FROM GILBERT-CHANDLER ADMS VOLUME II (1994)
1904          KM  SUB-BASIN 23
1905          KM  FLOWS WILL COMBINE WITH FLOWS GENERATED NORTH OF THE US 60
1906          BA       0
1907          ZR     =QI   A=GCADMSFUTURE  B=HC23  C=FLOW  F=24HR FLU FWY
              *
1                                        HEC-1 INPUT                                          PAGE 50

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

1908          KK  CPCSTB
```

```
KM  CENTER ST BASIN: COMBINE RP147A,IFHC23
HC       2
*

KK   BSCST
KM  CENTER ST RETENTION BASIN
KM  VOLUME BASED ON AS-BUILT INFORMATION
RS       1    STOR       0
SA     1.1    15.4      20    21.5    22.9   253.8     500
SE    1196    1198    1202    1206    1210    1214    1215
SQ       0       0       0       0       0       0   10000
ZW    A=TEMPE  B=BSCST  C=FLOW  F=WEST
*
*  ********************************************************************
*  *                                                                  *
*  * 200 SERIES WATERSHED -                                           *
*  * BOUNDED TO THE WEST BY TEMPE CANAL, TO THE NORTH BY CROSSCUT CANAL, *
*  * TO THE EAST BY CENTER STREET AND SOUTHERN-PACIFIC RAILROAD, AND TO *
*  * THE SOUTH BY US60 (SUPERSTITION) FREEWAY.                        *
*  *                                                                  *
*  ********************************************************************
*
*   CHANGED: START TIME AND DATE, NO. OF TIME STEPS FROM 2000 TO 600, AND
*   ADDED NDXMIN OF 2 TO ALL RK RECORDS   MIKE DUNCAN   FCD   05-19-04
*

KK   SB202
KM  RUNOFF FROM SUB-BASIN 202
BA   0.162
IN      15
PB    3.49
KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY TEMPE CANAL TO THE
KM  NORTH AND WEST, SPRR TO THE SOUTH, AND COUNTRY CLUB DR. TO THE EAST.
KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 3.73 SQUARE MILES,
KM  AREAL REDUCTION FACTOR = 0.969
PC       0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
PC   0.983   0.986   0.989   0.992   0.995   0.998       1
LG    0.22    0.25     4.8    0.37      45
UC   0.496   0.352
UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
UA     100
*
```

1 HEC-1 INPUT PAGE 51

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

KK   IP208
KM  UNIVERSITY DR & COUNTRY CLUB DR: PIPE FLOW ROUTED NORTH FROM CP208
KM  TO CP202 CREATES A LOOP IN THE HEC-1 MODEL, THEREFORE PIPE FLOW IS
KM  MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
KM  1-36" RCP FLOWS NORTH ALONG COUNTRY CLUB DR.
KM  PIPE CAPACITY = 16 CFS
BA       0
IN      15
QI      16      16      16      16      16      16      16      16      16      16
QI      16      16      16      16      16      16      16      16      16      16
QI      16      16      16      16      16
*

KK   CP202
KM  8TH ST & COUNTRY CLUB DR: COMBINE SB202, IP208
HC       2
*

KK    S202
KM  8TH ST & COUNTRY CLUB DR: STREET FLOW S202 VS. PIPE FLOW P202
KM  1-48" RCP FLOWS NORTH ALONG COUNTRY CLUB TO OUT OF STUDY AREA
KM  PIPE CAPACITY = 32 CFS
DT    P202
DI       0      32   10000
DQ       0      32      32
*

KK   S202W
KM  8TH ST & COUNTRY CLUB DR: STREET FLOW WEST S202W VS. STREET FLOW SOUTH S202S
KM  SURVEYED INTERSECTION
```

```
1966          DT   S202S
1967          DI       0      48     319     839    1533    2375    3349    4444    5647    6952
1968          DI    8351
1969          DQ       0      29     167     448     826    1286    1819    2420    3082    3801
1970          DQ    4573
              *

1971          KK  RS202W
1972          KM  8TH ST & COUNTRY CLUB DR: ROUTE STREET FLOW S202W WEST TO CHERRY VIA 8TH ST
1973          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
1974          RS       4    FLOW      -1
1975          RC   0.018   0.018   0.018    1900  0.0017
1976          RX       0       0      17      17      63      63      80      80
1977          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

1978          KK   SB203
1979          KM  RUNOFF FROM SUB-BASIN 203
1980          BA   0.179
1981          LG    0.24    0.25    4.80    0.36      40
1982          UC   0.367   0.209
1983          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1984          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 52

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

1985          KK   CP203
1986          KM  8TH ST & CHERRY: COMBINE RS202W AND SB203
1987          HC       2
              *

1988          KK    S203
1989          KM  8TH ST & CHERRY: STREET FLOW S203 VS. PIPE FLOW P203
1990          KM  1-48" RCP FLOWS WEST ALONG 8TH ST TO ALMA SCHOOL RD
1991          KM  PIPE CAPACITY = 59 CFS
1992          DT    P203
1993          DI       0      59   10000
1994          DQ       0      59      59
              *

1995          KK   RS203
1996          KM  8TH ST & CHERRY: ROUTE STREET FLOW S203 WEST TO ALMA SCHOOL RD VIA 8TH ST
1997          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
1998          RS       4    FLOW      -1
1999          RC   0.018   0.018   0.018    3120  0.0017
2000          RX       0       0      17      17      63      63      80      80
2001          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2002          KK    P203
2003          KM  8TH ST & CHERRY: RETURN DIVERTED PIPE FLOW FROM CP203
2004          KM  FOR ROUTING WEST TO CP204
2005          DR    P203
              *

2006          KK   RP203
2007          KM  8TH ST & CHERRY: ROUTE PIPE FLOW P203 WEST TO CP204
2008          KM  1-48" RCP FLOWS WEST ALONG 8TH ST TO ALMA SCHOOL RD
2009          KM  PIPE CAPACITY = 59 CFS
2010          RK    3120  0.0017   0.013            CIRC       4                       2
              *

2011          KK   SB204
2012          KM  RUNOFF FROM SUB-BASIN 204
2013          BA   0.238
2014          LG    0.23    0.25    4.70    0.37      42
2015          UC   0.471   0.295
2016          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2017          UA     100
              *

2018          KK    D204
2019          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WESTWOOD HIGH SCHOOL.
2020          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE BASEBALL AND TRACK FIELDS.
2021          KM  APPROX. 8 ACRE-FEET OF RETENTION
2022          DT  RET204       8
2023          DI       0   10000
2024          DQ       0   10000
              *
1                                          HEC-1 INPUT                                          PAGE 53

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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2025          KK   CP204
2026          KM  8TH ST & ALMA SCHOOL RD: COMBINE RS203, RP203, D204
2027          HC       3
              *

2028          KK   S204W
2029          KM  8TH ST & ALMA SCHOOL RD: STREET FLOW NORTH S204N VS. STREET FLOW WEST S204W
2030          KM  SURVEYED INTERSECTION
2031          DT   S204N
2032          DI       0       2      86     553    1388    2494    3829    5372    7100    9000
2033          DI   11058   13264
2034          DQ       0       2      56     353     900    1627    2507    3526    4669    5928
2035          DQ    7293    8758
              *

2036          KK  RS204W
2037          KM  8TH ST & ALMA SCHOOL RD: ROUTE STREET FLOW S204W WEST TO CP206 VIA 8TH ST
2038          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2039          RS       3    FLOW      -1
2040          RC   0.018   0.018   0.018    2675  0.0049
2041          RX       0       0      17      17      63      63      80      80
2042          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2043          KK   SB206
2044          KM  RUNOFF FROM SUB-BASIN 206
2045          BA   0.139
2046          LG    0.24    0.25    4.60    0.39      34
2047          UC   0.308   0.205
2048          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2049          UA     100
              *

2050          KK    D206
2051          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WHITTIER ELEMENTARY SCHOOL.
2052          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
2053          KM  APPROX. 4 ACRE-FEET OF RETENTION
2054          DT  RET206       4
2055          DI       0   10000
2056          DQ       0   10000
              *

2057          KK   CP206
2058          KM  8TH ST & LONGMORE: COMBINE RS204W, D206
2059          HC       2
              *

2060          KK   RS206
2061          KM  8TH ST & LONGMORE: ROUTE STREET FLOW CP206 WEST TO TEMPE CANAL VIA 8TH ST
2062          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2063          RS       1    FLOW      -1
2064          RC   0.018   0.018   0.018     470    0.02
2065          RX       0       0      17      17      63      63      80      80
2066          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
1                                   HEC-1 INPUT                                          PAGE 54

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

2067          KK   SB207
2068          KM  RUNOFF FROM SUB-BASIN 207
2069          BA   0.124
2070          LG    0.24    0.25    4.30    0.48      40
2071          UC   0.325   0.269
2072          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2073          UA     100
              *

2074          KK   CP207
2075          KM  8TH ST & TEMPE CANAL: COMBINE RS206, SB207
2076          HC       2
              *

2077          KK   S202S
2078          KM  8TH ST & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S202S
2079          KM  FOR ROUTING SOUTH TO CP208
2080          DR   S202S
              *

2081          KK  RS202S
2082          KM  8TH ST & COUNTRY CLUB DR: ROUTE STREET FLOW S202S SOUTH
2083          KM  TO UNIVERSITY DR VIA COUNTRY CLUB DR
```

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2084          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2085          RS       7    FLOW      -1
2086          RC   0.018   0.018   0.018    2645  0.0008
2087          RX       0       0      21      21     109     109     130     130
2088          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2089          KK   SB208
2090          KM  RUNOFF FROM SUB-BASIN 208
2091          BA   0.165
2092          LG    0.22    0.25    4.80    0.37      40
2093          UC   0.579   0.471
2094          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2095          UA     100
              *

2096          KK    D208
2097          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WHITTIER ELEMENTARY SCHOOL.
2098          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
2099          KM  APPROX. 4 ACRE-FEET OF RETENTION
2100          DT  RET208       4
2101          DI       0   10000
2102          DQ       0   10000
              *

2103          KK   CP208
2104          KM  UNVERSITY DR & COUNTRY CLUB DR: COMBINE RS202S AND D208
2105          HC       2
              *
1                                        HEC-1 INPUT                                          PAGE 55

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

2106          KK    S208
2107          KM  UNIVERSITY DR & COUNTRY CLUB DR: STREET FLOW S208 VS. PIPE FLOW P208
2108          KM  1-36" RCP FLOWS NORTH ALONG COUNTRY CLUB TO CP202
2109          KM  PIPE CAPACITY = 16 CFS
2110          DT    P208
2111          DI       0      16   10000
2112          DQ       0      16      16
              *

2113          KK   S208W
2114          KM  UNIVERSITY DR & COUNTRY CLUB DR: STREET FLOW WEST S208W
2115          KM  VS. STREET FLOW SOUTH S208S
2116          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2117          KM  UNIVERSITY DR IS 4-LANE ARTERIAL, COUNTRY CLUB DR IS 6-LANE ARTERIAL
2118          DT   S208S
2119          DI       0      32     306     912    1747    2780    3989    5357    6873    8527
2120          DI   10309
2121          DQ       0      13     118     362     700    1120    1611    2168    2786    3460
2122          DQ    4186
              *

2123          KK  RS208W
2124          KM  UNIVERSITY DR & COUNTRY CLUB DR: ROUTE STREET FLOW S208W WEST
2125          KM  TO EXTENSION RD VIA UNIVERSITY DR
2126          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2127          RS       5    FLOW      -1
2128          RC   0.018   0.018   0.018    2530  0.0017
2129          RX       0       0      31      31      99      99     130     130
2130          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2131          KK   SB209
2132          KM  RUNOFF FROM SUB-BASIN 209
2133          BA   0.195
2134          LG    0.22    0.25    4.80    0.36      41
2135          UC   0.533   0.331
2136          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2137          UA     100
              *

2138          KK   CP209
2139          KM  UNIVERSITY DR & EXTENSION RD: COMBINE RS208W AND SB209
2140          HC       2
              *

2141          KK    S209
2142          KM  UNIVERSITY DR & EXTENSION RD: STREET FLOW S209 VS. PIPE FLOW P209
2143          KM  1-24" RCP FLOWS SOUTH ALONG EXTENSION RD TO CP215
2144          KM  PIPE CAPACITY = 9 CFS
2145          DT    P209
2146          DI       0       9   10000
```

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2147          DQ       0       9       9
              *
1                                   HEC-1 INPUT                                                    PAGE 56

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

2148          KK   RS209
2149          KM  UNIVERSITY DR & EXTENSION RD: ROUTE STREET FLOW S209 WEST
2150          KM  TO ALMA SCHOOL RD VIA UNIVERSITY DR
2151          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2152          RS       5    FLOW      -1
2153          RC   0.018   0.018   0.018    2520  0.0007
2154          RX       0       0      31      31      99      99     130     130
2155          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2156          KK   SB210
2157          KM  RUNOFF FROM SUB-BASIN 210
2158          BA   0.175
2159          LG    0.21    0.25    4.80    0.36      59
2160          UC   0.654   0.522
2161          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2162          UA     100
              *

2163          KK    D210
2164          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WESTWOOD HIGH, CARSON
2165          KM  JUNIOR HIGH, AND EMERSON ELEMENTARY SCHOOLS.  APPROX. 1 FT OF
2166          KM  DEPTH FOR PONDING ON FIELDS.  APPROX. 14 ACRE-FEET OF RETENTION.
2167          DT  RET210      14
2168          DI       0   10000
2169          DQ       0   10000
              *

2170          KK   CP210
2171          KM  UNIVERSITY DR & ALMA SCHOOL RD: COMBINE RS209W, D210
2172          HC       2
              *

2173          KK   S210W
2174          KM  UNIVERSITY DR & ALMA SCHOOL RD: STREET FLOW WEST S210W VS.
2175          KM  STREET FLOW SOUTH S210S
2176          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2177          KM  UNIVERSITY DR IS 4-LANE ARTERIAL, ALMA SCHOOL RD IS 6-LANE ARTERIAL
2178          DT   S210S
2179          DI       0      44     409    1220    2341    3725    5346    7180    9212   11430
2180          DI   13820
2181          DQ       0      19     171     523    1013    1619    2330    3135    4028    5003
2182          DQ    6054
              *

2183          KK  RS210W
2184          KM  UNIVERSITY DR & ALMA SCHOOL RD: ROUTE STREET FLOW S210W WEST
2185          KM  TO LONGMORE VIA UNIVERSITY DR
2186          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2187          RS       4    FLOW      -1
2188          RC   0.018   0.018   0.018    2715   0.004
2189          RX       0       0      31      31      99      99     130     130
2190          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                   HEC-1 INPUT                                                    PAGE 57

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

2191          KK   SB211
2192          KM  RUNOFF FROM SUB-BASIN 211
2193          BA   0.262
2194          LG    0.21    0.25    5.10    0.32      47
2195          UC   0.563   0.354
2196          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2197          UA     100
              *

2198          KK   CP211
2199          KM  UNIVERSITY DR & LONGMORE: COMBINE RS210W AND SB211
2200          HC       2
              *

2201          KK   RS211
2202          KM  UNIVERSITY DR & LONGMORE: ROUTE COMBINED FLOW CP211 WEST
2203          KM  TO DOBSON RD VIA UNIVERSITY DR
2204          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2205          RS       3    FLOW      -1
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2206          RC   0.018   0.018   0.018    2750   0.005
2207          RX       0       0      31      31      99      99     130     130
2208          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2209          KK   SB212
2210          KM  RUNOFF FROM SUB-BASIN 212
2211          BA   0.207
2212          LG    0.21    0.25    4.70    0.38      46
2213          UC   0.421   0.296
2214          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2215          UA     100
              *

2216          KK    D212
2217          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT WEBSTER ELEMENTARY SCHOOL.
2218          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
2219          KM  APPROX. 2 ACRE-FEET OF RETENTION
2220          DT  RET212       2
2221          DI       0   10000
2222          DQ       0   10000
              *

2223          KK   IP213
2224          KM  UNIVERSITY DR & TEMPE CANAL: PIPE FLOW ROUTED EAST FROM CP213 TO
2225          KM  CP212 CREATES A LOOP IN THE HEC-1 MODEL, THEREFORE PIPE FLOW IS
2226          KM  MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
2227          KM  1-24" RCP FLOWS EAST ALONG UNIVERSITY DR.
2228          KM  PIPE CAPACITY = 11 CFS
2229          BA       0
2230          IN      15
2231          QI      11      11      11      11      11      11      11      11      11
2232          QI      11      11      11      11      11      11      11      11      11
2233          QI      11      11      11      11      11
              *
1                                          HEC-1 INPUT                                    PAGE 58

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

2234          KK   IP218
2235          KM  MAIN ST & DOBSON RD: PIPE FLOW ROUTED NORTH FROM CP218 TO
2236          KM  CP212 CREATES A LOOP IN THE HEC-1 MODEL, THEREFORE PIPE FLOW IS
2237          KM  MODELED AS AN INFLOW HYDROGRAPH EQUAL TO THE PIPE CAPACITY.
2238          KM  1-54" RCP FLOWS NORTH ALONG DOBSON RD.
2239          KM  PIPE CAPACITY = 99 CFS
2240          BA       0
2241          IN      15
2242          QI      99      99      99      99      99      99      99      99      99      99
2243          QI      99      99      99      99      99      99      99      99      99      99
2244          QI      99      99      99      99      99
              *

2245          KK   CP212
2246          KM  UNIVERSITY DR & DOBSON RD: COMBINE RS211, D212, IP213, IP218
2247          HC       4
              *

2248          KK    S212
2249          KM  UNIVERSITY DR & DOBSON RD: STREET FLOW S212 VS. PIPE FLOW P212
2250          KM  1-54" RCP FLOWS NORTH ALONG DOBSON RD TO OUT OF STUDY AREA
2251          KM  PIPE CAPACITY = 99 CFS
2252          DT    P212
2253          DI       0      99   10000
2254          DQ       0      99      99
              *

2255          KK   RS212
2256          KM  UNIVERSITY DR & DOBSON RD: ROUTE STREET FLOW S212 WEST
2257          KM  TO TEMPE CANAL VIA UNIVERSITY DR
2258          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2259          RS       1    FLOW      -1
2260          RC   0.018   0.018   0.018     825  0.0055
2261          RX       0       0      31      31      99      99     130     130
2262          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2263          KK   SB213
2264          KM  RUNOFF FROM SUB-BASIN 213
2265          BA   0.189
2266          LG    0.25    0.25    4.15    0.51      32
2267          UC   0.433   0.351
2268          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2269          UA     100
              *
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```
2270          KK   CP213
2271          KM  TEMPE CANAL & UNIVERSITY DR: COMBINE RS212, SB213
2272          HC       2
              *
1                                        HEC-1 INPUT                                                    PAGE 59

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


2273          KK    S213
2274          KM  UNIVERSITY DR & TEMPE CANAL: FLOW S213 VS. PIPE FLOW P213
2275          KM  1-24" RCP FLOWS EAST ALONG UNIVERISTY DR TO CP212
2276          KM  PIPE CAPACITY = 11 CFS
2277          DT    P213
2278          DI       0      11   10000
2279          DQ       0      11      11
              *

2280          KK     CPA
2281          KM  COMBINE CP207 AND S213 IN ORDER TO REDUCE THE NUMBER OF HYDROGRAPHS
2282          KM  IN THE MODEL.  CPA IS NOT REPRESENTATIVE OF A PHYSICAL CONCENTRATION
2283          KM  POINT.
2284          HC       2
              *

2285          KK   S208S
2286          KM  UNIVERSITY DR & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S208S
2287          KM  FOR ROUTING SOUTH TO CP214
2288          DR   S208S
              *

2289          KK  RS208S
2290          KM  UNIVERSITY DR & COUNTRY CLUB DR: ROUTE STREET FLOW S208S SOUTH
2291          KM  TO MAIN ST VIA COUNTRY CLUB DR
2292          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2293          RS       6    FLOW      -1
2294          RC   0.018   0.018   0.018    2650  0.0015
2295          RX       0       0      21      21     109     109     130     130
2296          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2297          KK   SB214
2298          KM  RUNOFF FROM SUB-BASIN 214
2299          BA   0.169
2300          LG    0.18    0.25    4.80    0.38      58
2301          UC   0.613    0.49
2302          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2303          UA     100
              *

2304          KK   CP214
2305          KM  MAIN ST & COUNTRY CLUB DR: COMBINE RS208S, SB214
2306          HC       2
              *

2307          KK   S214W
2308          KM  MAIN ST & COUNTRY CLUB DR: STREET FLOW WEST S214W VS. STREET FLOW SOUTH S214S
2309          KM  SURVEYED INTERSECTION
2310          DT   S214S
2311          DI       0       4      80     374     935    1767    2819    4056    5458    7013
2312          DI    8710   10538
2313          DQ       0       4      66     285     621    1050    1560    2144    2794    3507
2314          DQ    4278    5103
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2315          KK  RS214W
2316          KM  MAIN ST & COUNTRY CLUB DR: ROUTE STREET FLOW S214W WEST
2317          KM  TO EXTENSION RD VIA MAIN ST
2318          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2319          RS       6    FLOW      -1
2320          RC   0.018   0.018   0.018    2540  0.0011
2321          RX       0       0      31      31      99      99     130     130
2322          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2323          KK    P209
2324          KM  UNIVERSITY DR & EXTENSION RD: RETURN DIVERTED PIPE FLOW FROM CP209
2325          KM  FOR ROUTING SOUTH TO CP215
2326          DR    P209
              *
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2327          KK   RP209
2328          KM  UNIVERSITY DR & EXTENSION RD: ROUTE PIPE FLOW P209 SOUTH TO CP215
2329          KM  1-24" RCP FLOWS SOUTH ALONG EXTENSION RD TO MAIN ST
2330          KM  PIPE CAPACITY = 9 CFS
2331          RK    2640  0.0016   0.013            CIRC       2                      2
              *

2332          KK   SB215
2333          KM  RUNOFF FROM SUB-BASIN 215
2334          BA   0.165
2335          LG    0.21    0.25    4.90    0.35      43
2336          UC   0.621   0.484
2337          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2338          UA     100
              *

2339          KK   CP215
2340          KM  MAIN ST & EXTENSION RD: COMBINE RS214W, RP209, SB215
2341          HC       3
              *

2342          KK   S215W
2343          KM  MAIN ST & EXTENSION RD: STREET FLOW WEST S215W VS. STREET FLOW SOUTH S215S
2344          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2345          KM  EXTENSION RD IS 80-FT ROW COLLECTOR, MAIN ST IS 4-LANE ARTERIAL
2346          DT   S215S
2347          DI       0      34     287     801    1501    2359    3357    4483    5725    7076
2348          DI    8531
2349          DQ       0      18     130     343     628     974    1374    1823    2316    2850
2350          DQ    3424
              *

2351          KK  RS215W
2352          KM  MAIN ST & EXTENSION RD: ROUTE STREET FLOW S215W WEST
2353          KM  TO ALMA SCHOOL RD VIA MAIN ST
2354          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2355          RS       5    FLOW      -1
2356          RC   0.018   0.018   0.018    2530  0.0016
1                                          HEC-1 INPUT                                                    PAGE 61

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

2357          RX       0       0      31      31      99      99     130     130
2358          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2359          KK   S210S
2360          KM  UNIVERSITY DR & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S210S
2361          KM  FOR ROUTING SOUTH TO CP216
2362          DR   S210S
              *

2363          KK  RS210S
2364          KM  UNIVERSITY DR & ALMA SCHOOL RD: ROUTE STREET FLOW S210S SOUTH
2365          KM  TO MAIN ST VIA ALMA SCHOOL RD
2366          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2367          RS       5    FLOW      -1
2368          RC   0.018   0.018   0.018    2630  0.0015
2369          RX       0       0      21      21     109     109     130     130
2370          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2371          KK   SB216
2372          KM  RUNOFF FROM SUB-BASIN 216
2373          BA   0.238
2374          LG    0.21    0.17    6.80    0.16      47
2375          UC   0.538   0.345
2376          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2377          UA     100
              *

2378          KK   CP216
2379          KM  MAIN ST & ALMA SCHOOL RD: COMBINE RS215W, RS210S, SB216
2380          HC       3
              *

2381          KK   S216W
2382          KM  MAIN ST & ALMA SCHOOL RD: STREET FLOW WEST S216W VS. STREET FLOW SOUTH S216S
2383          KM  SURVEYED INTERSECTION
2384          DT   S216S
2385          DI       0      18     174     705    1622    2853    4340    6054    7977   10093
2386          DI   12389   14851
2387          DQ       0       0      37     251     683    1302    2065    2955    3961    5074
2388          DQ    6286    7590
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                 *
2389             KK  RS216W
2390             KM  MAIN ST & ALMA SCHOOL RD: ROUTE STREET FLOW S216W WEST
2391             KM  TO LONGMORE VIA MAIN ST
2392             KM  6-LANE ARTERIAL STREET ROUTING SECTION
2393             RS       3    FLOW      -1
2394             RC   0.018   0.018   0.018    2700  0.0026
2395             RX       0       0      21      21     109     109     130     130
2396             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *
1                                          HEC-1 INPUT                                                    PAGE 62

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

2397             KK   SB217
2398             KM  RUNOFF FROM SUB-BASIN 217
2399             BA   0.112
2400             LG    0.20    0.25    4.90    0.36      47
2401             UC   0.463   0.383
2402             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2403             UA     100
                 *
2404             KK   CP217
2405             KM  MAIN ST & LONGMORE: COMBINE RS216W AND SB217
2406             HC       2
                 *
2407             KK    S217
2408             KM  MAIN ST & LONGMORE: STREET FLOW S217 VS. PIPE FLOW P217
2409             KM  1-18" RCP FLOWS WEST ALONG MAIN ST TO CP218
2410             KM  PIPE CAPACITY = 5 CFS
2411             DT    P217
2412             DI       0       5   10000
2413             DQ       0       5       5
                 *
2414             KK   S217W
2415             KM  MAIN ST & LONGMORE: STREET FLOW WEST S217W VS. STREET FLOW SOUTH S217S
2416             KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2417             KM  LONGMORE IS 60-FT ROW COLLECTOR, MAIN ST IS 6-LANE ARTERIAL
2418             DT   S217S
2419             DI       0      51     372    1068    2022    3195    4561    6104    7808    9662
2420             DI   11656
2421             DQ       0      24     133     337     606     930    1302    1718    2173    2664
2422             DQ    3188
                 *
2423             KK  RS217W
2424             KM  MAIN ST & LONGMORE: ROUTE STREET FLOW S217W WEST
2425             KM  TO DOBSON RD VIA MAIN ST
2426             KM  6-LANE ARTERIAL STREET ROUTING SECTION
2427             RS       3    FLOW      -1
2428             RC   0.018   0.018   0.018    2745  0.0036
2429             RX       0       0      21      21     109     109     130     130
2430             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *
2431             KK    P217
2432             KM  MAIN ST & LONGMORE: RETURN DIVERTED PIPE FLOW FROM CP217
2433             KM  FOR ROUTING WEST TO CP218
2434             DR    P217
                 *
1                                          HEC-1 INPUT                                                    PAGE 63

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

2435             KK   RP217
2436             KM  MAIN ST & LONGMORE: ROUTE PIPE FLOW P217 WEST TO CP218
2437             KM  1-18" RCP FLOWS WEST ALONG MAIN ST TO DOBSON RD
2438             KM  PIPE CAPACITY = 5 CFS
2439             RK    2745  0.0027   0.013            CIRC     1.5                        2
                 *
2440             KK   SB218
2441             KM  RUNOFF FROM SUB-BASIN 218
2442             BA   0.056
2443             LG    0.17    0.25    4.80    0.39      56
2444             UC   0.442   0.547
2445             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2446             UA     100
                 *
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2447          KK   CP218
2448          KM  MAIN ST & DOBSON RD: COMBINE RS217W, RP217, SB218
2449          HC       3
              *

2450          KK    S218
2451          KM  MAIN ST & DOBSON RD: STREET FLOW S218 VS. PIPE FLOW P218
2452          KM  1-54" RCP FLOWS NORTH ALONG DOBSON RD TO CP212
2453          KM  PIPE CAPACITY = 99 CFS
2454          DT    P218
2455          DI       0      99   10000
2456          DQ       0      99      99
              *

2457          KK   RS218
2458          KM  MAIN ST & DOBSON RD: ROUTE STREET FLOW S218W WEST
2459          KM  TO TEMPE CANAL VIA MAIN ST
2460          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2461          RS       4    FLOW      -1
2462          RC   0.018   0.018   0.018    3065  0.0047
2463          RX       0       0      21      21     109     109     130     130
2464          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2465          KK   SB219
2466          KM  RUNOFF FROM SUB-BASIN 219
2467          BA   0.177
2468          LG    0.24    0.25    4.50    0.42      36
2469          UC   0.388   0.249
2470          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2471          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2472          KK   CP219
2473          KM  TEMPE CANAL & MAIN ST: COMBINE RS218, SB219
2474          HC       2
              *

2475          KK   BS219
2476          KM  RETENTION STORAGE ALONG TEMPE CANAL, NORTH OF MAIN ST.
2477          KM  CONTOUR AREAS MEASURED FOR VOLUME CALCULATIONS WERE REDUCED BY
2478          KM  APPROX. BUILDING SQUARE FOOTAGES.  OUTFLOW FROM UNEVEN WEIR CALCULATIONS
2479          KM  BASED ON TEMPE CANAL AND MAIN ST SURVEYED ELEVATIONS.
2480          RS       1    STOR       0
2481          SA     2.4     8.8      15
2482          SE    1204    1205    1206
2483          SQ       0     160    4187
              *

2484          KK   S215S
2485          KM  MAIN ST & EXTENSION RD: RETURN DIVERTED STREET FLOW S215S
2486          KM  FOR ROUTING SOUTH TO CP221
2487          DR   S215S
              *

2488          KK  RS215S
2489          KM  MAIN ST & EXTENSION RD: ROUTE STREET FLOW S215S SOUTH
2490          KM  TO RAILROAD VIA EXTENSION RD
2491          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2492          RS       3    FLOW      -1
2493          RC   0.018   0.018   0.018    1490  0.0022
2494          RX       0       0      17      17      63      63      80      80
2495          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2496          KK   SB221
2497          KM  RUNOFF FROM SUB-BASIN 221
2498          BA   0.085
2499          LG    0.17    0.25    4.80    0.39      60
2500          UC   0.358   0.282
2501          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2502          UA     100
              *

2503          KK   CP221
2504          KM  RAILROAD & EXTENSION RD: COMBINE RS215S, SB221
2505          HC       2
              *

2506          KK   RC221
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2507          KM  RAILROAD & EXTENSION RD: ROUTE FLOW CP221 WEST
2508          KM  TO ALMA SCHOOL RD ALONG THE RAILROAD
2509          RS       3    FLOW      -1
2510          RC    0.03    0.03    0.03    2540   0.002
2511          RX       0       0       5      20      30    32.5      33      33
2512          RY       5       4       4       0       0       1       1       6
              *
1                                        HEC-1 INPUT                                                    PAGE 65

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


2513          KK   S216S
2514          KM  MAIN ST & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S216S
2515          KM  FOR ROUTING SOUTH TO CP222
2516          DR   S216S
              *

2517          KK  RS216S
2518          KM  MAIN ST & ALMA SCHOOL RD: ROUTE STREET FLOW S216S SOUTH
2519          KM  TO RAILROAD VIA ALMA SCHOOL RD
2520          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2521          RS       2    FLOW      -1
2522          RC   0.018   0.018   0.018    1325   0.002
2523          RX       0       0      21      21     109     109     130     130
2524          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2525          KK   SB222
2526          KM  RUNOFF FROM SUB-BASIN 222
2527          BA   0.123
2528          LG    0.15    0.25    4.80    0.40      64
2529          UC   0.475   0.379
2530          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2531          UA     100
              *

2532          KK   CP222
2533          KM  RAILROAD & ALMA SCHOOL RD: COMBINE RC221, RS216S, AND SB222
2534          HC       3
              *

2535          KK   RC222
2536          KM  RAILROAD & ALMA SCHOOL RD: ROUTE FLOW CP222 WEST
2537          KM  TO LONGMORE ALONG THE RAILROAD
2538          RS       2    FLOW      -1
2539          RC    0.03    0.03    0.03    2700   0.002
2540          RX       0       0       5      20      30    32.5      33      33
2541          RY       5       4       4       0       0       1       1       6
              *

2542          KK   S217S
2543          KM  MAIN ST & LONGMORE: RETURN DIVERTED STREET FLOW S217S
2544          KM  FOR ROUTING SOUTH TO CP223
2545          DR   S217S
              *

2546          KK  RS217S
2547          KM  MAIN ST & LONGMORE: ROUTE STREET FLOW S217S SOUTH TO RAILROAD VIA LONGMORE
2548          KM  60-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2549          RS       2    FLOW      -1
2550          RC   0.018   0.018   0.018    1325   0.003
2551          RX       0       0      13      13      47      47      60      60
2552          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2553          KK   SB223
2554          KM  RUNOFF FROM SUB-BASIN 223
2555          BA   0.128
2556          LG    0.15    0.26    4.80    0.37      69
2557          UC   0.417   0.332
2558          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2559          UA     100
              *

2560          KK    D223
2561          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT EAST VALLEY INSTITUTE OF
2562          KM  TECHNOLOGY.  APPROX. AVERAGE 2.5 FT DEPTH FOR PONDING WITHIN LARGE
2563          KM  RETENTION BASINS AT SOUTH AND EAST ENDS OF CAMPUS.
2564          KM  APPROX. 6 ACRE-FEET OF RETENTION.
2565          DT  RET223       6
```

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2566          DI       0   10000
2567          DQ       0   10000
              *

2568          KK   CP223
2569          KM  RAILROAD & LONGMORE: COMBINE RC222, RS217S, AND D223
2570          HC       3
              *

2571          KK   RC223
2572          KM  RAILROAD & LONGMORE: ROUTE FLOW CP223 WEST
2573          KM  TO DOBSON RD ALONG THE RAILROAD
2574          RS       2    FLOW      -1
2575          RC    0.03    0.03    0.03    2740   0.002
2576          RX       0       0       5      20      30    32.5      33      33
2577          RY       5       4       4       0       0       1       1       6
              *

2578          KK   SB224
2579          KM  RUNOFF FROM SUB-BASIN 224
2580          BA   0.131
2581          LG    0.14    0.25    4.80    0.39      64
2582          UC   0.475    0.37
2583          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2584          UA     100
              *

2585          KK    D224
2586          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT EAST VALLEY ACADEMY.
2587          KM  APPROX. AVERAGE 2.5 FT DEPTH FOR PONDING WITHIN LARGE
2588          KM  RETENTION BASINS AT WEST END OF CAMPUS.
2589          KM  APPROX. 5 ACRE-FEET OF RETENTION.
2590          DT  RET224       5
2591          DI       0   10000
2592          DQ       0   10000
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2593          KK   CP224
2594          KM  RAILROAD & DOBSON RD: COMBINE RC223 AND D224
2595          HC       2
              *

2596          KK   RC224
2597          KM  RAILROAD & DOBSON RD: ROUTE FLOW S224 WEST TO
2598          KM  TEMPE CANAL ALONG THE RAILROAD
2599          RS       3    FLOW      -1
2600          RC    0.03    0.03    0.03    4160   0.003
2601          RX       0       0       5      20      30    32.5      33      33
2602          RY       5       4       4       0       0       1       1       6
              *

2603          KK   SB225
2604          KM  RUNOFF FROM SUB-BASIN 225
2605          BA   0.174
2606          LG    0.22    0.25    4.80    0.36      50
2607          UC   0.542   0.504
2608          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2609          UA     100
              *

2610          KK   CP225
2611          KM  RAILROAD & TEMPE CANAL: COMBINE RC224, SB225
2612          HC       2
              *

2613          KK   BS225
2614          KM  RETENTION STORAGE ALONG TEMPE CANAL, NORTH OF SOUTHERN PACIFIC RAILROAD.
2615          KM  CONTOUR AREAS MEASURED FOR VOLUME CALCULATIONS WERE REDUCED BY
2616          KM  APPROX. BUILDING SQUARE FOOTAGES.  OUTFLOW FROM UNEVEN WEIR CALCULATIONS
2617          KM  BASED ON TEMPE CANAL AND RAILROAD SURVEYED ELEVATIONS.
2618          RS       1    STOR       0
2619          SA     0.4     0.7       8    16.5
2620          SE    1200    1202    1204    1205
2621          SQ       0       0     324    4116
              *

2622          KK     CPB
2623          KM  COMBINE BS219 AND BS225 IN ORDER TO REDUCE THE NUMBER OF HYDROGRAPHS
2624          KM  IN THE MODEL.  CPB IS NOT REPRESENTATIVE OF A PHYSICAL CONCENTRATION
2625          KM  POINT.
2626          HC       2
```

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                 *
2627             KK     CPC
2628             KM  COMBINE CPA AND CPB IN ORDER TO REDUCE THE NUMBER OF HYDROGRAPHS
2629             KM  IN THE MODEL.  CPC IS NOT REPRESENTATIVE OF A PHYSICAL CONCENTRATION
2630             KM  POINT.
2631             HC       2
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2632             KK   SB226
2633             KM  RUNOFF FROM SUB-BASIN 226
2634             BA   0.051
2635             PB    3.51
2636             KM  AREA REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
2637             KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
2638             KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.82 SQUARE MILES
2639             KM  AREAL REDUCTION FACTOR = 0.975
2640             LG    0.15    0.25    4.80    0.35      70
2641             UC   0.638   0.737
2642             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2643             UA     100
                 *

2644             KK   S226W
2645             KM  EXTENSION RD & BROADWAY RD: STREET FLOW WEST S226W VS. STREET FLOW SOUTH S226S
2646             KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2647             KM  EXTENSION IS 80-FT ROW COLLECTOR, BROADWAY IS 4-LANE ARTERIAL
2648             DT   S226S
2649             DI       0      33     266     738    1375    2156    3063    4086    5213    6440
2650             DI    7757
2651             DQ       0      21     149     394     720    1117    1576    2091    2656    3270
2652             DQ    3927
                 *

2653             KK  RS226W
2654             KM  EXTENSION RD & BROADWAY RD: ROUTE STREET FLOW S226W WEST
2655             KM  TO ALMA SCHOOL RD VIA BROADWAY RD
2656             KM  4-LANE ARTERIAL STREET ROUTING SECTION
2657             RS       7    FLOW      -1
2658             RC   0.018   0.018   0.018    2525  0.0018
2659             RX       0       0      31      31      99      99     130     130
2660             RY       4    0.18    0.18       0       0    0.18    0.18       4
                 *

2661             KK   SB227
2662             KM  RUNOFF FROM SUB-BASIN 227
2663             BA   0.117
2664             LG    0.13    0.25    4.80    0.39      72
2665             UC   0.529   0.456
2666             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2667             UA     100
                 *

2668             KK   CP227
2669             KM  BROADWAY RD & ALMA SCHOOL RD: COMBINE RS226W, AND SB227
2670             HC       2
                 *
1                                          HEC-1 INPUT                                          PAGE 69

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


2671             KK    S227
2672             KM  BROADWAY RD & ALMA SCHOOL RD: STREET FLOW S227 VS. PIPE FLOW P227
2673             KM  1-30" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO CP234
2674             KM  PIPE CAPACITY = 21 CFS
2675             DT    P227
2676             DI       0      21   10000
2677             DQ       0      21      21
                 *

2678             KK   S227W
2679             KM  BROADWAY RD & ALMA SCHOOL RD: STREET FLOW WEST S227W VS.
2680             KM  STREET FLOW SOUTH S227S
2681             KM  SURVEYED INTERSECTION
2682             DT   S227S
2683             DI       0      16     152     619    1385    2378    3570    4939    6471    8153
2684             DI    9974
2685             DQ       0      16     135     488     996    1634    2388    3245    4199    5241
2686             DQ    6366
                 *
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2687          KK  RS227W
2688          KM  BROADWAY RD & ALMA SCHOOL RD: ROUTE STREET FLOW S227W WEST
2689          KM  TO LONGMORE VIA BROADWAY RD
2690          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2691          RS       7    FLOW      -1
2692          RC   0.018   0.018   0.018    2730  0.0027
2693          RX       0       0      31      31      99      99     130     130
2694          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2695          KK   SB228
2696          KM  RUNOFF FROM SUB-BASIN 228
2697          BA   0.129
2698          PB    3.51
2699          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
2700          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
2701          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.73 SQUARE MILES
2702          KM  AREAL REDUCTION FACTOR = 0.975
2703          LG    0.10    0.26    4.80    0.41      74
2704          UC   0.483   0.426
2705          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2706          UA     100
              *

2707          KK   CP228
2708          KM  BROADWAY RD & LONGMORE: COMBINE RS227W, SB228
2709          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 70

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

2710          KK   S228W
2711          KM  BROADWAY RD & LONGMORE: STREET FLOW WEST S228W VS. STREET FLOW SOUTH S228S
2712          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
2713          KM  BROADWAY RD IS 4-LANE ARTERIAL, LONGMORE IS 80-FT ROW COLLECTOR
2714          DT   S228S
2715          DI       0      36     313     887    1671    2635    3757    5024    6425    7950
2716          DI    9591
2717          DQ       0      13      95     249     456     707     997    1322    1680    2068
2718          DQ    2483
              *

2719          KK  RS228W
2720          KM  BROADWAY RD & LONGMORE: ROUTE STREET FLOW S228W WEST
2721          KM  TO DOBSON RD VIA BROADWAY RD
2722          KM  4-LANE ARTERIAL STREET ROUTING SECTION
2723          RS       5    FLOW      -1
2724          RC   0.018   0.018   0.018    2715  0.0024
2725          RX       0       0      31      31      99      99     130     130
2726          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

2727          KK   SB229
2728          KM  RUNOFF FROM SUB-BASIN 229
2729          BA   0.129
2730          LG    0.10    0.28    4.80    0.37      55
2731          UC     0.5   0.409
2732          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2733          UA     100
              *

2734          KK   CP229
2735          KM  BROADWAY RD & DOBSON RD: COMBINE RS228W, AND SB229
2736          HC       2
              *

2737          KK    S229
2738          KM  BROADWAY RD & DOBSON RD: STREET FLOW S229 VS. PIPE FLOW P229
2739          KM  1-27" RCP FLOWS SOUTH ALONG DOBSON RD TO 8TH AVE
2740          KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 14 CFS.  PIPE CAPACITY
2741          KM  WAS REDUCED TO 13.9 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
2742          KM  DUE TO A SURCHARGED FLOW CONDITION AT 14.0 CFS.
2743          DT    P229
2744          DI       0    13.9   10000
2745          DQ       0    13.9    13.9
              *

2746          KK   S229W
2747          KM  BROADWAY RD & DOBSON RD: STREET FLOW WEST S229W VS. STREET FLOW SOUTH S229S
2748          KM  SURVEYED INTERSECTION
2749          DT   S229S
2750          DI       0      21     224     841    1753    2962    4401    6048    7885    9898
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2751          DI   12076
2752          DQ       0       6      94     395     839    1430    2135    2943    3845    4834
2753          DQ    5904
              *
1                                          HEC-1 INPUT                                                PAGE 71

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

2754          KK  RS229W
2755          KM  BROADWAY RD & DOBSON RD: ROUTE STREET FLOW S229W WEST
2756          KM  TO TEMPE CANAL VIA BROADWAY RD
2757          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2758          RS       6    FLOW      -1
2759          RC   0.018   0.018   0.018    4165  0.0027
2760          RX       0       0      21      21     109     109     130     130
2761          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2762          KK   SB230
2763          KM  RUNOFF FROM SUB-BASIN 230
2764          BA   0.202
2765          LG    0.13    0.25    4.80    0.41      78
2766          UC   0.521   0.443
2767          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2768          UA     100
              *

2769          KK   CP230
2770          KM  TEMPE CANAL & BROADWAY RD: COMBINE RS229W, SB230
2771          HC       2
              *

2772          KK    S230
2773          KM  TEMPE CANAL & BROADWAY RD: OVERLAND FLOW S230 VS. PIPE FLOW P230
2774          KM  1-48" RCP FLOWS UNDER TEMPE CANAL AND OUT OF STUDY AREA
2775          KM  PIPE CAPACITY = 84 CFS
2776          DT    P230
2777          DI       0      84   10000
2778          DQ       0      84      84
              *

2779          KK   BS230
2780          KM  RETENTION STORAGE ALONG TEMPE CANAL, NORTH OF BROADWAY RD.
2781          KM  CONTOUR AREAS MEASURED FOR VOLUME CALCULATIONS WERE REDUCED BY
2782          KM  APPROX. BUILDING SQUARE FOOTAGES.  OUTFLOW FROM UNEVEN WEIR CALCULATIONS
2783          KM  BASED ON TEMPE CANAL AND BROADWAY RD SURVEYED ELEVATIONS.
2784          RS       1    STOR       0
2785          SA       3      11      20
2786          SE    1202    1203    1204
2787          SQ       3     706    4218
              *

2788          KK   RC230
2789          KM  ROUTE FLOW SOUTH FROM BROADWAY RD ALONG EL DORADO CIRCLE TO 8TH AVE.
2790          RS       3    FLOW      -1
2791          RC    0.08    0.03    0.08    2790  0.0015
2792          RX       0     600     865     865     900     900    1100    1110
2793          RY       4       2       1       0       0       1       2       4
              *
1                                          HEC-1 INPUT                                                PAGE 72

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

2794          KK   S214S
2795          KM  MAIN ST & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S214S
2796          KM  FOR ROUTING SOUTH TO CP220
2797          DR   S214S
              *

2798          KK  RS214S
2799          KM  MAIN ST & COUNTRY CLUB DR: ROUTE STREET FLOW S214S SOUTH
2800          KM  TO DIP SECTION AT RAILROAD VIA COUNTRY CLUB DR
2801          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2802          RS       4    FLOW      -1
2803          RC   0.018   0.018   0.018    2350  0.0019
2804          RX       0       0      21      21     109     109     130     130
2805          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

2806          KK   SB220
2807          KM  RUNOFF FROM SUB-BASIN 220
2808          BA   0.191
2809          PB    3.51
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2810          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
2811          KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
2812          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.82 SQUARE MILES
2813          KM  AREAL REDUCTION FACTOR = 0.975
2814          LG    0.15    0.25    4.80    0.39      63
2815          UC   0.425   0.231
2816          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2817          UA     100
              *

2818          KK   CP220
2819          KM  RAILROAD & COUNTRY CLUB DR: COMBINE RS214S, SB2220
2820          HC       2
              *

2821          KK    P220
2822          KM  RAILROAD & COUNTRY CLUB DR: DIVERT FLOW AT CP220 TO PIPE FLOW P220
2823          KM  1-48" RCP FLOWS SOUTH ALONG COUNTRY CLUB TO 8TH AVE
2824          KM  PIPE CAPACITY = 69 CFS
2825          DT    S220
2826          DI       0      69   10000
2827          DQ       0       0    9931
              *

2828          KK   RP220
2829          KM  RAILROAD & COUNTRY CLUB DR: ROUTE PIPE FLOW P220 SOUTH TO CP232
2830          KM  1-48" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO 8TH AVE
2831          KM  PIPE CAPACITY = 69 CFS
2832          RK    2640  0.0023   0.013            CIRC       4                       2
              *
1                                          HEC-1 INPUT                                          PAGE 73

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

2833          KK   SB231
2834          KM  RUNOFF FROM SUB-BASIN 231
2835          BA   0.079
2836          LG    0.17    0.26    4.80    0.38      74
2837          UC   0.454   0.447
2838          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2839          UA     100
              *

2840          KK    P231
2841          KM  8TH AVE & RAILROAD: PIPE FLOW P231 VS. OVERLAND FLOW S231
2842          KM  1-36" RCP FLOWS WEST ALONG 8TH AVE TO COUNTRY CLUB DR
2843          KM  PIPE CAPACITY = 25 CFS
2844          DT    S231
2845          DI       0      25   10000
2846          DQ       0       0    9975
              *

2847          KK   RP231
2848          KM  8TH AVE & RAILROAD: ROUTE PIPE FLOW WEST TO CP232
2849          KM  1-36" RCP FLOWS WEST ALONG 8TH AVE TO COUNTRY CLUB DR
2850          KM  PIPE CAPACITY = 25 CFS
2851          RK    2570  0.0014   0.013            CIRC       3                       2
              *

2852          KK   SB232
2853          KM  RUNOFF FROM SUB-BASIN 232
2854          BA   0.188
2855          LG    0.20    0.25    4.80    0.37      48
2856          UC   0.546   0.426
2857          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2858          UA     100
              *

2859          KK    D232
2860          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT BOYS & GIRLS CLUB.
2861          KM  APPROX. AVERAGE 2.5 FT OF DEPTH FOR PONDING ON THE GRASSED AREA.
2862          KM  APPROX. 4 ACRE-FEET OF RETENTION
2863          DT  RET232       4
2864          DI       0   10000
2865          DQ       0   10000
              *

2866          KK   CP232
2867          KM  8TH AVE & COUNTRY CLUB DR: COMBINE RP231, RP220, SB232
2868          HC       3
              *

2869          KK    S232
2870          KM  8TH AVE & COUNTRY CLUB DR: STREET FLOW S232 VS. PIPE FLOW P232
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2871          KM  1-60" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO CP239
2872          KM  PIPE CAPACITY = 138 CFS
2873          DT    P232
2874          DI       0     138   10000
1                                   HEC-1 INPUT                                                    PAGE 74

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

2875          DQ       0     138     138
              *

2876          KK   S232W
2877          KM  8TH AVE & COUNTRY CLUB DR: STREET FLOW WEST S232W VS. STREET FLOW SOUTH S232S
2878          KM  SURVEYED INTERSECTION
2879          DT   S232S
2880          DI       0      37     303     922    1796    2880    4147    5581    7166    8890
2881          DI   10745
2882          DQ       0      37     232     639    1190    1865    2648    3531    4504    5562
2883          DQ    6699
              *

2884          KK  RS232W
2885          KM  8TH AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S232W WEST
2886          KM  TO EXTENSION RD VIA 8TH AVE
2887          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2888          RS      16    FLOW      -1
2889          RC   0.018   0.018   0.018    2585  0.0002
2890          RX       0       0      17      17      63      63      80      80
2891          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2892          KK   S226S
2893          KM  BROADWAY RD & EXTENSION RD: RETURN DIVERTED STREET FLOW S226S
2894          KM  FOR ROUTING SOUTH TO CP233
2895          DR   S226S
              *

2896          KK  RS226S
2897          KM  BROADWAY RD & EXTENSION RD: ROUTE STREET FLOW S226S SOUTH
2898          KM  TO 8TH AVE VIA EXTENSION RD
2899          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2900          RS       4    FLOW      -1
2901          RC   0.018   0.018   0.018    2635  0.0038
2902          RX       0       0      17      17      63      63      80      80
2903          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

2904          KK   SB233
2905          KM  RUNOFF FROM SUB-BASIN 233
2906          BA   0.242
2907          LG    0.21    0.25    4.80    0.37      49
2908          UC   0.633    0.46
2909          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2910          UA     100
              *

2911          KK   CP233
2912          KM  8TH AVE & EXTENSION RD: COMBINE RS226S, RS232W, SB233
2913          HC       3
              *
1                                   HEC-1 INPUT                                                    PAGE 75

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

2914          KK   S233W
2915          KM  8TH AVE & EXTENSION RD: STREET FLOW WEST S233W VS. STREET FLOW SOUTH S233S
2916          KM  SURVEYED INTERSECTION
2917          DT   S233S
2918          DI       0      44     360     967    1781    2771    3917    5202    6615    8146
2919          DI    9786
2920          DQ       0      23     198     556    1041    1633    2320    3092    3942    4863
2921          DQ    5851
              *

2922          KK  RS233W
2923          KM  8TH AVE & EXTENSION RD: ROUTE STREET FLOW S233W WEST
2924          KM  TO ALMA SCHOOL RD VIA 8TH AVE
2925          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2926          RS       4    FLOW      -1
2927          RC   0.018   0.018   0.018    2575  0.0016
2928          RX       0       0      17      17      63      63      80      80
2929          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
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```
2930          KK   SB234
2931          KM  RUNOFF FROM SUB-BASIN 234
2932          BA   0.242
2933          LG    0.21    0.25    4.80    0.38      41
2934          UC   0.575   0.402
2935          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2936          UA     100
              *

2937          KK    D234
2938          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT KLEINMAN PARK.
2939          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
2940          KM  APPROX. 17 ACRE-FEET OF RETENTION.
2941          DT  RET234      17
2942          DI       0   10000
2943          DQ       0   10000
              *

2944          KK   S227S
2945          KM  BROADWAY RD & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S227S
2946          KM  FOR ROUTING SOUTH TO CP234
2947          DR   S227S
              *

2948          KK  RS227S
2949          KM  BROADWAY RD & ALMA SCHOOL RD: ROUTE STREET FLOW S227S SOUTH
2950          KM  TO 8TH AVE VIA ALMA SCHOOL RD
2951          KM  6-LANE ARTERIAL STREET ROUTING SECTION
2952          RS       4    FLOW      -1
2953          RC   0.018   0.018   0.018    2645  0.0027
2954          RX       0       0      21      21     109     109     130     130
2955          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                          HEC-1 INPUT                                          PAGE 76

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

2956          KK    P227
2957          KM  BROADWAY RD & ALMA SCHOOL RD: RETURN DIVERTED PIPE FLOW P227
2958          KM  FOR ROUTING SOUTH TO CP234
2959          DR    P227
              *

2960          KK   RP227
2961          KM  BROADWAY RD & ALMA SCHOOL RD: ROUTE PIPE FLOW SOUTH TO CP234
2962          KM  1-30" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO 8TH AVE
2963          KM  PIPE CAPACITY = 21 CFS
2964          RK    2650  0.0025   0.013            CIRC     2.5                        2
              *

2965          KK   CP234
2966          KM  8TH AVE & ALMA SCHOOL RD: COMBINE RS233W, RS227S, RP227, D234
2967          HC       4
              *

2968          KK    S234
2969          KM  8TH AVE & ALMA SCHOOL RD: STREET FLOW S234 VS. PIPE FLOW P234
2970          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO CP241
2971          KM  PIPE CAPACITY = 106 CFS
2972          DT    P234
2973          DI       0     106   10000
2974          DQ       0     106     106
              *

2975          KK   S234W
2976          KM  8TH AVE & ALMA SCHOOL RD: STREET FLOW WEST S234W VS.
2977          KM  STREET FLOW SOUTH S234S
2978          KM  SURVEYED INTERSECTION
2979          DT   S234S
2980          DI       0       1      67     377     916    1623    2474    3452    4547    5747
2981          DI    7046    8436
2982          DQ       0       1      41     233     578    1034    1584    2219    2932    3715
2983          DQ    4564    5475
              *

2984          KK  RS234W
2985          KM  8TH AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S234W WEST
2986          KM  TO LONGMORE VIA 8TH AVE/PUEBLO AVE
2987          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
2988          RS       6    FLOW      -1
2989          RC   0.018   0.018   0.018    2720  0.0014
2990          RX       0       0      17      17      63      63      80      80
2991          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
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```
2992          KK   S228S
2993          KM  BROADWAY RD & LONGMORE: RETURN DIVERTED STREET FLOW S228S
2994          KM  FOR ROUTING SOUTH TO CP235
2995          DR   S228S
              *
1                                        HEC-1 INPUT                                                    PAGE 77

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


2996          KK  RS228S
2997          KM  BROADWAY RD & LONGMORE: ROUTE STREET FLOW S228S SOUTH
2998          KM  TO PUEBLO AVE VIA LONGMORE
2999          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3000          RS       5    FLOW      -1
3001          RC   0.018   0.018   0.018    2490  0.0024
3002          RX       0       0      17      17      63      63      80      80
3003          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3004          KK   SB235
3005          KM  RUNOFF FROM SUB-BASIN 235
3006          BA   0.245
3007          PB    3.51
3008          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
3009          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
3010          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.73 SQUARE MILES
3011          KM  AREAL REDUCTION FACTOR = 0.975
3012          LG    0.23    0.25    4.80    0.36      38
3013          UC   0.488   0.317
3014          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3015          UA     100
              *

3016          KK   CP235
3017          KM  PUEBLO AVE & LONGMORE: COMBINE RS228S, RS234W, SB235
3018          HC       3
              *

3019          KK    S235
3020          KM  PUEBLO AVE & LONGMORE: STREET FLOW S235 VS. PIPE FLOW P235
3021          KM  1-30" RCP FLOWS WEST ALONG PUEBLO AVE/8TH AVE TO CP236
3022          KM  PIPE CAPACITY = 23 CFS
3023          DT    P235
3024          DI       0      23   10000
3025          DQ       0      23      23
              *

3026          KK   S235W
3027          KM  PUEBLO AVE & LONGMORE: STREET FLOW WEST S235W VS. STREET FLOW SOUTH S235S
3028          KM  SURVEYED INTERSECTION
3029          DT   S235S
3030          DI       0      33     209     529     949    1456    2038    2685    3392    4152
3031          DI    4961
3032          DQ       0       9      82     241     456     719    1023    1363    1736    2138
3033          DQ    2567
              *

3034          KK  RS235W
3035          KM  PUEBLO AVE & LONGMORE: ROUTE STREET FLOW S235W WEST
3036          KM  TO DOBSON RD VIA PUEBLO AVE/8TH AVE
3037          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3038          RS       3    FLOW      -1
3039          RC   0.018   0.018   0.018    2705   0.003
1                                        HEC-1 INPUT                                                    PAGE 78

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

3040          RX       0       0      17      17      63      63      80      80
3041          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3042          KK    P235
3043          KM  PUEBLO AVE & LONGMORE: RETURN DIVERTED PIPE FLOW P235
3044          KM  FOR ROUTING WEST TO CP236
3045          DR    P235
              *

3046          KK   RP235
3047          KM  PUEBLO AVE & LONGMORE: ROUTE PIPE FLOW WEST TO CP236
3048          KM  1-30" RCP FLOWS WEST ALONG PUEBLO AVE/8TH AVE TO DOBSON RD
3049          KM  PIPE CAPACITY = 23 CFS
3050          RK    2685  0.0023   0.013            CIRC     2.5                        2
              *
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```
3051          KK   S229S
3052          KM  BROADWAY RD & DOBSON RD: RETURN DIVERTED STREET FLOW S229S
3053          KM  FOR ROUTING SOUTH TO CP236
3054          DR   S229S
              *

3055          KK  RS229S
3056          KM  BROADWAY RD & DOBSON RD: ROUTE STREET FLOW S229S SOUTH
3057          KM  TO 8TH AVE VIA DOBSON RD
3058          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3059          RS       4    FLOW      -1
3060          RC   0.018   0.018   0.018    2640  0.0026
3061          RX       0       0      21      21     109     109     130     130
3062          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3063          KK    P229
3064          KM  BROADWAY RD & DOBSON RD: RETURN DIVERTED PIPE FLOW P229
3065          KM  FOR ROUTING SOUTH TO CP236
3066          DR    P229
              *

3067          KK   RP229
3068          KM  BROADWAY RD & DOBSON RD: ROUTE PIPE FLOW SOUTH TO CP236
3069          KM  1-27" RCP FLOWS SOUTH ALONG DOBSON RD TO 8TH AVE
3070          KM  PIPE CAPACITY = 13.9 CFS
3071          RK    2640   0.002   0.013            CIRC    2.25                        2
              *

3072          KK   SB236
3073          KM  RUNOFF FROM SUB-BASIN 236
3074          BA   0.246
3075          LG    0.22    0.25    4.80    0.36      46
3076          UC   0.508    0.36
3077          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3078          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE 79

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

3079          KK    D236
3080          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT ADAMS ELEMENTARY SCHOOL.
3081          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
3082          KM  APPROX. 2 ACRE-FEET OF RETENTION.
3083          DT  RET236       2
3084          DI       0   10000
3085          DQ       0   10000
              *

3086          KK   CP236
3087          KM  8TH AVE & DOBSON RD: COMBINE RS229S, RP229, RS235W, RP235, D236
3088          HC       5
              *

3089          KK    S236
3090          KM  8TH AVE & DOBSON RD: STREET FLOW S236 VS. PIPE FLOW P236
3091          KM  1-48" RCP FLOWS SOUTH ALONG DOBSON RD TO CP243
3092          KM  PIPE CAPACITY = 64 CFS
3093          DT    P236
3094          DI       0      64   10000
3095          DQ       0      64      64
              *

3096          KK   S236W
3097          KM  8TH AVE & DOBSON RD: STREET FLOW WEST S236W VS. STREET FLOW SOUTH S236S
3098          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
3099          KM  DOBSON RD IS 6-LANE ARTERIAL, 8TH AVE IS 60-FT ROW COLLECTOR
3100          DT   S236S
3101          DI       0      38     264     744    1397    2199    3132    4183    5344    6605
3102          DI    7959
3103          DQ       0      16     142     436     844    1350    1943    2615    3360    4173
3104          DQ    5049
              *

3105          KK  RS236W
3106          KM  8TH AVE & DOBSON RD: ROUTE STREET FLOW S236W WEST
3107          KM  TO ROOSEVELT RD VIA 8TH AVE
3108          KM  60-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3109          RS       3    FLOW      -1
3110          RC   0.018   0.018   0.018    2650  0.0026
3111          RX       0       0      13      13      47      47      60      60
3112          RY       4    0.33    0.33       0       0    0.33    0.33       4
```

```
                 *

3113             KK   SB237
3114             KM  RUNOFF FROM SUB-BASIN 237
3115             BA   0.251
3116             LG    0.22    0.25    4.80    0.36      44
3117             UC   0.529   0.372
3118             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3119             UA     100
                 *
1                                          HEC-1 INPUT                                          PAGE 80

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


3120             KK   CP237
3121             KM  8TH AVE & ROOSEVELT RD: COMBINE RS236W, SB237
3122             HC       2
                 *

3123             KK    S237
3124             KM  8TH AVE & ROOSEVELT RD: STREET FLOW S237 VS. PIPE FLOW P237
3125             KM  1-24" RCP FLOWS WEST ALONG 8TH AVE TO THE TEMPE CANAL
3126             KM  PIPE CAPACITY = 11 CFS
3127             DT    P237
3128             DI       0      11   10000
3129             DQ       0      11      11
                 *

3130             KK   RS237
3131             KM  8TH AVE & ROOSEVELT RD: ROUTE STREET FLOW CP237 WEST
3132             KM  TO TEMPE CANAL VIA 8TH AVE
3133             KM  60-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3134             RS       1    FLOW      -1
3135             RC   0.018   0.018   0.018     480  0.0002
3136             RX       0       0      13      13      47      47      60      60
3137             RY       4    0.33    0.33       0       0    0.33    0.33       4
                 *

3138             KK    P237
3139             KM  8TH AVE & ROOSEVELT RD: RETURN DIVERTED PIPE FLOW FROM CP237
3140             KM  FOR ROUTING WEST TO CP238
3141             DR    P237
                 *

3142             KK   RP237
3143             KM  8TH AVE & ROOSEVELT RD: ROUTE PIPE FLOW P237 WEST TO CP238
3144             KM  1-24" RCP FLOWS WEST ALONG 8TH AVE TO TEMPE CANAL
3145             KM  PIPE CAPACITY = 11 CFS
3146             RK     305  0.0025   0.013            CIRC       2                       2
                 *

3147             KK   SB238
3148             KM  RUNOFF FROM SUB-BASIN 238
3149             BA   0.098
3150             LG    0.28    0.25    4.80    0.29      12
3151             UC   0.538   0.464
3152             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3153             UA     100
                 *

3154             KK   CP238
3155             KM  TEMPE CANAL & 8TH AVE: COMBINE RS237, SB238, RP237, RC230
3156             HC       4
                 *
1                                          HEC-1 INPUT                                          PAGE 81

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


3157             KK    S231
3158             KM  8TH AVE & RAILROAD: RETURN DIVERTED OVERLAND FLOW S231
3159             KM  FOR ROUTING SOUTH AND WEST TO CP239
3160             DR    S231
                 *

3161             KK   RS231
3162             KM  8TH AVE & RAILROAD: ROUTE OVERLAND FLOW S231 SOUTH AND WEST
3163             KM  THROUGH SUB-BASIN 239 TO CP239
3164             KM  RESIDENTIAL STREET ROUTE, 50-FT ROW, 34-FT F/C TO F/C
3165             RS       8    FLOW      -1
3166             RC   0.018   0.018   0.018    5200  0.0025
3167             RX       0       0       8       8      42      42      50      50
3168             RY       5    0.39    0.33       0       0    0.33    0.39       5
                 *
```

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3169          KK   S232S
3170          KM  8TH AVE & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S232S
3171          KM  FOR ROUTING SOUTH TO CP239
3172          DR   S232S
              *

3173          KK  RS232S
3174          KM  8TH AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S232S SOUTH
3175          KM  TO SOUTHERN AVE VIA COUNTRY CLUB DR
3176          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3177          RS       4    FLOW      -1
3178          RC   0.018   0.018   0.018    2650  0.0028
3179          RX       0       0      21      109     109     130     130
3180          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3181          KK    P232
3182          KM  8TH AVE & COUNTRY CLUB DR: RETURN DIVERTED PIPE FLOW P232
3183          KM  FOR ROUTING SOUTH TO CP239
3184          DR    P232
              *

3185          KK   RP232
3186          KM  8TH AVE & COUNTRY CLUB DR: ROUTE PIPE FLOW P232 SOUTH TO CP239
3187          KM  1-60" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO SOUTHERN AVE
3188          KM  PIPE CAPACITY = 138 CFS
3189          RK    2650  0.0028   0.013            CIRC       5                       2
              *

3190          KK   SB239
3191          KM  RUNOFF FROM SUB-BASIN 239
3192          BA   0.244
3193          PB    3.51
3194          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
3195          KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
3196          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.82 SQUARE MILES
3197          KM  AREAL REDUCTION FACTOR = 0.975
3198          LG    0.22    0.25    4.80    0.36      38
1                                          HEC-1 INPUT                                                          PAGE 82

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

3199          UC   0.563   0.412
3200          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3201          UA     100
              *

3202          KK    D239
3203          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT GUERRERO ROTARY PARK.
3204          KM  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED AREAS.
3205          KM  APPROX. 5 ACRE-FEET OF RETENTION.
3206          DT  RET239       5
3207          DI       0   10000
3208          DQ       0   10000
              *

3209          KK   CP239
3210          KM  SOUTHERN AVE & COUNTRY CLUB DR: COMBINE RS231, RS232S, RP232, D239
3211          HC       4
              *

3212          KK    S239
3213          KM  SOUTHERN AVE & COUNTRY CLUB DR: STREET FLOW S239 VS. PIPE FLOW P239
3214          KM  1-72" RCP FLOWS SOUTH TO CP245.
3215          KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 190 CFS.  PIPE CAPACITY
3216          KM  WAS REDUCED TO 175 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
3217          KM  DUE TO A SURCHARGED FLOW CONDITION AT 190 CFS.
3218          KM  PIPE CAPACITY = 175 CFS
3219          DT    P239
3220          DI       0     175   10000
3221          DQ       0     175     175
              *

3222          KK   S239W
3223          KM  SOUTHERN AVE & COUNTRY CLUB DR: STREET FLOW WEST S239W VS.
3224          KM  STREET FLOW SOUTH S239S
3225          KM  SURVEYED INTERSECTION
3226          DT   S239S
3227          DI       0      56     373    1042    2003    3192    4582    6155    7896    9792
3228          DI   11834
3229          DQ       0      24     161     508    1027    1676    2441    3310    4275    5329
3230          DQ    6466
              *
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3231          KK  RS239W
3232          KM  SOUTHERN AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S239W WEST
3233          KM  TO EXTENSION RD VIA SOUTHERN AVE
3234          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3235          RS       5    FLOW      -1
3236          RC   0.018   0.018   0.018    2615  0.0012
3237          RX       0       0      21      21     109     109     130     130
3238          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                          HEC-1 INPUT                                                    PAGE 83

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


3239          KK   S233S
3240          KM  8TH AVE & EXTENSION RD: RETURN DIVERTED STREET FLOW S233S
3241          KM  FOR ROUTING SOUTH TO CP240
3242          DR   S233S
              *

3243          KK  RS233S
3244          KM  8TH AVE & EXTENSION RD: ROUTE STREET FLOW S233S SOUTH
3245          KM  TO SOUTHERN AVE VIA EXTENSION RD
3246          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3247          RS       3    FLOW      -1
3248          RC   0.018   0.018   0.018    2650  0.0038
3249          RX       0       0      17      17      63      63      80      80
3250          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3251          KK   SB240
3252          KM  RUNOFF FROM SUB-BASIN 240
3253          BA   0.247
3254          LG    0.20    0.25    4.80    0.37      45
3255          UC   0.542   0.392
3256          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3257          UA     100
              *

3258          KK   CP240
3259          KM  SOUTHERN AVE & EXTENSION RD: COMBINE RS233S, RS239W, SB240
3260          HC       3
              *

3261          KK    S240
3262          KM  SOUTHERN AVE & EXTENSION RD: STREET FLOW S240 VS. PIPE FLOW P240
3263          KM  1-34"x53" ELLIPTICAL PIPE FLOWS WEST ALONG SOUTHERN AVE TO CP241
3264          KM  PIPE CAPACITY = 166 CFS
3265          DT    P240
3266          DI       0      30   10000
3267          DQ       0      30      30
              *

3268          KK   S240W
3269          KM  SOUTHERN AVE & EXTENSION RD: STREET FLOW WEST S240W VS.
3270          KM  STREET FLOW SOUTH S240S
3271          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
3272          KM  SOUTHERN AVE IS 6-LANE ARTERIAL, EXTENSION RD IS 80-FT ROW COLLECTOR
3273          DT   S240S
3274          DI       0      30     223     620    1157    1814    2579    3440    4389    5420
3275          DI    6530
3276          DQ       0      22     152     402     735    1139    1607    2132    2709    3334
3277          DQ    4005
              *
1                                          HEC-1 INPUT                                                    PAGE 84

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


3278          KK  RS240W
3279          KM  SOUTHERN AVE & EXTENSION RD: ROUTE STREET FLOW S240W WEST
3280          KM  TO ALMA SCHOOL RD VIA SOUTHERN AVE
3281          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3282          RS       7    FLOW      -1
3283          RC   0.018   0.018   0.018    2620  0.0004
3284          RX       0       0      21      21     109     109     130     130
3285          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3286          KK    P240
3287          KM  SOUTHERN AVE & EXTENSION RD: RETURN DIVERTED PIPE FLOW P240
3288          KM  FOR ROUTING WEST TO CP241
3289          DR    P240
              *
```

```
3290          KK   RP240
3291          KM  SOUTHERN AVE & EXTENSION RD: ROUTE PIPE FLOW WEST TO CP241
3292          KM  1-34"x53" ELLIPTICAL RCP FLOWS WEST ALONG SOUTHERN AVE TO CP241
3293          KM  PIPE AREA = 9.8 SQ. FT.  EQUIVALENT CIRCULAR PIPE DIAMETER = 3.53 FT
3294          KM  PIPE CAPACITY = 166 CFS
3295          RK    2620  0.0009   0.013            CIRC    3.53                      2
              *

3296          KK   S234S
3297          KM  8TH AVE & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S234S
3298          KM  FOR ROUTING SOUTH TO CP241
3299          DR   S234S
              *

3300          KK  RS234S
3301          KM  8TH AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S234S SOUTH
3302          KM  TO SOUTHERN AVE VIA ALMA SCHOOL RD
3303          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3304          RS       4    FLOW      -1
3305          RC   0.018   0.018   0.018    2640  0.0029
3306          RX       0       0      21      21     109     109     130     130
3307          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3308          KK    P234
3309          KM  8TH AVE & ALMA SCHOOL RD: RETURN DIVERTED PIPE FLOW P234
3310          KM  FOR ROUTING SOUTH TO CP241
3311          DR    P234
              *

3312          KK   RP234
3313          KM  8TH AVE & ALMA SCHOOL RD: ROUTE PIPE FLOW SOUTH TO CP241
3314          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO SOUTHERN AVE
3315          KM  PIPE CAPACITY = 106 CFS
3316          RK    2640  0.0029   0.013            CIRC     4.5                      2
              *
1                                          HEC-1 INPUT                                          PAGE 85

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

3317          KK   SB241
3318          KM  RUNOFF FROM SUB-BASIN 241
3319          BA   0.247
3320          LG    0.21    0.25    4.80    0.36      50
3321          UC   0.513    0.32
3322          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3323          UA     100
              *

3324          KK    D241
3325          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT POWELL JUNIOR HIGH AND REDBIRD
3326          KM  ELEMENTARY SCHOOLS.  APPROX. 1 FT OF DEPTH FOR PONDING ON THE GRASSED
3327          KM  AREAS.  APPROX. 14 ACRE-FEET OF RETENTION.
3328          DT  RET241      14
3329          DI       0   10000
3330          DQ       0   10000
              *

3331          KK   CP241
3332          KM  SOUTHERN AVE & ALMA SCHOOL RD: COMBINE RS234S, RP234, RS240W, RP240, D241
3333          HC       5
              *

3334          KK    S241
3335          KM  SOUTHERN AVE & ALMA SCHOOL RD: STREET FLOW S241 VS. PIPE FLOW P241
3336          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD TO CP248
3337          KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 90 CFS.  PIPE CAPACITY
3338          KM  WAS REDUCED TO 83 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
3339          KM  DUE TO A SURCHARGED FLOW CONDITION AT 90 CFS.
3340          DT    P241
3341          DI       0      83   10000
3342          DQ       0      83      83
              *

3343          KK   S241W
3344          KM  SOUTHERN AVE & ALMA SCHOOL RD: STREET FLOW WEST S241W VS.
3345          KM  STREET FLOW SOUTH S241S
3346          KM  SURVEYED INTERSECTION
3347          DT   S241S
3348          DI       0       1      89     592    1589    2946    4607    6538    8718   11127
3349          DI   13748   16570
3350          DQ       0       1      64     410    1113    2062    3224    4576    6103    7792
3351          DQ    9630   11611
              *
```

```
3352          KK  RS241W
3353          KM  SOUTHERN AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S241W WEST
3354          KM  TO LONGMORE VIA SOUTHERN AVE
3355          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3356          RS       3    FLOW      -1
3357          RC   0.018   0.018   0.018    1990   0.002
3358          RX       0       0      21      21     109     109     130     130
3359          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                        HEC-1 INPUT                                                    PAGE 86

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

3360          KK   S235S
3361          KM  PUEBLO AVE & LONGMORE: RETURN DIVERTED STREET FLOW S235S
3362          KM  FOR ROUTING SOUTH TO CP242
3363          DR   S235S
              *

3364          KK  RS235S
3365          KM  PUEBLO AVE & LONGMORE: ROUTE STREET FLOW S235S SOUTH
3366          KM  TO SOUTHERN AVE VIA LONGMORE
3367          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3368          RS       5    FLOW      -1
3369          RC   0.018   0.018   0.018    3050   0.001
3370          RX       0       0      17      17      63      63      80      80
3371          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3372          KK   SB242
3373          KM  RUNOFF FROM SUB-BASIN 242
3374          BA   0.246
3375          PB    3.51
3376          KM  AREAL REDUCTION BASED ON AREA APRROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
3377          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
3378          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.73 SQUARE MILES
3379          KM  AREAL REDUCTION FACTOR = 0.975
3380          LG    0.21    0.25    4.80    0.37      55
3381          UC   0.546     0.4
3382          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3383          UA     100
              *

3384          KK   CP242
3385          KM  SOUTHERN AVE & LONGMORE: COMBINE RS235S, RS241W, SB242
3386          HC       3
              *

3387          KK    S242
3388          KM  SOUTHERN AVE & LONGMORE: STREET FLOW S242 VS. PIPE FLOW P242
3389          KM  1-42" RCP FLOWS WEST ALONG SOUTHERN AVE TO CP243
3390          KM  PIPE CAPACITY = 50 CFS
3391          DT    P242
3392          DI       0      50   10000
3393          DQ       0      50      50
              *

3394          KK   S242W
3395          KM  SOUTHERN AVE & LONGMORE: STREET FLOW WEST S242W VS. STREET FLOW SOUTH S242S
3396          KM  NOT A SURVEYED INTERSECTION; TYPICAL STREET SECTIONS USED
3397          KM  SOUTHERN AVE IS 6-LANE ARTERIAL, LONGMORE IS 80-FT ROW COLLECTOR
3398          DT   S242S
3399          DI       0      27     221     644    1225    1941    2777    3721    4766    5903
3400          DI    7127
3401          DQ       0      11      79     208     381     591     834    1106    1406    1730
3402          DQ    2078
              *
1                                        HEC-1 INPUT                                                    PAGE 87

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

3403          KK  RS242W
3404          KM  SOUTHERN AVE & LONGMORE: ROUTE STRET FLOW S242W WEST
3405          KM  TO DOBSON RD VIA SOUTHERN AVE
3406          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3407          RS       5    FLOW      -1
3408          RC   0.018   0.018   0.018    3330  0.0025
3409          RX       0       0      21      21     109     109     130     130
3410          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3411          KK    P242
```

```
3412          KM  SOUTHERN AVE & LONGMORE: RETURN DIVERTED PIPE FLOW P242
3413          KM  FOR ROUTING WEST TO CP243
3414          DR    P242
              *

3415          KK   RP242
3416          KM  SOUTHERN AVE & LONGMORE: ROUTE PIPE FLOW P242 WEST TO CP243
3417          KM  1-42" RCP FLOWS WEST ALONG SOUTHERN AVENUE TO DOBSON RD
3418          KM  PIPE CAPACITY = 50 CFS
3419          RK    3330  0.0025   0.013            CIRC     3.5                      2
              *

3420          KK   S236S
3421          KM  8TH AVE & DOBSON RD: RETURN DIVERTED STREET FLOW S236S
3422          KM  FOR ROUTING SOUTH TO CP243
3423          DR   S236S
              *

3424          KK  RS236S
3425          KM  8TH AVE & DOBSON RD: ROUTE STREET FLOW S236S SOUTH
3426          KM  TO SOUTHERN AVE VIA DOBSON RD
3427          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3428          RS       4    FLOW      -1
3429          RC   0.018   0.018   0.018    2640   0.002
3430          RX       0       0      21      21     109     109     130     130
3431          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3432          KK    P236
3433          KM  8TH AVE & DOBSON RD: RETURN DIVERTED PIPE FLOW P236
3434          KM  FOR ROUTING SOUTH TO CP243
3435          DR    P236
              *

3436          KK   RP236
3437          KM  8TH AVE & DOBSON RD: ROUTE PIPE FLOW SOUTH TO CP243
3438          KM  1-48" RCP FLOWS SOUTH ALONG DOBSON RD TO SOUTHERN AVE
3439          KM  PIPE CAPACITY = 64 CFS
3440          RK    2640   0.002   0.013            CIRC       4                      2
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3441          KK   SB243
3442          KM  RUNOFF FROM SUB-BASIN 243
3443          BA   0.281
3444          LG    0.21    0.25    4.80    0.37      55
3445          UC   0.642   0.466
3446          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3447          UA     100
              *

3448          KK   CP243
3449          KM  SOUTHERN AVE & DOBSON RD: COMBINE RS236S, RP236, RS242W, RP242, SB243
3450          HC       5
              *

3451          KK    S243
3452          KM  SOUTHERN AVE & DOBSON RD: STREET FLOW S243 VS. PIPE FLOW P243
3453          KM  1-66" RCP FLOWS WEST ALONG SOUTHERN AVE TO CP244
3454          KM  MANNING'S EQUATION YIELDS PIPE CAPACITY = 130 CFS.  PIPE CAPACITY
3455          KM  WAS REDUCED TO 125 CFS TO ELIMINATE A TIME STEP CONVERGENCE WARNING
3456          KM  DUE TO A SURCHARGED FLOW CONDITION AT 130 CFS.
3457          DT    P243
3458          DI       0     125   10000
3459          DQ       0     125     125
              *

3460          KK   S243W
3461          KM  SOUTHERN AVE & DOBSON RD: STREET FLOW WEST S243W VS. STREET FLOW SOUTH S243S
3462          KM  SURVEYED INTERSECTION
3463          DT   S243S
3464          DI       0      26     283     893    1747    2809    4054    5466    7028    8734
3465          DI   10570
3466          DQ       0       3     111     418     863    1424    2086    2840    3677    4593
3467          DQ    5580
              *

3468          KK  RS243W
3469          KM  SOUTHERN AVE & DOBSON RD: ROUTE STREET FLOW S243W WEST
3470          KM  TO TEMPE CANAL VIA SOUTHERN AVE
3471          KM  5-LANE ARTERIAL STREET - USE 6-LANE ARTERIAL STREET ROUTING SECTION
3472          RS       2    FLOW      -1
```

```
3473          RC   0.018   0.018   0.018    1620  0.0007
3474          RX       0       0      21      21     109     109     130     130
3475          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3476          KK   SB244
3477          KM  RUNOFF FROM SUB-BASIN 244
3478          BA   0.224
3479          LG    0.22    0.25    4.80    0.37      47
3480          UC   0.558   0.365
3481          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3482          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3483          KK  CP244A
3484          KM  TEMPE CANAL & SOUTHERN AVE: COMBINE RS243W, SB244, CP238
3485          HC       3
              *

3486          KK  BS244A
3487          KM  RETENTION STORAGE ALONG TEMPE CANAL NORTH OF SOUTHERN AVE.  CONTOUR AREAS
3488          KM  MEASURED FOR RETENTION VOLUME WERE REDUCED BY APPROX. BUILDING SQUARE
3489          KM  FOOTAGE.  OUTFLOW FROM UNEVEN WEIR CALCULATIONS BASED ON TEMPE CANAL
3490          KM  AND SOUTHERN AVE SURVEYED ELEVATIONS.
3491          RS       1    STOR       0
3492          SA     2.3     6.4     9.2    30.3      53
3493          SE    1196    1198    1199    1200    1201
3494          SQ       0       0       0     400    3198
              *

3495          KK    P243
3496          KM  SOUTHERN AVE & DOBSON RD: RETURN DIVERTED PIPE FLOW P243
3497          KM  FOR ROUTING WEST TO CP244
3498          DR    P243
              *

3499          KK   RP243
3500          KM  SOUTHERN AVE & DOBSON RD: ROUTE PIPE FLOW WEST TO CP244
3501          KM  1-66" RCP FLOWS WEST ALONG SOUTHERN AVE TO TEMPE CANAL
3502          KM  PIPE CAPACITY = 125 CFS
3503          RK    1620  0.0015   0.013            CIRC     5.5                        2
              *

3504          KK   CP244
3505          KM  TEMPE CANAL & SOUTHERN AVE: COMBINE BS244A, RP243.  INDICATES FLOW CROSSING
3506          KM  SOUTHERN AVE TO THE SOUTH.
3507          HC       2
              *

3508          KK   RC244
3509          KM  TEMPE CANAL & SOUTHERN AVE: ROUTE FLOW CP244 ALONG TEMPE CANAL TO CP251
3510          KM  VIA AN UNLINED CHANNEL ADJACENT TO DESERT SAMARITAN HOSPITAL.
3511          RS       1    FLOW      -1
3512          RC    0.03    0.03    0.03    1400   0.003
3513          RX       0       0      20      32      47      57      72      72
3514          RY     5.5       5       4       0       0       4       6     6.5
              *

3515          KK  RC244B
3516          KM  TEMPE CANAL & SOUTHERN AVE: ROUTE FLOW RC244 ALONG TEMPE CANAL TO CP251
3517          KM  CHANNEL MODELED AS RC244 FEEDS INTO TWO (2)120"X72" CBC.  THE BOX CULVERT
3518          KM  OUTLETS TO A SHORT LINED CHANNEL WHICH MERGES WITH THE ADOT CHANNEL.
3519          RS       1    FLOW      -1
3520          RC   0.013   0.013   0.013    1150   0.003
3521          RX       0       0       0       0      20      20      20      20
3522          RY       6       5       3       0       0       3       5       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3523          KK   S239S
3524          KM  SOUTHERN AVE & COUNTRY CLUB DR: RETURN DIVERTED STREET FLOW S239S
3525          KM  FOR ROUTING SOUTH TO CP245
3526          DR   S239S
              *

3527          KK  RS239S
3528          KM  SOUTHERN AVE & COUNTRY CLUB DR: ROUTE STREET FLOW S239S SOUTH
3529          KM  TO ADOT US60 CHANNEL VIA COUNTRY CLUB DR
```

```
3530    KM  6-LANE ARTERIAL STREET ROUTING SECTION
3531    RS       3    FLOW      -1
3532    RC   0.018   0.018   0.018    2310  0.0028
3533    RX       0       0      21      21     109     109     130     130
3534    RY       4    0.14    0.14       0       0    0.14    0.14       4
        *

3535    KK   SB245
3536    KM  RUNOFF FROM SUB-BASIN 245
3537    BA   0.227
3538    PB    3.51
3539    KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH AND
3540    KM  EAST, ALMA SCHOOL RD TO THE WEST, AND US60 TO THE SOUTH.
3541    KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.82 SQUARE MILES
3542    KM  AREAL REDUCTION FACTOR = 0.975
3543    LG    0.15    0.26    4.80    0.38      59
3544    UC     0.5   0.357
3545    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3546    UA     100
        *

3547    KK   P146A
3548    KM  ADOT US60 CHANNEL AT RAILROAD, HERITAGE PARK BASIN:
3549    KM  EXISTING 54" RCP, LENGTH=178',  PASSES ADOT CHANNEL FLOW UNDER THE
3550    KM  RAILROAD.  INFLOW HYDROGRAPH BASED ON PIPE CAPACITY AT MAXIMUM HEADWATER
3551    KM  USING DODSON HYDROCALC SOFTWARE.  PIPE CAPACITY AT MAXIMUM HEADWATER
3552    KM  ELEVATION, EQUAL TO THE UPSTREAM SPILLWAY ELEVATION OF 1213 FT
3553    KM  IS APPROXIMATELY 175 CFS.
3554    DR   P146A
        *

3555    KK  RC146A
3556    KM  ADOT US60 CHANNEL & RAILROAD: ROUTE PIPE FLOW FROM CENTER STREET
3557    KM  WEST WITHIN THE ADOT CHANNEL TO CP245.  CONCRETE-LINED CHANNEL.
3558    KM  CHANNEL SECTION BASED ON SURVEY AND AS-BUILT.
3559    RS       3    FLOW      -1
3560    RC   0.014   0.014   0.014    2565  0.0005
3561    RX       0       1       2      16      48      62      63      64
3562    RY      10       7       7       0       0       7       7      10
        *
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3563    KK   SB252
3564    KM  RUNOFF FROM SUB-BASIN 252
3565    KM  A STORM DRAIN AND PUMP SYSTEM COLLECTS RUNOFF FROM US60 AND PUMPS IT
3566    KM  INTO THE ADOT CHANNEL NORTH OF THE FREEWAY.
3567    BA    0.06
3568    LG    0.05    0.25    4.80    0.25      90
3569    UC   0.204   0.207
3570    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3571    UA     100
        *

3572    KK    P239
3573    KM  SOUTHERN AVE & COUNTRY CLUB DR: RETURN DIVERTED PIPE FLOW P239
3574    KM  FOR ROUTING SOUTH TO CP245
3575    DR    P239
        *

3576    KK   RP239
3577    KM  SOUTHERN AVE & COUNTRY CLUB DR: ROUTE PIPE FLOW SOUTH TO CP245
3578    KM  1-72" RCP FLOWS SOUTH ALONG COUNTRY CLUB DR TO CP245
3579    KM  PIPE CAPACITY = 175 CFS
3580    RK    2250   0.002   0.013            CIRC       6                       2
        *

3581    KK   CP245
3582    KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: COMBINE RC146A, RS239S, RP239
3583    KM  SB245, AND SB252
3584    HC       5
        *

3585    KK    S245
3586    KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: CHANNEL FLOW S245 VS. PIPE FLOW P245
3587    KM  1-72" RCP FLOWS WEST ALONG THE NORTH SIDE OF THE ADOT CHANNEL TO CP247A
3588    KM  PIPE CAPACITY = 190 CFS
3589    DT    P245
3590    DI       0     190   10000
3591    DQ       0     190     190
        *

3592    KK   RC245
```

```
3593          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: ROUTE CHANNEL FLOW FROM COUNTRY CLUB
3594          KM  DR WEST WITHIN THE ADOT CHANNEL TO CP246.  CONCRETE-LINED CHANNEL.
3595          KM  CHANNEL SECTION APPROXIMATED FROM SURVEY AND AS-BUILT.
3596          RS       2    FLOW      -1
3597          RC   0.014   0.014   0.014    2650  0.0005
3598          RX       0       1       2      16      48      62      63      64
3599          RY      10       7       7       0       0       7       7      10
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


3600          KK   S240S
3601          KM  SOUTHERN AVE & EXTENSION RD: RETURN DIVERTED STREET FLOW S240S
3602          KM  FOR ROUTING SOUTH TO CP246
3603          DR   S240S
              *

3604          KK  RS240S
3605          KM  SOUTHERN AVE & EXTENSION RD: ROUTE STREET FLOW S240S SOUTH
3606          KM  TO ADOT US60 CHANNEL VIA EXTENSION RD
3607          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3608          RS       4    FLOW      -1
3609          RC   0.018   0.018   0.018    2460  0.0004
3610          RX       0       0      17      17      63      63      80      80
3611          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3612          KK   SB246
3613          KM  RUNOFF FROM SUB-BASIN 246
3614          BA   0.234
3615          LG    0.14    0.25    4.80     0.4      68
3616          UC   0.508   0.351
3617          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3618          UA     100
              *

3619          KK   CP246
3620          KM  ADOT US60 CHANNEL & EXTENSION RD: COMBINE RS240S, RC245, SB246
3621          HC       3
              *

3622          KK   SB247
3623          KM  RUNOFF FROM SUB-BASIN 247
3624          BA   0.131
3625          LG    0.13    0.18    4.80    0.39      26
3626          UC   0.429   0.314
3627          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3628          UA     100
              *

3629          KK   SB248
3630          KM  RUNOFF FROM SUB-BASIN 248
3631          BA   0.102
3632          LG     0.1    0.27    4.80     0.4      67
3633          UC   0.458    0.38
3634          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3635          UA     100
              *

3636          KK    P245
3637          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: RETURN DIVERTED PIPE FLOW P245
3638          KM  FOR ROUTING WEST TO CP247A AT FIESTA LAKES GOLF COURSE
3639          DR    P245
              *
1                                          HEC-1 INPUT                                                PAGE 93

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


3640          KK   RP245
3641          KM  ADOT US60 CHANNEL & COUNTRY CLUB DR: ROUTE PIPE FLOW WEST TO CP247A
3642          KM  1-72" RCP FLOW WEST TO FIESTA LAKES GOLF COURSE
3643          KM  PIPE CAPACITY = 190 CFS
3644          RK    2730   0.002   0.013            CIRC       6                       2
              *

3645          KK   CP247
3646          KM  FIESTA LAKES GOLF COURSE: COMBINE SB247, SB248, RP245, CP246
3647          HC       4
              *

3648          KK   BS247
3649          KM  FIESTA LAKES GOLF COURSE: RUNOFF FROM THE QUARTER SQUARE-MILE BOUNDED
```

```
3650          KM  BY SOUTHERN AVE, US60, ALMA SCHOOL RD, AND EXTENSION RD IS CONVEYED TO
3651          KM  THE GOLF COURSE BY A STORM DRAIN SYSTEM.  A 72" RCP WITH FLOW FROM
3652          KM  COUNTRY CLUB DR ALSO OUTLETS TO THE GOLF COURSE.  THE GOLF COURSE IS
3653          KM  ADJACENT TO THE ADOT CHANNEL, AND A CONCRETE SPILLWAY DIRECTS FLOW
3654          KM  BETWEEN THE LAKE AND CHANNEL.  A CHANNEL BLOCK WITH A GATE IS IMMEDIATELY
3655          KM  DOWNSTREAM OF THE SPILLWAY WITHIN THE ADOT CHANNEL, AND THE APPROXIMATE
3656          KM  CAPACITY OF THE GATE OPENING IS MODELED AS THE LOW FLOW OUT OF THE
3657          KM  BASIN BEFORE BASIN FLOWS OVERTOP THE SPILLWAY.  GATE CAPACITY WAS
3658          KM  CALCULATED USING THE ORIFICE EQUATION, WITH HEAD DEPTH BASED ON THE
3659          KM  RETENTION BASIN SPILLWAY ELEVATION.  GATE DIMENSIONS WERE APPROXIMATED
3660          KM  FROM FIELD OBSERVATION AND ADOT AS-BUILT PLANS FOR THE CHANNEL.
3661          KM  RETENTION VOLUME AND CHANNEL GEOMETRY WAS APPROXIMATED USING AREA AND
3662          KM  ELEVATION INFORMATION FROM 10-FT CONTOUR INTERVAL TOPO MAPPING PROVIDED
3663          KM  BY THE FLOOD CONTROL DISTRICT, AND AS-BUILT PLANS FOR THE ADOT CHANNEL.
3664          RS       1    STOR       0
3665          SA     2.5       8      14      18      22
3666          SE    1200    1203    1206    1208    1210
3667          SQ     180     180     180    1275    4497
              *

3668          KK   RC247
3669          KM  ADOT US60 CHANNEL & FIESTA LAKES GOLF CLUB: ROUTE CHANNEL FLOW FROM
3670          KM  EXTENSION RD WEST WITHIN THE ADOT CHANNEL TO CP248.  CONCRETE-LINED
3671          KM  CHANNEL.  CHANNEL SECTION APPROXIMATED FROM SURVEY AND AS-BUILT.
3672          RS       1    FLOW      -1
3673          RC   0.014   0.014   0.014    2390  0.0011
3674          RX       0       1       2      16      48      62      63      64
3675          RY      10       7       7       0       0       7       7      10
              *

3676          KK   S241S
3677          KM  SOUTHERN AVE & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S241S
3678          KM  FOR ROUTING SOUTH TO CP248
3679          DR   S241S
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3680          KK  RS241S
3681          KM  SOUTHERN AVE & ALMA SCHOOL RD: ROUTE STREET FLOW S241S SOUTH
3682          KM  TO ADOT US60 CHANNEL VIA ALMA SCHOOL RD
3683          KM  8-LANE ARTERIAL STREET - USE 6-LANE ARTERIAL STREET ROUTING SECTION
3684          RS       3    FLOW      -1
3685          RC   0.018   0.018   0.018    2290  0.0021
3686          RX       0       0      21      21     109     109     130     130
3687          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3688          KK    P241
3689          KM  SOUTHERN AVE & ALMA SCHOOL RD: RETURN DIVERTED PIPE FLOW P241
3690          KM  FOR ROUTING SOUTH TO CP248
3691          DR    P241
              *

3692          KK   RP241
3693          KM  SOUTHERN AVE & ALMA SCHOOL RD: ROUTE PIPE FLOW SOUTH TO CP248
3694          KM  1-54" RCP FLOWS SOUTH ALONG ALMA SCHOOL RD, AND OUTLETS TO THE
3695          KM  ADOT CHANNEL NORTH OF US60.  PIPE CAPACITY = 83 CFS
3696          RK    2360  0.0021   0.013            CIRC     4.5                       2
              *

3697          KK   SB253
3698          KM  RUNOFF FROM SUB-BASIN 253
3699          KM  A STORM DRAIN AND PUMP SYSTEM COLLECTS RUNOFF FROM US60 AND PUMPS IT
3700          KM  INTO THE ADOT CHANNEL NORTH OF THE FREEWAY.
3701          BA   0.052
3702          LG    0.05    0.25     4.8    0.25      90
3703          UC    0.55   0.746
3704          UA       0       5      16      30      65      77      84      90      94      97
3705          UA     100
              *

3706          KK   CP248
3707          KM  ADOT US60 CHANNEL AT ALMA SCHOOL RD: COMBINE RS241S, RP241, RC247, SB253
3708          HC       4
              *

3709          KK   RC248
3710          KM  ADOT US60 CHANNEL & ALMA SCHOOL RD: ROUTE CHANNEL FLOW TO CP249
3711          KM  CONCRETE-LINED CHANNEL.  CHANNEL SECTION APPROXIMATED FROM SURVEY
3712          KM  AND AS-BUILT.
3713          RS       1    FLOW      -1
3714          RC   0.014   0.014   0.014    1985   0.001
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3715          RX       0       1       2      16      48      62      63      64
3716          RY       7       7       7       0       0       7       7       7
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


3717          KK   S242S
3718          KM  SOUTHERN AVE & LONGMORE: RETURN DIVERTED STREET FLOW S242S
3719          KM  FOR ROUTING SOUTH TO CP249
3720          DR   S242S
              *

3721          KK  RS242S
3722          KM  SOUTHERN AVE & LONGMORE: ROUTE STREET FLOW S242S SOUTH
3723          KM  TO ADOT US60 CHANNEL VIA LONGMORE
3724          KM  80-FT RIGHT-OF-WAY COLLECTOR STREET ROUTING SECTION
3725          RS       8    FLOW      -1
3726          RC   0.018   0.018   0.018    2405  0.0002
3727          RX       0       0      17      17      63      63      80      80
3728          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

3729          KK   SB249
3730          KM  RUNOFF FROM SUB-BASIN 249
3731          BA   0.176
3732          PB    3.51
3733          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY SPRR TO THE NORTH, TEMPE
3734          KM  CANAL TO THE WEST, ALMA SCHOOL RD TO THE EAST, AND US60 TO THE SOUTH.
3735          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 2.73 SQUARE MILES
3736          KM  AREAL REDUCTION FACTOR = 0.975
3737          LG     0.1    0.26    4.80    0.41      75
3738          UC   0.588   0.415
3739          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3740          UA     100
              *

3741          KK    D249
3742          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT RETENTION BASIN IN SOUTHWEST
3743          KM  CORNER OF FIESTA MALL.  RETENTION VOLUME APPROXIMATED USING 10-FOOT
3744          KM  INTERVAL TOPO MAPPING FROM THE FLOOD CONTROL DISTRICT.
3745          KM  APPROX. RETENTION VOLUME = 20 ACRE-FEET
3746          DT  RET249      20
3747          DI       0   10000
3748          DQ       0   10000
              *

3749          KK   CP249
3750          KM  ADOT US60 CHANNEL AT LONGMORE: COMBINE RS242S, RC248, D249
3751          HC       3
              *

3752          KK   RC249
3753          KM  ADOT US60 CHANNEL & LONGMORE: ROUTE CHANNEL FLOW TO CP250.
3754          KM  CONCRETE-LINED CHANNEL.  CHANNEL SECTION APPROXIMATED FROM SURVEY AND
3755          KM  AS-BUILT.
3756          RS       2    FLOW      -1
3757          RC   0.014   0.014   0.014    3325 0.00075
3758          RX       0       1       2      16      48      62      63      64
3759          RY       7       7       7       0       0       7       7       7
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


3760          KK   S243S
3761          KM  SOUTHERN AVE & DOBSON RD: RETURN DIVERTED STREET FLOW S243S
3762          KM  FOR ROUTING SOUTH TO CP250
3763          DR   S243S
              *

3764          KK  RS243S
3765          KM  SOUTHERN AVE & DOBSON RD: ROUTE STREET FLOW S243S SOUTH
3766          KM  TO ADOT US60 CHANNEL VIA DOBSON RD
3767          KM  6-LANE ARTERIAL STREET ROUTING SECTION
3768          RS       4    FLOW      -1
3769          RC   0.018   0.018   0.018    2280  0.0007
3770          RX       0       0      21      21     109     109     130     130
3771          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3772          KK   SB250
3773          KM  RUNOFF FROM SUB-BASIN 250
```

```
3774          BA   0.296
3775          LG    0.18    0.25    4.80    0.36      54
3776          UC   0.504   0.315
3777          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3778          UA     100
              *

3779          KK    D250
3780          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT MESA COMMUNITY COLLEGE.
3781          KM  APPROX. VOLUME BASED ON 80% OF REQUIRED RETENTION VOLUME FOR SITE.
3782          KM  APPROX. 15 ACRE-FEET OF RETENTION.
3783          DT  RET250      15
3784          DI       0   10000
3785          DQ       0   10000
              *

3786          KK   SB254
3787          KM  RUNOFF FROM SUB-BASIN 254
3788          KM  A STORM DRAIN AND PUMP SYSTEM COLLECTS RUNOFF FROM US60 AND PUMPS IT
3789          KM  INTO THE ADOT CHANNEL NORTH OF THE FREEWAY.
3790          BA   0.075
3791          LG    0.05    0.25     4.8    0.25      90
3792          UC   0.517   0.677
3793          UA       0       5      16      30      65      77      84      90      94      97
3794          UA     100
              *

3795          KK   CP250
3796          KM  ADOT US60 CHANNEL AT DOBSON RD: COMBINE RS243S, RC249, D250, SB254
3797          HC       4
              *
1                                        HEC-1 INPUT                                        PAGE 97

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

3798          KK   RC250
3799          KM  ADOT US60 CHANNEL & DOBSON RD: ROUTE CHANNEL FLOW TO CP251
3800          KM  CHANNEL SECTION APPROXIMATED FROM SURVEY AND AS-BUILT.
3801          KM  CONCRETE-LINED CHANNEL.
3802          RS       1    FLOW      -1
3803          RC   0.014   0.014   0.014    1770  0.0014
3804          RX       0       1       2      16      48      62      63      64
3805          RY       7       7       7       0       0       7       7       7
              *

3806          KK   SB251
3807          KM  RUNOFF FROM SUB-BASIN 251
3808          BA   0.134
3809          LG     0.1    0.25    4.80    0.43      80
3810          UC   0.546   0.442
3811          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3812          UA     100
              *

3813          KK    D251
3814          KM  DIVERT OF AVAILABLE RETENTION VOLUME AT DESERT SAMARITIAN HOSPITAL.
3815          KM  APPROX. VOLUME BASED ON 80% OF REQUIRED RETENTION VOLUME FOR SITE.
3816          KM  APPROX. 10 ACRE-FEET OF RETENTION.
3817          DT  RET251      10
3818          DI       0   10000
3819          DQ       0   10000
              *

3820          KK   CP251
3821          KM  ADOT US60 CHANNEL & MESA DRAIN: COMBINE RC244, RC250, D251
3822          KM  ADOT CHANNEL COMBINES WITH MESA DRAIN IMMEDIATELY NORTH AND EAST OF
3823          KM  TEMPE CANAL AND US60.
3824          HC       3
              *

3825          KK   SB201
3826          KM  RUNOFF FROM SUB-BASIN 201
3827          KM  SUBDIVISION STREET RUNOFF FLOWS PREDOMINANTLY NORTH AND EAST
3828          KM  TOWARD THE GOLF COURSE.
3829          BA    0.09
3830          PB    3.49
3831          KM  AREAL REDUCTION BASED ON AREA APPROX. BOUNDED BY TEMPE CANAL TO THE
3832          KM  NORTH AND WEST, SPRR TO THE SOUTH, AND COUNTRY CLUB DR TO THE EAST.
3833          KM  TOTAL POINT RAINFALL = 3.60 INCHES, AREA REDUCED = 3.73 SQUARE MILES
3834          KM  AREAL REDUCTION FACTOR = 0.969
3835          LG    0.23    0.14    4.65    0.44      22
3836          UC   0.154   0.068
3837          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3838          UA     100
```

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                 *
1                                    HEC-1 INPUT                                                    PAGE 98

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

3839             KK   S204N
3840             KM  8TH ST & ALMA SCHOOL RD: RETURN DIVERTED STREET FLOW S204N
3841             KM  FOR ROUTING NORTH TO CP205
3842             DR   S204N
                 *

3843             KK  RS204N
3844             KM  8TH ST & ALMA SCHOOL RD: ROUTE STREET FLOW S204N NORTH
3845             KM  TO TEMPE CANAL VIA ALMA SCHOOL RD
3846             KM  6-LANE ARTERIAL STREET ROUTING SECTION
3847             RS       2    FLOW      -1
3848             RC   0.018   0.018   0.018    2115   0.004
3849             RX       0       0      21      21     109     109     130     130
3850             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *

3851             KK   SB205
3852             KM  RUNOFF FROM SUB-BASIN 205
3853             BA   0.213
3854             LG    0.20    0.25    4.45    0.46      44
3855             UC   0.471   0.445
3856             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3857             UA     100
                 *

3858             KK   CP205
3859             KM  TEMPE CANAL & ALMA SCHOOL RD: COMBINE RS204N, SB205
3860             HC       2
                 *

3861             KK     CPD
3862             KM  COMBINE CPC, CP251, SB201, AND CP205 IN ORDER TO REDUCE THE NUMBER OF
3863             KM  HYDROGRAPHS IN THE MODEL.  CPD IS NOT REPRESENTATIVE OF A PHYSICAL
3864             KM  CONCENTRATION POINT.
3865             HC       4
                 *
                 *  ********************************************************************
                 *  *                                                                  *
                 *  * 300 SERIES WATERSHED -                                           *
                 *  * BOUNDED TO THE NORTH BY US60 (SUPERSTITION) FREEWAY, TO THE EAST  *
                 *  * BY THE SOUTHERN-PACIFIC RAILROAD, TO THE SOUTH BY WESTERN CANAL,  *
                 *  * AND TO THE WEST BY PRICE ROAD.                                   *
                 *  *                                                                  *
                 *  ********************************************************************
                 *
                 *   CHANGED: START TIME AND DATE, NO. OF TIME STEPS FROM 2000 TO 600,
                 *   ADDED: NDXMIN OF 6 TO ALL RK RECORDS, RECORDS FOR IFDIVR & CP402
                 *   MIKE DUNCAN   FCD   05-04-04
                 *
1                                    HEC-1 INPUT                                                    PAGE 99

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

3866             KK   SB401
3867             KM  RUNOFF FROM SUB-BASIN 401
3868             BA   0.228
3869             IN      15
3870             PB    3.43
3871             KM  AREAL REDUCTION BASED ON THE 300 AND 400 SERIES WATERSHEDS.THE AREA IS BOUNDED
3872             KM  BY THE US60 TO THE NORTH,SPRR THE EAST,WESTERN CANAL ON THE SOUTH AND SR 101
3873             KM  ON THE WEST.
3874             KM  TOTAL POINT RAINFALL = 3.600 INCHES, AREA REDUCED = 6.77
3875             KM  AREAL REDUCTION FACTOR = 0.953
                 *
3876             PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
3877             PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
3878             PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
3879             PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
3880             PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
3881             PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
3882             PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
3883             PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
3884             PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
3885             PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
3886             LG    0.26    0.25    4.80    0.41      42
3887             UC   1.229   0.988
3888             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3889             UA     100
```

```
                 *
3890             KK    D401
3891             KM  DIVERT RETENTION VOLUME FOR OPEN SPACE LOCATED ALONG BASELINE RD
3892             KM  APPROXIMATELY 1 FT OF RETENTION DEPTH
3893             KM  TOTAL VOLUME = 33 ACRE-FT
3894             DT  RET401      33
3895             DI       0    5000   10000
3896             DQ       0    5000   10000
                 *

3897             KK   RS401
3898             KM  BASELINE RD & COUNTRY CLUB: ROUTE STREET FLOW CP401 TO CP301 VIA BASELINE RD
3899             KM  6-LANE ARTERIAL
3900             RS       3    FLOW      -1
3901             RC   0.018   0.018   0.018    2340  0.0006
3902             RX       0       0      21      21     109     109     130     130
3903             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *

3904             KK   SB301
3905             KM  RUNOFF FROM SUB-BASIN 301
3906             BA   0.230
3907             LG    0.26    0.25    4.80    0.41      42
3908             UC   1.229   0.988
3909             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3910             UA     100
                 *
1                                          HEC-1 INPUT                                          PAGE100

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

3911             KK   CP301
3912             KM  BASELINE RD & EXTENTION RD: COMBINE SB301,RS401
3913             HC       2
                 *

3914             KK   S301W
3915             KM  BASELINE RD & EXTENSION RD: STREET FLOW WEST S301W VS. STREET FLOW SOUTH S301S
3916             KM  NOT A SURVEYED INTERSECTION; TYPICAL CROSS SECTION USED
3917             KM  BASELINE RD IS A 4-LANE ARTERIAL, EXTENSION RD IS AN 80-FT RIGHT-OF-WAY
3918             KM  COLLECTOR
3919             DT   S301S
3920             DI       0      42     354    1052    2016    3206    4596
3921             DQ       0      11      79     208     381     591     833
                 *

3922             KK  RS301W
3923             KM  BASELINE RD & EXTENSION RD: ROUTE STREET FLOW S301W TO CP302 VIA BASELINE RD
3924             KM  6-LANE ARTERIAL
3925             RS       9    FLOW      -1
3926             RC   0.018   0.018   0.018    3350  0.0006
3927             RX       0       0      21      21     109     109     130     130
3928             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *

3929             KK   SB302
3930             KM  RUNOFF FROM SUB-BASIN 302
3931             BA   0.260
3932             LG    0.22    0.25    4.80    0.37      44
3933             UC   1.017   0.832
3934             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3935             UA     100
                 *

3936             KK   CP302
3937             KM  BASELINE RD & ALMA SCHOOL RD: COMBINE SB302,RS301W
3938             HC       2
                 *

3939             KK    S302
3940             KM  BASELINE RD & ALMA SCHOOL RD: STREET FLOW S302 VS. PIPE FLOW P302
3941             KM  48" RCP PIPE - CAPACITY = 29CFS
3942             DT    P302
3943             DI       0      29   10000
3944             DQ       0      29      29
                 *

3945             KK   S302W
3946             KM  BASELINE RD & ALMA SCHOOL RD:
3947             KM  STREET FLOW WEST S302W VS. STREET FLOW SOUTH S302S
3948             KM  SURVEYED INTERSECTION
3949             DT   S302S
3950             DI       0      18     198     727    1564    2674
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3951          DQ       0       0      12     125     358     712
              *
1                                   HEC-1 INPUT                                                    PAGE101

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

3952          KK  RS302W
3953          KM  BASELINE RD & ALMA SCHOOL RD: ROUTE STREET FLOW S302W TO CP303 VIA BASELINE RD
3954          KM  6-LANE ARTERIAL
3955          RS       6    FLOW      -1
3956          RC   0.018   0.018   0.018    2750  0.0004
3957          RX       0       0      21      21     109     109     130     130
3958          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

3959          KK   SB303
3960          KM  RUNOFF FROM SUB-BASIN 303
3961          BA   0.230
3962          LG    0.23    0.25    4.80    0.36      41
3963          UC   0.908   0.762
3964          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3965          UA     100
              *

3966          KK    P302
3967          KM  RETURN DIVERTED PIPE FLOW FROM CP302
3968          KM  FOR ROUTING WEST TO CP303
3969          DR    P302
              *

3970          KK   RP302
3971          KM  ROUTE PIPE FLOW P302 TO CP303 VIA BASELINE ROAD
3972          KM  48" RCP PIPE - CAPACITY = 29CFS
3973          RK    5000   0.001   0.013            CIRC       4                       6
              *

3974          KK   CP303
3975          KM  BASELINE RD & LONGMORE: COMBINE SB303,RP302,RS302W
3976          HC       3
              *

3977          KK    S303
3978          KM  BASELINE RD & LONGMORE: STREET FLOW S303 VS. PIPE FLOW P303
3979          KM  48" RCP PIPE - CAPACITY = 48CFS
3980          DT    P303
3981          DI       0      48   10000
3982          DQ       0      48      48
              *

3983          KK   RS303
3984          KM  BASELINE RD & LONGMORE: ROUTE STREET FLOW S303 TO CP304 VIA BASELINE RD
3985          KM  6-LANE ARTERIAL
3986          RS       4    FLOW      -1
3987          RC   0.018   0.018   0.018    2700  0.0011
3988          RX       0       0      21      21     109     109     130     130
3989          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *
1                                   HEC-1 INPUT                                                    PAGE102

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

3990          KK   SB304
3991          KM  RUNOFF FROM SUB-BASIN 304
3992          BA   0.230
3993          LG    0.20    0.24    4.80    0.36      49
3994          UC    1.05   0.881
3995          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
3996          UA     100
              *

3997          KK    D304
3998          KM  DIVERT RETENTION VOLUME FOR A PORTION OF THE DOBSON RANCH LAKES
3999          KM  LAKE IS LOCATED NEAR THE INTERSECTION OF BASELINE RD & DOBSON RD
4000          KM  APPROXIMATELY 5 FT OF RETENTION DEPTH FOR THE LAKE
4001          KM  TOTAL VOLUME = 25 ACRE-FT
4002          DT  RET304      25
4003          DI       0    5000   10000
4004          DQ       0    5000   10000
              *

4005          KK    P303
4006          KM  RETURN DIVERTED PIPE FLOW FROM CP303
4007          KM  FOR ROUTING WEST TO CP304
```

```
4008          DR    P303
              *

4009          KK   RP303
4010          KM  ROUTE PIPE FLOW P303 TO CP304 VIA BASELINE RD
4011          KM  48" RCP PIPE - CAPACITY = 48CFS
4012          RK    5000  .00011   0.013            CIRC       4                      6
              *

4013          KK   CP304
4014          KM  BASELINE RD & DOBSON RD: COMBINE D304,RP303,RS303
4015          HC       3
              *

4016          KK    S304
4017          KM  BASELINE RD & DOBSON RD: STREET FLOW S304 VS. PIPE FLOW P304
4018          KM  48" RCP PIPE - CAPACITY = 48CFS
4019          DT    P304
4020          DI       0      48   10000
4021          DQ       0      48      48
              *

4022          KK   S304W
4023          KM  BASELINE RD & DOBSON RD: STREET FLOW WEST S304W VS. STREET FLOW SOUTH S304S
4024          KM  SURVEYED INTERSECTION
4025          DT   S304S
4026          DI       0       3      22      69     163     597     914    1303    1733    2232
4027          DQ       0       2      15      47     115     399     592     830    1100    1400
              *
1                                          HEC-1 INPUT                                          PAGE103

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

4028          KK  RS304W
4029          KM  BASELINE RD & DOBSON RD: ROUTE STREET FLOW S304 TO CP305 VIA BASELINE RD
4030          KM  6-LANE ARTERIAL
4031          RS      10    FLOW      -1
4032          RC   0.018   0.018   0.018    4560  0.0013
4033          RX       0       0      21      21     109     109     130     130
4034          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4035          KK   SB305
4036          KM  RUNOFF FROM SUB-BASIN 305
4037          BA   0.360
4038          LG    0.22    0.23    4.80    0.35      38
4039          UC   1.042   0.907
4040          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4041          UA     100
              *

4042          KK   CP305
4043          KM  BASELINE RD & SR 101: COMBINE SB305,RS304W
4044          HC       2
              *

4045          KK   BS305
4046          KM  ROUTE FLOW THROUGH LAKE AND SUBBASIN. ASSUMES LAKE IS THE LOW POINT
4047          KM  IN THE WATERSHED. FLOWS WILL POND WITHIN ENTIRE WATERSHED UNTIL AN
4048          KM  ULTIMATE OUTFALL ELEVATION IS REACHED. FOR SUB-BASIN 305 THE MAXIMUM
4049          KM  STORAGE EVELATION IS 1197.26.
4050          RS       1    STOR       0
4051          SA    14.8    17.9    17.9    32.7     230
4052          SE  1194.4  1195.1  1196.5  1197.2    1198
4053          SQ       0       0      12      15      16
              *

4054          KK  IFDIVR
4055          KM  INFLOW FROM THE GILBERT-CHANDLER ADMS VOLUME II (1994)
4056          KM  FLOW IS DIVERTED OUT OF SUB-BASIN 28 --RR28--
4057          KM  AT RAILROAD TRESTLE ONE-HALF MILE SOUTH OF BASELINE RD
4058          BA     0.1
4059          ZR     =QI  A=GCADMSFUTURE  B=SOFBASELINE&SPRR  C=FLOW  F=24HR FLU FWY
              *

4060          KK  RSDIVR
4061          KM  GUADALUPE RD & CENTER ST: ROUTE INFLOW IFDIVR TO CP402 VIA GUADALUPE RD
4062          KM  4-LANE ARTERIAL
4063          RS      25    FLOW      -1
4064          RC   0.018   0.018   0.018    2700  0.0004
4065          RX       0       0      31      31      99      99     130     130
4066          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *
1                                          HEC-1 INPUT                                          PAGE104
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4067          KK   SB402
4068          KM  RUNOFF FROM SUB-BASIN 402
4069          BA   0.554
4070          LG    0.13    0.27    4.80    0.38      56
4071          UC   0.617   0.412
4072          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4073          UA     100
              *

4074          KK    D402
4075          KM  VARIOUS RETENTION BASINS LOCATED THROUGHOUT THE SUB-BASIN
4076          KM  BASIN VOLUME BASED ON THE 100-YEAR 2 HOUR EVENT AS CALCULATED
4077          KM  IN THE FCDMC DRAINAGE DESIGN MANUAL VOLUME I HYDROLOGY
4078          KM  TOTAL VOLUME = 57 ACRE-FT
4079          DT  RET402      57
4080          DI       0    5000   10000
4081          DQ       0    5000   10000
              *

4082          KK   CP402
4083          KM  GUADALUPE RD & COUNTRY CLUB DR: COMBINE D402,RSDIVR
4084          HC       2
              *

4085          KK   RS402
4086          KM  GUADALUPE RD & COUNTRY CLUB DR: ROUTE STREET FLOW CP402 TO CP308
4087          KM  VIA GUADALUPE RD
4088          KM  4-LANE ARTERIAL
4089          RS       9    FLOW      -1
4090          RC   0.018   0.018   0.018    2950  0.0004
4091          RX       0       0      31      99      99     130     130
4092          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

4093          KK   S301S
4094          KM  RETURN DIVERTED FLOW FROM CP301
4095          KM  FOR ROUTING SOUTH TO CP306
4096          DR   S301S
              *

4097          KK  RS301S
4098          KM  ROUTE STREET FLOW S301S TO CP306 VIA EXTENSION RD
4099          KM  80-FT RIGHT-OF-WAY COLLECTOR
4100          RS       2    FLOW      -1
4101          RC   0.018   0.018   0.018    2750  0.0007
4102          RX       0       0      17      17      63      63      80      80
4103          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
1                                        HEC-1 INPUT                                          PAGE105

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

4104          KK   SB306
4105          KM  RUNOFF FROM SUB-BASIN 306
4106          BA   0.230
4107          LG    0.24    0.15     8.8    0.08      38
4108          UC   0.863   0.691
4109          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4110          UA     100
              *

4111          KK   CP306
4112          KM  MEDINA AVE & EXTENSION RD: COMBINE RS301S,SB306
4113          HC       2
              *

4114          KK   RS306
4115          KM  ROUTE STREET FLOW CP306 TO CP308 VIA EXTENSION ROAD
4116          KM  80-FT RIGHT-OF-WAY COLLECTOR
4117          RS       5    FLOW      -1
4118          RC   0.018   0.018   0.018    2700  0.0004
4119          RX       0       0      17      17      63      63      80      80
4120          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *
              *

4121          KK   SB308
4122          KM  RUNOFF FROM SUB-BASIN 308
4123          BA   0.280
4124          LG    0.24    0.15    9.70    0.06      28
```

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4125          UC   1.042   0.800
4126          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4127          UA     100
              *

4128          KK   CP308
4129          KM  GUADALUPE RD & EXTENSION RD: COMBINE RS306,SB308,RS402
4130          HC       3
              *

4131          KK    S308
4132          KM  GUADALUPE RD & EXTENSION RD: STREET FLOW S308 VS. PIPE FLOW P308
4133          KM  36" RCP PIPE - CAPACITY = 13CFS
4134          DT    P308
4135          DI       0      13   10000
4136          DQ       0      13      13
              *

4137          KK   S308W
4138          KM  GUADALUPE RD & EXTENSION RD: STREET FLOW WEST S308W VS. STREET FLOW SOUTH S308
4139          KM  NOT A SURVEYED INTERSECTION; TYPICAL CROSS SECTION USED
4140          KM  GUADALUPE RD IS A 4-LANE ARTERIAL, EXTENTION RD IS A 80-FT RIGHT-OF-WAY
4141          KM  COLLECTOR
4142          DT   S308S
4143          DI       0      12     108     308     580     915    1306    1747    2235
4144          DQ       0       4      30      79     144     223     315     418     531
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4145          KK  RS308W
4146          KM  GUADALUPE RD & EXTENSION RD:
4147          KM  ROUTE STREET FLOW S308W TO CP309 VIA GUADALUPE RD
4148          KM  4-LANE ARTERIAL
4149          RS       4    FLOW      -1
4150          RC   0.018   0.018   0.018    2280  0.0004
4151          RX       0       0      31      31      99      99     130     130
4152          RY       4    0.18    0.18       0       0    0.18    0.18       4
              *

4153          KK   S302S
4154          KM  RETURN DIVERTED STREET FLOW FROM CP302
4155          KM  FOR ROUTING SOUTH TO CP307
4156          DR   S302S
              *

4157          KK  RS302S
4158          KM  ROUTE STREET FLOW S302S TO CP307 VIA ALMA SCHOOL RD
4159          KM  6-LANE ARTERIAL
4160          RS      31    FLOW      -1
4161          RC   0.018   0.018   0.018    2630  0.0001
4162          RX       0       0      31      31      99      99     130     130
4163          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4164          KK   SB307
4165          KM  RUNOFF FROM SUB-BASIN 307
4166          BA   0.270
4167          LG    0.23    0.15       7    0.15      34
4168          UC   1.296   1.204
4169          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4170          UA     100
              *

4171          KK    D307
4172          KM  DIVERT RETENTION VOLUME FOR WOODGLEN PARK RETENTION BASIN
4173          KM  APPROXIMATELY 3 FT OF RETENTION DEPTH
4174          KM  TOTAL VOLUME = 24 ACRE-FT
4175          DT  RET307      24
4176          DI       0    5000   10000
4177          DQ       0    5000   10000
              *

4178          KK   CP307
4179          KM  MEDINA AVE & ALMA SCHOOL RD: COMBINE RS302S,D307
4180          HC       2
              *

4181          KK    S307
4182          KM  MEDINA AVE & ALMA SCHOOL RD: STREET FLOW S307 VS. PIPE FLOW P307
4183          KM  36" RCP PIPE - CAPACITY = 13CFS
4184          DT    P307
4185          DI       0      13   10000
```

```
4186          DQ       0      13      13
              *
1                                   HEC-1 INPUT                                                    PAGE107

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

4187          KK   RS307
4188          KM  ROUTE STREET FLOW S307 TO CP309 VIA ALMA SCHOOL RD
4189          KM  4-LANE ARTERIAL
4190          RS       2    FLOW      -1
4191          RC   0.018   0.018   0.018    2590  0.0004
4192          RX       0       0      31      31      99      99     130     130
4193          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4194          KK   SB309
4195          KM  RUNOFF FROM SUB-BASIN 309
4196          BA   0.220
4197          LG    0.22    0.15    9.70    0.06      40
4198          UC   0.954   0.682
4199          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4200          UA     100
              *

4201          KK    P308
4202          KM  RETURN DIVERTED PIPE FLOW FROM CP308
4203          KM  FOR ROUTING WEST TO CP309
4204          DR    P308
              *

4205          KK   RP308
4206          KM  ROUTE PIPE FLOW P308 TO CP309 VIA GUADALUPE RD
4207          KM  36" RCP PIPE - CAPACITY = 13CFS
4208          RK    4000  0.0004   0.013            CIRC       3                       2
              *

4209          KK   CP309
4210          KM  GUADALUPE RD & ALMA SCHOOL RD: COMBINE RS307,SB309,RP308,RS308W
4211          HC       4
              *

4212          KK    S309
4213          KM  GUADALUPE RD & ALMA SCHOOL RD: STREET FLOW S309 VS. PIPE FLOW P309
4214          KM  27" RCP PIPE - CAPACITY = 6CFS
4215          DT    P309
4216          DI       0       6   10000
4217          DQ       0       6       6
              *

4218          KK   S309W
4219          KM  GUADALUPE RD & ALMA SCHOOL RD:
4220          KM  STREET FLOW WEST S309W VS. STREET FLOW SOUTH S309S
4221          KM  SURVEYED INTERSECTION
4222          DT   S309S
4223          DI       0      16     178     611    1258    2081    3065
4224          DQ       0      10     109     367     754    1248    1832
              *
1                                   HEC-1 INPUT                                                    PAGE108

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

4225          KK  RS309W
4226          KM  GUADALUPE RD & ALMA SCHOOL RD:
4227          KM  ROUTE STREET FLOW S309W TO S310A VIA GUADALUPE RD
4228          KM  4-LANE ARTERIAL
4229          RS      10    FLOW      -1
4230          RC   0.018   0.018   0.018    5360  0.0011
4231          RX       0       0      31      31      99      99     130     130
4232          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4233          KK   S310A
4234          KM  GUADALUPE RD & DOBSON RD: STREET FLOW S310A VS. PIPE FLOW P310A
4235          KM  42" RCP PIPE - CAPACITY = 32CFS
4236          DT   P310A
4237          DI       0      32   10000
4238          DQ       0      32      32
              *

4239          KK  S310AW
4240          KM  GUADALUPE RD & DOBSON RD: STREET FLOW WEST S310AW VS. STREET FLOW SOUTH S310S
4241          KM  SURVEYED INTERSECTION
4242          DT  S310AS
```

```
4243          DI       0      12     129     540    1318    2388    3667
4244          DQ       0       7      51     223     487     828    1212
              *

4245          KK  RS310A
4246          KM  GUADALUPE RD & DOBSON RD: ROUTE STREET FLOW S310AW TO CP311A
4247          KM  VIA GUADALUPE RD
4248          KM  4-LANE ARTERIAL
4249          RS      18    FLOW      -1
4250          RC   0.018   0.018   0.018    5120  0.0004
4251          RX       0       0      31      31      99      99     130     130
4252          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4253          KK   P310A
4254          KM  RETURN DIVERTED PIPE FLOW FROM S310A
4255          KM  FOR ROUTING WEST TO CP311A
4256          DR   P310A
              *

4257          KK  RP310A
4258          KM  ROUTE PIPE FLOW TO LAKE
4259          KM  42" RCP PIPE - CAPACITY = 32CFS
4260          RK    2270   0.001   0.013            CIRC     3.5                      6
              *

4261          KK    P307
4262          KM  RETURN DIVERTED PIPE FLOW FROM CP307
4263          KM  FOR ROUTING WEST TO CP310B
4264          DR    P307
              *
1                                        HEC-1 INPUT                                    PAGE109

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

4265          KK    P309
4266          KM  RETURN DIVERTED PIPE FLOW FROM 309
4267          KM  FOR ROUTING WEST TO CP310B THROUGH GOLF COURSE
4268          DR    P309
              *

4269          KK  CP310B
4270          KM  COMBINE PIPE FLOWS P307 & P309
4271          HC       2
              *

4272          KK  RC310B
4273          KM  ROUTE PIPE FLOW THROUGH DOBSON RANCH GOLF COURSE
4274          KM  ROUTING IS ASSUMED TO FOLLOW LAKES AND CONNENECTING CONVEYANCE CHANNELS
4275          RS       1    FLOW      -1
4276          RC    0.03    0.03    0.03    4600  0.0001
4277          RX       0       5      10      15      55      60      65      70
4278          RY       4       2       1       0       0       1       2       4
              *

4279          KK   S304S
4280          KM  RETURN DIVERTED STREET FLOW FROM CP304
4281          KM  FOR ROUTING SOUTH TO CP310
4282          DR   S304S
              *

4283          KK  RS304S
4284          KM  ROUTE STREET FLOW S304S TO CP310 VIA DOBSON ROAD
4285          KM  4-LANE ARTERIAL
4286          RS      10    FLOW      -1
4287          RC   0.018   0.018   0.018    2850  0.0007
4288          RX       0       0      31      31      99      99     130     130
4289          RY       4    0.14    0.14       0       0    0.14    0.14       4
              *

4290          KK   SB310
4291          KM  RUNOFF FROM SUB-BASIN 310
4292          BA   1.110
4293          LG    0.22    0.15    7.60    0.12      31
4294          UC   1.321   0.702
4295          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4296          UA     100
              *

4297          KK   D310A
4298          KM  DIVERT RETENTION VOLUME FOR DOBSON RANCH GOLF COURSE
4299          KM  LAKES WITHIN THE GOLF COURSE AVERAGE 3 FT OF RETENTION DEPTH
4300          KM  TOTAL VOLUME = 23 ACRE-FT
4301          DT  RET310      23
```

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4302          DI       0    5000   10000
4303          DQ       0    5000   10000
              *
1                                   HEC-1 INPUT                                                    PAGE110

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


4304          KK   CP310
4305          KM  COMBINE RS304S,D310A,RP310B
4306          HC       3
              *

4307          KK   BS310
4308          KM  LAKE AT DOBSON RANCH PARK PROVIDING RETENTION
4309          KM  OVERFLOW WILL WEIR OVER DOBSON RD AND BE ROUTED VIA THE LAKE
4310          KM  THROUGH SUB-BASIN 311
4311          RS       1    STOR       0
4312          SA       6     6.3     6.7       7     7.4     7.8
4313          SE       1       2       3       4       5       6
4314          SQ       0       0       0       0     300     942
              *

4315          KK   RC310
4316          KM  ROUTE FLOW THROUGH LAKES
4317          KM  CHANNEL CROSS SECTION BASED ON AN AVERAGE WIDTH
4318          RS       1    FLOW      -1
4319          RC    0.03    0.03    0.03    5800  0.0001
4320          RX       0       5      10      15     115     120     125     130
4321          RY       4       2       1       0       0       1       2       4
              *

4322          KK  CP311A
4323          KM  COMBINE RC310,RP310A,RS310A
4324          HC       3
              *

4325          KK   SB311
4326          KM  RUNOFF FROM SUB-BASIN 311
4327          BA   0.830
4328          LG    0.22    0.23    5.70    0.24      32
4329          UC   1.408   0.889
4330          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4331          UA     100
              *

4332          KK    P304
4333          KM  RETURN DIVERTED PIPE FLOW FROM 304
4334          KM  FOR ROUTING SOUTH THROUGH TO LAKES TO CP311
4335          DR    P304
              *

4336          KK   CP311
4337          KM  GUADALUPE RD & SR 101: COMBINE SB311,P304,CP311A
4338          HC       3
              *
1                                   HEC-1 INPUT                                                    PAGE111

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


4339          KK   BS311
4340          KM  ROUTE FLOW THROUGH LAKE AND SUBBASIN. ASSUMES LAKE IS THE LOW POINT
4341          KM  IN THE WATERSHED. FLOWS WILL POND AT THE SOUTHWEST CORNER OF THE SUB-BASIN
4342          KM  UNTIL AN ULTIMATE OUTFALL ELEVATION IS REACHED. THE OUTFALL IS LOCATED
4343          KM  APPROXIMATELY 170-FT SOUTH OF GUADALUPE RD ON CARRIAGE LANE. THE ELEVATION OF
4344          KM  OF THE OUTFALL IS 1194.3
4345          KM  A 36" STORM DRAIN OUTLETS TO THE 84" ADOT PIPE STARTING AT ELEVATION 1189.5
4346          KM  A 40FT WEIR IS MODELED FOR THE CARRIAGE LANE HIGH POINT AT ELEVATION 1194.3
4347          RS       1    STOR       0
4348          SA    43.9    43.9    43.9    43.9    43.9    44.2    48.5    55.3     100
4349          SE  1189.5 1190.50  1191.5  1193.5    1194  1194.1  1194.3 1195.08    1197
4350          SQ       0       5      16      50      55      55      57     133    1000
              *

4351          KK    S311
4352          KM  GUADALUPE RD & SR 101: STREET FLOW SOUTH S311 VS. PIPE FLOW P311
4353          KM  36" RCP PIPE - CAPACITY =57CFS
4354          DT    P311
4355          DI       0      57   10000
4356          DQ       0      57      57
              *

4357          KK   RS311
4358          KM  GUADALUPE RD & SR 101: ROUTE STREET FLOW S311 SOUTH TO CARRIAGE LANE PARK
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```
4359          KM  VIA CARRIAGE LANE
4360          KM  60-FT RIGHT-OF-WAY COLLECTOR
4361          RS       4    FLOW      -1
4362          RC   0.018   0.018   0.018    2186  0.0013
4363          RX       0       0      13      13      47      47      60      60
4364          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

4365          KK   S308S
4366          KM  RETURN DIVERTED STREET FLOW FROM CP308
4367          KM  FOR ROUTING SOUTH TO CP312
4368          DR   S308S
              *

4369          KK  RS308S
4370          KM  ROUTE STREET FLOW S308S TO CP312 ALONG EXTENSION ROAD
4371          KM  80-FT RIGHT-OF-WAY COLLECTOR
4372          RS       9    FLOW      -1
4373          RC   0.018   0.018   0.018    2750  0.0007
4374          RX       0       0      17      17      63      63      80      80
4375          RY       4    0.27    0.27       0       0    0.27    0.27       4
              *

4376          KK   SB403
4377          KM  RUNOFF FROM SUB-BASIN 403
4378          BA   0.253
4379          LG    0.21    0.28    4.80    0.33      21
4380          UC   0.404   0.282
4381          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4382          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4383          KK    D403
4384          KM  DIVERT RETENTION VOLUME FOR RANCHO DEL MAR PARK
4385          KM  APPROXIMATELY 1 FT OF RETENTION DEPTH
4386          KM  TOTAL VOLUME = 21 ACRE-FT
4387          DT  RET403      21
4388          DI       0    5000   10000
4389          DQ       0    5000   10000
              *

4390          KK   RS403
4391          KM  WESTERN CANAL & COUNTRY CLUB DR: ROUTE STREET FLOW SB403 TO CP312
4392          KM  VIA PERALTA DR
4393          KM  60-FT RIGHT-OF-WAY COLLECTOR
4394          RS       4    FLOW      -1
4395          RC   0.018   0.018   0.018    2610  0.0004
4396          RX       0       0      13      13      47      47      60      60
4397          RY       4    0.33    0.33       0       0    0.33    0.33       4
              *

4398          KK   SB312
4399          KM  RUNOFF FROM SUB-BASIN 312
4400          BA   0.280
4401          LG    0.21    0.15    9.70    0.06      45
4402          UC   0.846   0.583
4403          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4404          UA     100
              *

4405          KK   CP312
4406          KM  WESTERN CANAL & EXTENSION RD: COMBINE RS308S,SB312,RS403
4407          HC       3
              *

4408          KK    S312
4409          KM  WESTERN CANAL & EXTENSION RD: STREET FLOW S312 VS. PIPE FLOW P312
4410          KM  54" RCP PIPE - CAPACITY = 39CFS
4411          DT    P312
4412          DI       0      39   10000
4413          DQ       0      39      39
              *

4414          KK   RS312
4415          KM  WESTERN CANAL & EXTENSION ROAD:
4416          KM  ROUTE STREET FLOW S312 TO CP313 VIA PERALTA AVE
4417          KM  60-FT RIGHT-OF-WAY COLLECTOR
4418          RS       4    FLOW      -1
4419          RC   0.018   0.018   0.018    2610  0.0004
4420          RX       0       0      13      13      47      47      60      60
4421          RY       4    0.33    0.33       0       0    0.33    0.33       4
```

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                 *
1                                          HEC-1 INPUT                                                    PAGE113
LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4422             KK   S309S
4423             KM  RETURN DIVERTED FLOW FROM CP309
4424             KM  FOR ROUTING SOUTH TO CP313
4425             DR   S309S
                 *

4426             KK  RS309S
4427             KM  ROUTE STREET FLOW S309S TO CP313 VIA ALMA SCHOOL ROAD
4428             KM  4-LANE ARTERIAL
4429             RS       5    FLOW      -1
4430             RC   0.018   0.018   0.018    2590  0.0004
4431             RX       0       0      31      31      99      99     130     130
4432             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *

4433             KK   SB313
4434             KM  RUNOFF FROM SUB-BASIN 313
4435             BA   0.220
4436             LG    0.20    0.15    8.40    0.09      47
4437             UC   0.542   0.364
4438             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4439             UA     100
                 *

4440             KK    P312
4441             KM  RETURN DIVERTED PIPE FLOW FROM CP312
4442             KM  FOR ROUTING WEST TO CP313
4443             DR    P312
                 *

4444             KK   RP312
4445             KM  ROUTE PIPE FLOW P312 TO CP313 VIA PERALTA AVE
4446             KM  54" RCP PIPE - CAPACITY = 39CFS
4447             RK    2610  0.0004   0.013            CIRC     4.5                        6
                 *

4448             KK   CP313
4449             KM  WESTERN CANAL & ALMA SCHOOL RD: COMBINE RS309S,SB313,RP312,RS312
4450             HC       4
                 *

4451             KK    S313
4452             KM  WESTERN CANAL & ALMA SCHOOL RD: STREET FLOW S313 VS. PIPE FLOW P313
4453             KM  27" RCP PIPE - CAPACITY = 11 CFS
4454             DT    P313
4455             DI       0     100    1000
4456             DQ       0      11      11
                 *
1                                          HEC-1 INPUT                                                    PAGE114
LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4457             KK   RS313
4458             KM  WESTERN CANAL & ALMA SCHOOL RD:
4459             KM  ROUTE STREET FLOW S313 TO CP314 VIA PERALTA AVE
4460             KM  60-FT RIGHT-OF-WAY COLLECTOR
4461             RS       4    FLOW      -1
4462             RC   0.018   0.018   0.018    5330  0.0013
4463             RX       0       0      13      13      47      47      60      60
4464             RY       4    0.33    0.33       0       0    0.33    0.33       4
                 *

4465             KK  S310AS
4466             KM  RETURN DIVERTED STREET FLOW FROM S310A
4467             KM  FOR ROUTING SOUTH TO CP314
4468             DR  S310AS
                 *

4469             KK  R310AS
4470             KM  ROUTE STREET FLOW S310AS TO CP314 VIA DOBSON RD
4471             KM  4-LANE ARTERIAL
4472             RS       8    FLOW      -1
4473             RC   0.018   0.018   0.018    2610  0.0008
4474             RX       0       0      31      31      99      99     130     130
4475             RY       4    0.14    0.14       0       0    0.14    0.14       4
                 *

4476             KK   SB314
```

```
4477          KM  RUNOFF FROM SUB-BASIN 314
4478          BA   0.500
4479          LG    0.21    0.15    8.80    0.07      47
4480          UC   0.908   0.594
4481          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4482          UA     100
              *

4483          KK   D314A
4484          KM  DIVERT RETENTION VOLUME FOR DOBSON HIGH SCHOOL
4485          KM  APPROXIMATELY 0.5 FT RETENTION DEPTH FOR PLAYING FIELDS
4486          KM  APPROXIMATELY 3 FT RETENTION DEPTH IN THE PARKING LOT
4487          KM  TOTAL VOLUME = 27 ACRE-FT
4488          DT  RET314      27
4489          DI       0    5000   10000
4490          DQ       0    5000   10000
              *

4491          KK    P313
4492          KM  RETURN DIVERTED PIPE FLOW FROM CP313
4493          KM  FOR ROUTING WEST TO CP314
4494          DR    P313
              *
1                                    HEC-1 INPUT                                          PAGE115

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

4495          KK   RP313
4496          KM  ROUTE PIPE FLOW P313 TO CP314
4497          KM  27" RCP PIPE - CAPACITY = 11CFS
4498          RK    5330  0.0013   0.013            CIRC    2.25                      6
              *

4499          KK   CP314
4500          KM  WESTERN CANAL & DOBSON RD: COMBINE R310AS,D314A,RP313,RS313
4501          HC       4
              *

4502          KK   BS314
4503          KM  PALO VERDE PARK RETENTION BASIN
4504          KM  VOLUME BASED ON AS-BUILT INFORMATION
4505          RS       1    STOR       0
4506          SA       1       9      12      13      14
4507          SE    1182    1184    1190    1194    1196
4508          SQ      15      25      41      50    5000
              *

4509          KK    S314
4510          KM  WESTERN CANAL & DOBSON RD: STREET FLOW S314 VS. PIPE FLOW P314
4511          KM  24" RCP PIPE - CAPACITY = 2CFS
4512          DT    P314
4513          DI       0     100   10000
4514          DQ       0       2       2
              *

4515          KK   RC314
4516          KM  WESTERN CANAL & DOBSON RD:
4517          KM  ROUTE FLOW ALONG GRASS-LINED CHANNEL ADJACENT TO WESTERN CANAL
4518          RS       1    FLOW      -1
4519          RC    0.03    0.03    0.03    5240   0.002
4520          RX       0       1      15      30      75      85      93      94
4521          RY       6       5       3       0       0       3       5       6
              *

4522          KK   SB315
4523          KM  RUNOFF FROM SUB-BASIN 315
4524          BA   0.490
4525          LG    0.23    0.15    9.70    0.06      32
4526          UC   0.713   0.453
4527          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
4528          UA     100
              *

4529          KK    P314
4530          KM  RETURN DIVERTED PIPE FLOW FROM CP314
4531          KM  FOR ROUTING WEST TO CP315
4532          DR    P314
              *
1                                    HEC-1 INPUT                                          PAGE116

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

4533          KK   RP314
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4534          KM  ROUTE PIPE FLOW P314 TO CP315 VIA PERALTA AVE
4535          KM  24" RCP PIPE - CAPACITY = 2CFS
4536          RK    5250   .0001   0.013          CIRC       2                    6
              *

4537          KK   CP315
4538          KM  WESTERN CANAL & SR 101: COMBINE RS311,SB315,RP314,RC314
4539          HC       4
              *

4540          KK   BS315
4541          KM  CARRIGE LANE PARK RETENTION BASIN
4542          KM  VOLUME BASED ON AS-BUILT INFORMATION
4543          KM  AN INLET STRUCTURE LOCATED AT THE LOWEST ELEVATION OF THE BASIN
4544          KM  DRAINS FLOWS TO THE 84" ADOT PIPE VIA A 60" PIPE
4545          KM  ONCE THE BASIN FILLS TO ELEVATION 1190 A SEPERATE INLET STRUCTURE DRAINS
4546          KM  DIRECTLY INTO THE 84" PIPE
4547          KM  BLEED-OFF FLOWS BASED ON THE 60" PIPE FROM ELEVATION 1171 TO 1190
4548          KM  BLEED-OFF FLOWS BASED ON THE 84" PIPE FROM ELEVATION 1190 TO 1196
4549          RS       1    STOR       0
4550          SA     0.1     3.8     6.7     9.6    14.2    19.8      22
4551          SE    1171    1177    1180    1185    1190    1196    1198
4552          SQ     135     215     245     290     325     800   10000
              *

4553          KK   RP315
4554          KM  WESTERN CANAL & SR 101: ROUTE PIPE FLOW FROM CARRIAGE LANE PARK TO CP316
4555          KM  84" RCP PIPE - CAPACITY = 64CFS
4556          RK    2550  0.0001   0.013          CIRC       7                    6
              *

4557          KK    P311
4558          KM  RETURN DIVERTED PIPE FLOW FROM CP311
4559          KM  FOR ROUTING WEST TO CP316
4560          DR    P311
              *

4561          KK   RP311
4562          KM  GUADALUPE RD & SR 101: ROUTE PIPE FLOW P311 TO ADOT PIPE AT PRICE RD
4563          KM  36" RCP PIPE - CAPACITY = 57CFS
4564          RK    1150   0.002   0.013          CIRC       3                    6
              *

4565          KK   CP316
4566          KM  COMBINE RP315,BS311
4567          HC       2
              *
1                                          HEC-1 INPUT                                PAGE117

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

4568          KK   RP316
4569          KM  GUADALUPE RD & SR 101: ROUTE PIPE FLOW CP116 TO CP117 VIA PRICE RD
4570          KM  84" RCP PIPE - CAPACITY = 64CFS
4571          RK    5380  0.0001   0.013          CIRC       7                    2
              *

4572          KK   CP317
4573          KM  COMBINE RP316,BS305
4574          HC       2
4575          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   33       SB101
              .
              .
   58         .        IF17
              .           V
              .           V
   63         .        RS17
              .           .
              .           .
   71         .           .        IF25
              .           .           V
              .           .           V
   76         .           .        RS25
              .           .           .
              .           .           .
   84       CP101.......................
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                V
                V
 87         RS101
                .
                .
 94             .        SB102
                .            .
                .            .
105             .            .-------> RET102
101             .         D102
                .            .
                .            .
108             .            .       IFD36
                .            .           V
                .            .           V
113             .            .       RSD36
                .            .           .
                .            .           .
121         CP102.......................
                .
                .
127             .------->    P102
124          S102
                .
                .
133             .------->   S102S
130         S102W
                V
                V
136        RS102W
                .
                .
143             .        SB103
                .            .
                .            .
150             .            .       IFD21
                .            .           V
                .            .           V
155             .            .       RSD21
                .            .           .
                .            .           .
162             .        CP103............
                .            .
                .            .
168             .            .------->    P103
165             .          S103
                .            V
                .            V
171             .        RS103
                .            .
                .            .
178             .            .       SB104
                .            .           .
                .            .           .
187             .            .           .          .<-------    P103
185             .            .           .        P103
                .            .           .           V
                .            .           .           V
188             .            .           .       RP103
                .            .           .           .
                .            .           .           .
192          CP104.................................
                .
                .
198             .------->    P104
195           S104
                .
                .
205             .------->   S104S
201          S104W
                V
                V
208         RS104W
                .
                .
215             .        SB105
                .            .
                .            .
226             .            .-------> RET105
222             .          D105
                .            V
                .            V
229             .        RS105
                .            .
                .            .
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236          .           .       SB106
             .           .           .
             .           .           .
243      CP106.......................
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             .
249          .------->    P106
246       S106
             .
             .
255          .------->   S106S
252      S106W
             V
             V
258     RS106W
             .
             .
265          .       SB107
             .           .
             .           .
272          .           .       SB109
             .           .           .
             .           .           .
279          .       CP107............
             .           V
             .           V
282          .       RS107
             .           .
             .           .
289          .           .       SB108
             .           .           .
             .           .           .
300          .           .           .-------> RET108
296          .           .        D108
             .           .           .
             .           .           .
303          .           .           .       SB110
             .           .           .           .
             .           .           .           .
310      CP108.................................
             V
             V
313      RS108
             .
             .
320          .       SB111
             .           .
             .           .
327          .           .        IF34
             .           .          V
             .           .          V
332          .           .        RS34
             .           .           .
             .           .           .
340          .           .           .       IF44B
             .           .           .           V
             .           .           .           V
345          .           .           .       RS44B
             .           .           .           .
             .           .           .           .
353          .           .           .           .      IPMAIN
             .           .           .           .           .
             .           .           .           .           .
363          .       CP111................................
             .           .
             .           .
369          .           .------->    P111
366          .        S111
             .           .
             .           .
376          .           .------->   S111S
372          .       S111W
             .           V
             .           V
379          .      RS111W
             .           .
             .           .
386          .           .       SB112
             .           .           .
             .           .           .
396          .           .           .           .<-------    P111
393          .           .           .       P111
             .           .           .          V
             .           .           .          V
397          .           .           .       RP111
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401             .      CP112.......................
                .          .
                .          .
407             .          .-------->    P112
404             .       S112
                .          V
                .          V
410             .      RS112
                .          .
                .          .
420             .          .          .<-------   S102S
417             .          .      S102S
                .          .          V
                .          .          V
421             .          .     RS102S
                .          .          .
                .          .          .
431             .          .          .          .<-------    P102
428             .          .          .       P102
                .          .          .          V
                .          .          .          V
432             .          .          .      RP102
                .          .          .          .
                .          .          .          .
436             .          .          .          .       SB113
                .          .          .          .          .
                .          .          .          .          .
446             .          .          .          .          .          .<-------    P112
443             .          .          .          .          .       P112
                .          .          .          .          .          V
                .          .          .          .          .          V
447             .          .          .          .          .      RP112
                .          .          .          .          .          .
                .          .          .          .          .          .
451             .      CP113.......................................................
                .          .
                .          .
457             .          .-------->    P113
454             .       S113
                .          .
                .          .
463             .          .-------->   S113S
460             .      S113W
                .          V
                .          V
468             .     RS113W
                .          .
                .          .
478             .          .          .<-------   S104S
475             .          .      S104S
                .          .          V
                .          .          V
479             .          .     RS104S
                .          .          .
                .          .          .
486             .          .          .      SB114
                .          .          .          .
                .          .          .          .
496             .          .          .          .          .<-------    P113
493             .          .          .          .       P113
                .          .          .          .          V
                .          .          .          .          V
497             .          .          .          .      RP113
                .          .          .          .          .
                .          .          .          .          .
504             .          .          .          .          .          .<-------    P104
501             .          .          .          .          .       P104
                .          .          .          .          .          V
                .          .          .          .          .          V
505             .          .          .          .          .      RP104
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509             .      CP114.......................................................
                .          .
                .          .
515             .          .-------->    P114
512             .       S114
                .          .
                .          .
522             .          .-------->   S114S
518             .      S114W
                .          V
                .          V
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525          .      RS114W
             .          .
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535          .          .          .<-------   S106S
532          .          .      S106S
             .          .         V
             .          .         V
536          .          .     RS106S
             .          .          .
             .          .          .
546          .          .          .          .<-------    P106
543          .          .          .       P106
             .          .          .          V
             .          .          .          V
547          .          .          .      RP106
             .          .          .          .
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551          .          .          .          .      SB115
             .          .          .          .          .
             .          .          .          .          .
562          .          .          .          .          .-------> RET115
558          .          .          .          .       D115
             .          .          .          .          .
             .          .          .          .          .
568          .          .          .          .          .          .<-------    P114
565          .          .          .          .          .       P114
             .          .          .          .          .          V
             .          .          .          .          .          V
569          .          .          .          .          .      RP114
             .          .          .          .          .          .
             .          .          .          .          .          .
573          .      CP115.............................................
             .          .
             .          .
579          .          .------->   P115
576          .       S115
             .          .
             .          .
585          .          .------->  S115S
582          .      S115W
             .          V
             .          V
588          .     RS115W
             .          .
             .          .
595          .          .      SB116
             .          .          .
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602          .          .          .      SB117
             .          .          .          .
             .          .          .          .
612          .          .          .          .          .<-------    P115
609          .          .          .          .       P115
             .          .          .          .          V
             .          .          .          .          V
613          .          .          .          .      RP115
             .          .          .          .          .
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617      CP116.............................................
             .
             .
625          .------->   P116
620       S116
             V
             V
628      RS116
             .
             .
635          .      SB118
             .          .
             .          .
642          .          .      IP119
             .          .          .
             .          .          .
654          .          .          .          .<-------   S111S
652          .          .          .      S111S
             .          .          .          V
             .          .          .          V
655          .          .          .     RS111S
             .          .          .          .
             .          .          .          .
662          .          .          .          .      IFD48
             .          .          .          .          V
             .          .          .          .          V
667          .          .          .          .     RSD48
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675          CP118.................................
681                .------->    P118
678           S118
687                .------->   S118S
684          S118W
                  V
                  V
692         RS118W
699                .       SB119
706          CP119............
712                .------->    P119
709           S119
                  V
                  V
715          RS119
722                .       SB120
729          CP120............
                  V
                  V
732          RS120
739                .       IP122
752                .                .<-------   S113S
749                .       S113S
                  V
                  V
753                .      RS113S
760                .                .       SB121
767          CP121.................................
773                .------->    P121
770           S121
779                .------->   S121S
776          S121W
                  V
                  V
782         RS121W
792                .                .<-------   S114S
789                .       S114S
                  V
                  V
793                .      RS114S
800                .                .       SB122
811                .                .-------> RET122
807                .                D122
814          CP122.......................
820                .------->    P122
817           S122
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827          .          .-------->   S122S
823          .      S122W
             .          V
             .          V
830          .     RS122W
             .          .
             .          .
840          .          .          .<-------   S115S
837          .          .      S115S
             .          .          V
             .          .          V
841          .          .     RS115S
             .          .          .
             .          .          .
848          .          .          .      SB123
             .          .          .          .
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855          .      CP123.......................
             .          .
             .          .
861          .          .-------->    P123
858          .       S123
             .          .
             .          .
867          .          .-------->   S123S
864          .      S123W
             .          V
             .          V
870          .     RS123W
             .          .
             .          .
877          .          .      SB124
             .          .          .
             .          .          .
884          .          .          .      SB125
             .          .          .          .
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891      CP124.................................
             V
             V
894      RS124
             .
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901          .      SB126
             .          .
             .          .
911          .          .-------->    P126
908          .       S126
             .          .
             .          .
919          .          .-------->   S126S
914          .      S126W
             .          V
             .          V
922          .     RS126W
             .          .
             .          .
929          .          .      IP128
             .          .          .
             .          .          .
942          .          .          .          .<-------   S118S
939          .          .          .      S118S
             .          .          .          V
             .          .          .          V
943          .          .          .     RS118S
             .          .          .          .
             .          .          .          .
950          .          .          .          .      SB127
             .          .          .          .          .
             .          .          .          .          .
960          .          .          .          .          .          .<-------    P118
957          .          .          .          .          .       P118
             .          .          .          .          .          V
             .          .          .          .          .          V
961          .          .          .          .          .      RP118
             .          .          .          .          .          .
             .          .          .          .          .          .
965          .      CP127.............................................
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971          .          .-------->    P127
968          .       S127
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 977          .          .------->   S127S
 974          .      S127W
              .          V
              .          V
 982          .     RS127W
              .          .
              .          .
 989          .          .       SB128
              .          .           .
              .          .           .
 996          .      CP128............
              .          .
              .          .
1004          .          .------->    P128
 999          .       S128
              .          V
              .          V
1007          .      RS128
              .          .
              .          .
1017          .          .           .<-------   S121S
1014          .          .       S121S
              .          .           V
              .          .           V
1018          .          .      RS121S
              .          .           .
              .          .           .
1025          .          .           .       SB129
              .          .           .           .
              .          .           .           .
1036          .          .           .           .------->  RET129
1032          .          .           .        D129
              .          .           .           .
              .          .           .           .
1042          .          .           .           .           .<-------    P121
1039          .          .           .           .        P121
              .          .           .           .           V
              .          .           .           .           V
1043          .          .           .           .       RP121
              .          .           .           .           .
              .          .           .           .           .
1047          .      CP129.................................
              .          .
              .          .
1053          .          .------->    P129
1050          .       S129
              .          .
              .          .
1060          .          .------->   S129S
1056          .      S129W
              .          V
              .          V
1063          .     RS129W
              .          .
              .          .
1073          .          .           .<-------   S122S
1070          .          .       S122S
              .          .           V
              .          .           V
1074          .          .      RS122S
              .          .           .
              .          .           .
1081          .          .           .       SB130
              .          .           .           .
              .          .           .           .
1088          .      CP130......................
              .          .
              .          .
1096          .          .------->   S130S
1091          .      S130W
              .          V
              .          V
1099          .     RS130W
              .          .
              .          .
1109          .          .           .<-------   S123S
1106          .          .       S123S
              .          .           V
              .          .           V
1110          .          .      RS123S
              .          .           .
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1117          .          .           .       SB131
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1127          .           .           .           .           .<-------    P123
1124          .           .           .           .        P123
              .           .           .           .           V
              .           .           .           .           V
1128          .           .           .           .       RP123
              .           .           .           .           .
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1132          .       CP131.................................
              .           .
              .           .
1138          .           .------->    P131
1135          .        S131
              .           .
              .           .
1145          .           .------->   S131S
1141          .       S131W
              .           V
              .           V
1148          .      RS131W
              .           .
              .           .
1155          .           .       SB132
              .           .           .
              .           .           .
1162      CP132......................
              V
              V
1165      RS132
              .
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1172          .       SB133
              .           .
              .           .
1182          .           .           .<-------   S126S
1179          .           .       S126S
              .           .           V
              .           .           V
1183          .           .      RS126S
              .           .           .
              .           .           .
1190          .           .           .        IF51
              .           .           .           V
              .           .           .           V
1195          .           .           .        RS51
              .           .           .           .
              .           .           .           .
1203          .           .           .           .        IF67
              .           .           .           .           V
              .           .           .           .           V
1208          .           .           .           .        RS67
              .           .           .           .           .
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1216          .       CP133.................................
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              .           .
1222          .           .------->    P133
1219          .        S133
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1229          .           .------->   S133S
1225          .       S133W
              .           V
              .           V
1232          .      RS133W
              .           .
              .           .
1242          .           .           .<-------    P133
1239          .           .        P133
              .           .           V
              .           .           V
1243          .           .       RP133
              .           .           .
              .           .           .
1247          .      CP134A............
              .           .
              .           .
1253          .           .           .<-------   S127S
1250          .           .       S127S
              .           .           V
              .           .           V
1254          .           .      RS127S
              .           .           .
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1261          .           .           .       SB134
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1272                                  .-------> RET134
1268                            D134
                                      .
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1278                                  .          .<-------    P126
1275                                  .       P126
                                      .          V
                                      .          V
1279                                  .      RP126
                                      .          .
                                      .          .
1286                                  .          .          .<-------    P127
1283                                  .          .       P127
                                      .          .          V
                                      .          .          V
1287                                  .          .      RP127
                                      .          .          .
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1291                        CP134.....................................
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                                 .
1297                             .------->   P134
1294                         S134
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1303                             .------->  S134S
1300                        S134W
                                V
                                V
1306                       RS134W
                                 .
                                 .
1313                             .      SB135
                                 .          .
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1320                        CP135...........
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1326                             .------->   P135
1323                         S135
                                V
                                V
1329                        RS135
                                 .
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1336                             .      SB136
                                 .          .
                                 .          .
1347                             .          .------->  RET136
1343                             .       D136
                                 .          .
                                 .          .
1353                             .          .          .<-------    P135
1350                             .          .       P135
                                 .          .          V
                                 .          .          V
1354                             .          .      RP135
                                 .          .          .
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1358                        CP136........................
                                 .
                                 .
1364                             .------->   P136
1361                         S136
                                 .
                                 .
1371                             .------->  S136S
1367                        S136W
                                V
                                V
1374                       RS136W
                                 .
                                 .
1384                             .          .<-------   S129S
1381                             .      S129S
                                 .          V
                                 .          V
1385                             .     RS129S
                                 .          .
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1392                             .          .      SB137
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1402                             .          .          .          .<-------    P129
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1399                                    P129
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                                           V
1403                                    RP129
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1410                                       .<-------    P136
1407                                       .        P136
                                           .           V
                                           .           V
1411                                       .       RP136
                                           .           .
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1415                        CP137.........................................
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1421                             .------->    P137
1418                         S137
                                 .
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1427                             .------->   S137S
1424                        S137W
                                 V
                                 V
1430                       RS137W
                                 .
                                 .
1440                             .<-------   S130S
1437                             .      S130S
                                 .          V
                                 .          V
1441                             .     RS130S
                                 .          .
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1448                             .          .      SB138
                                 .          .          .
                                 .          .          .
1458                             .          .          .<-------    P137
1455                             .          .       P137
                                 .          .          V
                                 .          .          V
1459                             .          .      RP137
                                 .          .          .
                                 .          .          .
1463                        CP138.................................
                                 .
                                 .
1469                             .------->    P138
1466                         S138
                                 .
                                 .
1476                             .------->   S138S
1472                        S138W
                                 V
                                 V
1479                       RS138W
                                 .
                                 .
1489                             .<-------   S131S
1486                             .      S131S
                                 .          V
                                 .          V
1490                             .     RS131S
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3173                    .     RS232S
                        .          .
                        .          .
3184                    .          .          .<-------    P232
3181                    .          .       P232
                        .          .          V
                        .          .          V
3185                    .          .      RP232
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3190                    .          .          .      SB239
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3206                    .          .          .          .-------> RET239
3202                    .          .          .       D239
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3209                CP239.................................
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3219                    .------->    P239
3212                 S239
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3226                    .------->   S239S
3222                S239W
                        V
                        V
3231               RS239W
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3242                    .          .<-------   S233S
3239                    .      S233S
                        .          V
                        .          V
3243                    .     RS233S
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3251                    .          .      SB240
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3258                CP240......................
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3265                    .------->    P240
3261                 S240
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3273                    .------->   S240S
3268                S240W
                        V
                        V
3278               RS240W
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3289                    .          .<-------    P240
3286                    .       P240
                        .          V
                        .          V
3290                    .      RP240
                        .          .
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3299                    .          .          .<-------   S234S
3296                    .          .      S234S
                        .          .          V
                        .          .          V
3300                    .          .     RS234S
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3311                    .          .          .          .<-------    P234
3308                    .          .          .       P234
                        .          .          .          V
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3312                    .          .          .      RP234
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3317             .         .         .         .         .         .         .      SB241
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                 .         .         .         .         .         .         .        .-------> RET241
3328             .         .         .         .         .         .         .
3324             .         .         .         .         .         .         .      D241
                 .         .         .         .         .         .         .        .
                 .         .         .         .         .         .         .        .
3331             .         .         .      CP241.......................................
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3340             .         .         .         .-------> P241
3334             .         .         .      S241
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3347             .         .         .         .-------> S241S
3343             .         .         .      S241W
                 .         .         .         V
                 .         .         .         V
3352             .         .         .     RS241W
                 .         .         .         .
                 .         .         .         .
3363             .         .         .         .       .<-------  S235S
3360             .         .         .         .    S235S
                 .         .         .         .       V
                 .         .         .         .       V
3364             .         .         .         .   RS235S
                 .         .         .         .       .
                 .         .         .         .       .
3372             .         .         .         .       .      SB242
                 .         .         .         .       .        .
                 .         .         .         .       .        .
3384             .         .         .      CP242.....................
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                 .         .         .         .
3391             .         .         .         .-------> P242
3387             .         .         .      S242
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3398             .         .         .         .-------> S242S
3394             .         .         .      S242W
                 .         .         .         V
                 .         .         .         V
3403             .         .         .     RS242W
                 .         .         .         .
                 .         .         .         .
3414             .         .         .         .       .<-------  P242
3411             .         .         .         .    P242
                 .         .         .         .       V
                 .         .         .         .       V
3415             .         .         .         .   RP242
                 .         .         .         .       .
                 .         .         .         .       .
3423             .         .         .         .       .         .<-------  S236S
3420             .         .         .         .       .      S236S
                 .         .         .         .       .         V
                 .         .         .         .       .         V
3424             .         .         .         .       .     RS236S
                 .         .         .         .       .         .
                 .         .         .         .       .         .
3435             .         .         .         .       .         .         .<-------  P236
3432             .         .         .         .       .         .      P236
                 .         .         .         .       .         .         V
                 .         .         .         .       .         .         V
3436             .         .         .         .       .         .     RP236
                 .         .         .         .       .         .         .
                 .         .         .         .       .         .         .
3441             .         .         .         .       .         .         .      SB243
                 .         .         .         .       .         .         .        .
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3448             .         .         .      CP243.......................................
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3457             .         .         .         .-------> P243
3451             .         .         .      S243
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3463             .         .         .         .-------> S243S
3460             .         .         .      S243W
                 .         .         .         V
                 .         .         .         V
3468             .         .         .     RS243W
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3476                                                  SB244
3483                                  CP244A.......................
                                          V
                                          V
3486                                  BS244A
3498                                                  .<-------    P243
3495                                              P243
                                                     V
                                                     V
3499                                              RP243
3504                                   CP244............
                                          V
                                          V
3508                                   RC244
                                          V
                                          V
3515                                  RC244B
3526                                                  .<-------   S239S
3523                                           S239S
                                                     V
                                                     V
3527                                          RS239S
3535                                                  SB245
3554                                                                .<-------   P146A
3547                                                            P146A
                                                                    V
                                                                    V
3555                                                          RC146A
3563                                                                      SB252
3575                                                                                .<-------    P239
3572                                                                            P239
                                                                                  V
                                                                                  V
3576                                                                          RP239
3581                                           CP245.............................................
3589                                                  .------->    P245
3585                                            S245
                                                     V
                                                     V
3592                                           RC245
3603                                                            .<-------   S240S
3600                                                    S240S
                                                            V
                                                            V
3604                                                  RS240S
3612                                                            SB246
3619                                           CP246........................
3622                                                    SB247
3629                                                            SB248
3639                                                                      .<-------    P245
3636                                                                  P245
                                                                        V
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3640                                                                  RP245
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3645                                  CP247.................................
                                          V
                                          V
3648                                  BS247
                                          V
                                          V
3668                                  RC247
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3679                                      .<-------   S241S
3676                                  S241S
                                          V
                                          V
3680                                 RS241S
                                          .
                                          .
3691                                      .                .<-------    P241
3688                                      .            P241
                                          .               V
                                          .               V
3692                                      .           RP241
                                          .               .
                                          .               .
3697                                      .               .       SB253
                                          .               .         .
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3706                                  CP248.................................
                                          V
                                          V
3709                                  RC248
                                          .
                                          .
3720                                      .<-------   S242S
3717                                  S242S
                                          V
                                          V
3721                                 RS242S
                                          .
                                          .
3729                                      .           SB249
                                          .               .
                                          .               .
3746                                      .               .-------> RET249
3741                                      .            D249
                                          .               .
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3749                                  CP249.....................
                                          V
                                          V
3752                                  RC249
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3763                                      .<-------   S243S
3760                                  S243S
                                          V
                                          V
3764                                 RS243S
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3772                                      .           SB250
                                          .               .
                                          .               .
3783                                      .               .-------> RET250
3779                                      .            D250
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3786                                      .               .       SB254
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3795                                  CP250.................................
                                          V
                                          V
3798                                  RC250
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3806                                      .           SB251
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3817                                      .               .-------> RET251
3813                                      .            D251
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3820          .          .      CP251......................
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3825          .          .          .      SB201
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3842          .          .          .          .          .<-------   S204N
3839          .          .          .          .      S204N
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3843          .          .          .          .     RS204N
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3851          .          .          .          .          .      SB205
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3858          .          .          .          .      CP205............
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3861          .        CPD.................................
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              .          .
3866          .          .      SB401
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3894          .          .          .-------> RET401
3890          .          .       D401
              .          .          V
              .          .          V
3897          .          .      RS401
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3904          .          .          .      SB301
              .          .          .          .
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3911          .          .      CP301............
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3919          .          .          .------->  S301S
3914          .          .      S301W
              .          .          V
              .          .          V
3922          .          .     RS301W
              .          .          .
              .          .          .
3929          .          .          .      SB302
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3936          .          .      CP302............
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3942          .          .          .------->   P302
3939          .          .       S302
              .          .          .
              .          .          .
3949          .          .          .------->  S302S
3945          .          .      S302W
              .          .          V
              .          .          V
3952          .          .     RS302W
              .          .          .
              .          .          .
3959          .          .          .      SB303
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3969          .          .          .          .          .<-------   P302
3966          .          .          .          .      P302
              .          .          .          .          V
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3970          .          .          .          .     RP302
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              .          .          .          .          .
3974          .          .      CP303......................
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3980          .          .          .------->   P303
3977          .          .       S303
              .          .          V
              .          .          V
3983          .          .      RS303
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3990          .          .          .      SB304
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4002                                  .-------> RET304
3997                          D304
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4008                                     .<-------    P303
4005                                 P303
                                        V
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4009                                RP303
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4013                     CP304........................
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                                 .
4019                             .------->    P304
4016                      S304
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4025                             .------->   S304S
4022                     S304W
                             V
                             V
4028                    RS304W
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4035                          SB305
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                                 .
4042                     CP305............
                             V
                             V
4045                     BS305
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4054                        IFDIVR
                                 V
                                 V
4060                        RSDIVR
                                 .
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4067                                 SB402
                                 .
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4079                                 .-------> RET402
4074                                 D402
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4082                          CP402............
                                 V
                                 V
4085                          RS402
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4096                                     .<-------   S301S
4093                                 S301S
                                        V
                                        V
4097                                RS301S
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                                        .
4104                                        .       SB306
                                        .           .
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4111                                 CP306............
                                        V
                                        V
4114                                 RS306
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4121                                        .       SB308
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4128                          CP308........................
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4134                             .------->    P308
4131                           S308
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4142                             .------->   S308S
4137                          S308W
                                 V
                                 V
4145                        RS308W
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4156                                  .<-------   S302S
4153                             S302S
                                     V
                                     V
4157                            RS302S

4164                                       SB307

4175                                                .------->  RET307
4171                                        D307

4178                             CP307............

4184                                      .------->    P307
4181                              S307
                                     V
                                     V
4187                             RS307

4194                                       SB309

4204                                                     .<-------    P308
4201                                                  P308
                                                         V
                                                         V
4205                                                 RP308

4209                        CP309.................................

4215                            .------->    P309
4212                         S309

4222                            .------->   S309S
4218                        S309W
                                V
                                V
4225                       RS309W

4236                            .------->   P310A
4233                        S310A

4242                            .------->  S310AS
4239                       S310AW
                                V
                                V
4245                       RS310A

4256                                  .<-------   P310A
4253                             P310A
                                     V
                                     V
4257                            RP310A

4264                                                .<-------    P307
4261                                        P307

4268                                                     .<-------    P309
4265                                                  P309

4269                                       CP310B............
                                                V
                                                V
4272                                       RC310B

4282                                                     .<-------   S304S
4279                                                  S304S
                                                         V
                                                         V
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4283                                                  RS304S
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4290                                                    .        SB310
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4301                                                    .          .-------> RET310
4297                                                    .        D310A
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4304                                            CP310.......................
                                                    V
                                                    V
4307                                            BS310
                                                    V
                                                    V
4315                                            RC310
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4322                                    CP311A.......................
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4325                                        SB311
                                                .
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4335                                            .<-------    P304
4332                                        P304
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4336                                    CP311.......................
                                            V
                                            V
4339                                    BS311
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4354                                        .------->    P311
4351                                    S311
                                            V
                                            V
4357                                    RS311
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4368                                            .<-------   S308S
4365                                        S308S
                                                V
                                                V
4369                                        RS308S
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4376                                            .       SB403
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4387                                            .          .-------> RET403
4383                                            .        D403
                                                .          V
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4390                                            .       RS403
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4398                                            .          .       SB312
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4405                                        CP312.......................
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4411                                            .------->    P312
4408                                        S312
                                                V
                                                V
4414                                        RS312
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4425                                            .          .<-------   S309S
4422                                            .       S309S
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4426                                            .      RS309S
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4433                                            .          .       SB313
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4443                                            .          .          .       .<-------    P312
4440                                            .          .          .     P312
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4444                                                                          RP312
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4448                                                  CP313.....................................
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4454                                                        .-------->    P313
4451                                                   S313
                                                          V
                                                          V
4457                                                  RS313
                                                            .
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4468                                                        .<-------  S310AS
4465                                                   S310AS
                                                          V
                                                          V
4469                                                   R310AS
                                                            .
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4476                                                            SB314
                                                                    .
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4488                                                                    .-------->  RET314
4483                                                            D314A
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4494                                                                                .<-------    P313
4491                                                                            P313
                                                                                   V
                                                                                   V
4495                                                                          RP313
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4499                                                  CP314.....................................
                                                          V
                                                          V
4502                                                  BS314
                                                            .
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4512                                                        .-------->    P314
4509                                                   S314
                                                          V
                                                          V
4515                                                  RC314
                                                            .
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4522                                                       SB315
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4532                                                                    .<-------    P314
4529                                                                P314
                                                                       V
                                                                       V
4533                                                            RP314
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4537                                          CP315.....................................
                                                  V
                                                  V
4540                                          BS315
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4553                                          RP315
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4560                                                        .<-------    P311
4557                                                   P311
                                                          V
                                                          V
4561                                                  RP311
                                                            .
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4565                                          CP316............
                                                  V
                                                  V
4568                                          RP316
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4572                                  CP317............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   27OCT06  TIME  11:21:57  *
*                                      *
****************************************
```

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

TEMPE CANAL FLOODPLAIN DELINEATION STUDY (FCD 2002-22)

100-YEAR, 24-HOUR HEC-1 MODEL
FILENAME: TC-24HR.DAT DATE: OCTOBER 27, 2006

PREPARED BY HOSIN-RYAN CONSULTANTS, INC. (HRC 03-023)
IN ASSOCIATION WITH COE & VAN LOO CONSULTANTS, INC.

THE TEMPE CANAL FDS MODEL AREA IS BOUNDED BY TEMPE CANAL AND PRICE ROAD TO THE WEST, CONSOLIDATED CANAL AND SOUTHERN-PACIFIC RAILROAD TO THE EAST, CROSSCUT CANAL TO THE NORTH, AND WESTERN CANAL AND US60 TO THE SOUTH. THREE WATERSHED AREAS ARE INCLUDED IN THIS MODEL; THE 100, 200, AND 300 SERIES. WATERSHED BOUNDARY DESCRIPTIONS ARE GIVEN IN THE MODEL.

INFLOW HYDROGRAPHS TO THE MODEL ARE INCLUDED IN THE FILE TC-24HR.DSS AND COME FROM THE "CONSOLIDATED CANAL FLOODPLAIN DELINEATION STUDY," BY TETRA TECH, INC., MARCH 2003, AND THE "GILBERT-CHANDLER ADMS, VOL II-FUTURE CONDITIONS HYDROLOGY," BY FCDMC, JANUARY 1994.

NOTES:
- SUB-BASIN AND PRECIPITATION DATA WERE GENERATED USING DDMSW VERSION 2.1.0
- NORMAL DEPTH ROUTING WAS USED FOR STREET FLOW ROUTING
- KINEMATIC WAVE ROUTING WAS USED FOR PIPE FLOW ROUTING
- STREET INTERSECTION FLOW SPLIT RATING CURVES WERE BASED ON NORMAL DEPTH
- PB WERE ADJUSTED BY AREAL REDUCTION FACTORS BASED ON THE FCDMC DRAINAGE DESIGN MANUAL. KEY CONCENTRATION POINTS WERE IDENTIFIED ALONG THE TEMPE CANAL AND ADOT US60 CHANNEL, AND AT DOBSON LAKES AND CARRIAGE LANE PARK.

```
 32 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1JUL93  STARTING DATE
                      ITIME        0100  STARTING TIME
                         NQ         600  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3JUL93  ENDING DATE
                     NDTIME        0255  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE   49.92 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
   -----DSS---ZOPEN:  Existing File Opened,  File: TC-24HR.DSS
                      Unit:  71;  DSS Version: 6-EA
        ----- Entering ZRRTSX for unit 71 -----
 Pathname: /TEMPE/17-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
 -----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
```

```
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/17-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/17-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/17-OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/17-OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/17-OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/25-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/25-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/25-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
```

```
        Pathname: /TEMPE/25-OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/25-OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/25-OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/25-OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D36OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D36OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D36OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D36OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D36OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D36OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D21OUT/FLOW//5MIN/CC24HR/
```

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        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D21OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D21OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D21OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93       JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D21OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D21OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93       JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/34-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/34-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC24HR/
```

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        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/34-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/34-OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:     1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/34-OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/34-OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:     1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/44BOUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:      5  Number of data values:       1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/44BOUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:      5  Number of data values:     601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/44BOUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/44BOUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:     1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/44BOUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/44BOUT/FLOW/03JUL1993/5MIN/CC24HR/
```

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      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93       JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS     ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D48OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS     ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/D48OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D48OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D48OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93       JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/D48OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/D48OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93       JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS     ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/51-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
```

```
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/51-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/51-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/51-OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93       JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/51-OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/51-OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93       JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/67-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /TEMPE/67-OUT/FLOW//5MIN/CC24HR/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/67-OUT/FLOW/01JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/02JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/67-OUT/FLOW/02JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
```

```
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /TEMPE/67-OUT/FLOW/03JUL1993/5MIN/CC24HR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    1:  /TEMPE/67-OUT/FLOW/03JUL1993/5MIN/CC24HR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  1
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/HC23/FLOW//5MIN/24HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    3:  /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/HC23/FLOW//5MIN/24HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    3:  /GCADMSFUTURE/HC23/FLOW/01JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93        JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/02JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    3:  /GCADMSFUTURE/HC23/FLOW/02JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93        JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/HC23/FLOW/03JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    2:  /GCADMSFUTURE/HC23/FLOW/03JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93        JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
-----DSS---ZWRITE Unit  71; Vers.    2:  /TEMPE/BSCST/FLOW/01JUL1993/5MIN/WEST/
-----DSS---ZWRITE Unit  71; Vers.    2:  /TEMPE/BSCST/FLOW/02JUL1993/5MIN/WEST/
-----DSS---ZWRITE Unit  71; Vers.    2:  /TEMPE/BSCST/FLOW/03JUL1993/5MIN/WEST/
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW//5MIN/24HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
```

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        Ending   date and time:  Jul 1, 1993  0100  (  34150   60)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS     ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW//5MIN/24HR FLU FWY/
        Time Window set.  Interval:     5  Number of data values:    601
        Starting date and time:  Jul 1, 1993  0100  (  34150   60)
        Ending   date and time:  Jul 3, 1993  0300  (  34152  180)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/01JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34150
        JULS: 01JUL93       JULSD: 01JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:   12  NDATA:  288  NREAD:  277  ILIM:  277
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/02JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/02JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  278   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34151
        JULS: 01JUL93       JULSD: 02JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  565
        After ZRDINF, Record found: T
        Pathname: /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/03JUL1993/5MIN/24HR FLU FWY/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    6:  /GCADMSFUTURE/SOFBASELINE&SPRR/FLOW/03JUL1993/5MIN/24HR FLU FWY/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  566   NVALS:  601    JULS:   34150  ISTIME:    60
        NLDATA:  288   JULSD:   34152
        JULS: 01JUL93       JULSD: 03JUL93
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   36  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
        Offset:       0,  Units: CFS     ,  Type:INST-VAL
1
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SB101	95.	12.08	11.	4.	2.	.07		
+	HYDROGRAPH AT	IF17	74.	14.17	41.	13.	6.	.00		
+	ROUTED TO	RS17	73.	14.75	40.	13.	6.	.00		
+									.38	14.75
+	HYDROGRAPH AT	IF25	60.	12.42	14.	4.	2.	.00		
+	ROUTED TO	RS25	60.	13.00	14.	4.	2.	.00		
+									.55	13.00
+	3 COMBINED AT	CP101	106.	13.50	62.	20.	10.	.07		
+	ROUTED TO	RS101	104.	13.75	61.	20.	10.	.07		
+									.46	13.75
+	HYDROGRAPH AT	SB102	251.	12.25	50.	16.	8.	.31		
+	DIVERSION TO	RET102	33.	12.25	9.	3.	1.	.31		
+	HYDROGRAPH AT	D102	251.	12.25	48.	13.	6.	.31		
+	HYDROGRAPH AT	IFD36	112.	13.75	46.	13.	6.	.00		
+	ROUTED TO	RSD36	112.	13.83	45.	13.	6.	.00		
+									.47	13.83
+	3 COMBINED AT	CP102	311.	12.33	152.	46.	22.	.38		
+	DIVERSION TO	P102	18.	12.33	15.	5.	3.	.38		
+	HYDROGRAPH AT	S102	293.	12.33	137.	41.	20.	.38		
+	DIVERSION TO	S102S	270.	12.33	131.	39.	19.	.38		
+	HYDROGRAPH AT	S102W	24.	12.33	6.	2.	1.	.38		
+	ROUTED TO	RS102W	14.	13.25	6.	2.	1.	.38		
+									.25	13.25
+	HYDROGRAPH AT	SB103	195.	12.25	34.	11.	5.	.23		
+	HYDROGRAPH AT	IFD21	44.	14.50	23.	8.	4.	.00		
+	ROUTED TO	RSD21	43.	14.67	23.	8.	4.	.00		
+									.47	14.67

```
                2 COMBINED AT
+                          CP103      195.  12.25      53.      18.      9.      .23
                DIVERSION TO
+                           P103       25.  12.25      24.      11.      5.      .23
                HYDROGRAPH AT
+                           S103      170.  12.25      29.       7.      4.      .23
                ROUTED TO
+                          RS103      161.  12.42      29.       7.      4.      .23
+                                                                                      .93
12.42

                HYDROGRAPH AT
+                          SB104      155.  12.33      38.      12.      6.      .25
                HYDROGRAPH AT
+                           P103       25.  11.75      24.      11.      5.      .00
                ROUTED TO
+                          RP103       25.  11.92      24.      11.      5.      .00
                4 COMBINED AT
+                          CP104      340.  12.42      97.      31.     15.      .86
                DIVERSION TO
+                           P104       56.  12.42      49.      19.     10.      .86
                HYDROGRAPH AT
+                           S104      284.  12.42      47.      12.      6.      .86
                DIVERSION TO
+                          S104S      187.  12.42      31.       8.      4.      .86
                HYDROGRAPH AT
+                          S104W       96.  12.42      16.       4.      2.      .86
                ROUTED TO
+                         RS104W       93.  12.75      16.       4.      2.      .86
+                                                                                      .48
12.75

                HYDROGRAPH AT
+                          SB105      177.  12.25      37.      12.      6.      .23
                DIVERSION TO
+                         RET105      177.  13.50      33.       9.      4.      .23
                HYDROGRAPH AT
+                           D105       35.  13.50       8.       3.      1.      .23
                ROUTED TO
+                          RS105       22.  14.17       8.       3.      1.      .23
+                                                                                      .22
14.17

                HYDROGRAPH AT
+                          SB106      146.  12.33      37.      12.      6.      .23
                3 COMBINED AT
+                          CP106      214.  12.67      59.      18.      9.     1.32
                DIVERSION TO
+                           P106        6.  12.67       6.       5.      2.     1.32
                HYDROGRAPH AT
+                           S106      208.  12.67      53.      13.      6.     1.32
                DIVERSION TO
+                          S106S      126.  12.67      35.       9.      4.     1.32
                HYDROGRAPH AT
+                          S106W       82.  12.67      18.       5.      2.     1.32
                ROUTED TO
+                         RS106W       70.  13.08      18.       5.      2.     1.32
+                                                                                      .42
13.08

                HYDROGRAPH AT
+                          SB107      190.  12.25      39.      12.      6.      .24
                HYDROGRAPH AT
+                          SB109       73.  12.17      12.       4.      2.      .08
```

+	2 COMBINED AT	CP107	262.	12.25	52.	16.	8.	.32		
+	ROUTED TO	RS107	250.	12.42	52.	16.	8.	.32	1.10	12.42
+	HYDROGRAPH AT	SB108	111.	12.67	42.	14.	7.	.25		
+	DIVERSION TO	RET108	111.	18.08	42.	13.	6.	.25		
+	HYDROGRAPH AT	D108	6.	18.08	4.	1.	1.	.25		
+	HYDROGRAPH AT	SB110	54.	12.25	13.	4.	2.	.08		
+	4 COMBINED AT	CP108	312.	12.42	82.	26.	13.	1.97		
+	ROUTED TO	RS108	306.	12.67	82.	26.	13.	1.97	.86	12.67
+	HYDROGRAPH AT	SB111	40.	12.17	6.	2.	1.	.03		
+	HYDROGRAPH AT	IF34	74.	12.42	47.	15.	7.	.00		
+	ROUTED TO	RS34	74.	13.42	47.	15.	7.	.00	.37	13.83
+	HYDROGRAPH AT	IF44B	118.	12.25	55.	14.	7.	.00		
+	ROUTED TO	RS44B	118.	12.75	54.	14.	7.	.00	.49	12.92
+	HYDROGRAPH AT	IPMAIN	64.	.00	64.	64.	64.	.00		
+	4 COMBINED AT	CP111	265.	12.67	170.	94.	79.	.03		
+	DIVERSION TO	P111	64.	12.67	62.	49.	45.	.03		
+	HYDROGRAPH AT	S111	201.	12.67	108.	46.	34.	.03		
+	DIVERSION TO	S111S	82.	12.67	44.	19.	14.	.03		
+	HYDROGRAPH AT	S111W	119.	12.67	63.	26.	20.	.03		
+	ROUTED TO	RS111W	118.	13.00	63.	26.	20.	.03	.51	13.00
+	HYDROGRAPH AT	SB112	187.	12.25	36.	12.	6.	.22		
+	HYDROGRAPH AT	P111	64.	12.00	62.	49.	45.	.00		
+	ROUTED TO	RP111	64.	12.17	62.	49.	45.	.00		
+	3 COMBINED AT	CP112	282.	12.67	160.	87.	70.	.25		
+	DIVERSION TO	P112	83.	12.67	83.	67.	61.	.25		

```
                HYDROGRAPH AT
+                          S112      199.  12.67       78.       19.       9.      .25
                ROUTED TO
+                          RS112     195.  12.83       78.       19.       9.      .25
+                                                                                          .67
12.83

                HYDROGRAPH AT
+                          S102S     270.  12.33      131.       39.      19.      .00
                ROUTED TO
+                          RS102S    259.  12.50      130.       39.      19.      .00
+                                                                                          .78
12.50

                HYDROGRAPH AT
+                          P102       18.  12.00       15.        5.       3.      .00
                ROUTED TO
+                          RP102      18.  12.17       15.        5.       3.      .00
                HYDROGRAPH AT
+                          SB113     172.  12.33       41.       13.       6.      .25
                HYDROGRAPH AT
+                          P112       83.  11.67       83.       67.      61.      .00
                ROUTED TO
+                          RP112      83.  11.83       83.       67.      61.      .00
                5 COMBINED AT
+                          CP113     711.  12.50      343.      143.      98.      .50
                DIVERSION TO
+                          P113       83.  12.50       83.       76.      65.      .50
                HYDROGRAPH AT
+                          S113      628.  12.50      260.       68.      33.      .50
                DIVERSION TO
+                          S113S     240.  12.50       99.       26.      12.      .50
                HYDROGRAPH AT
+                          S113W     388.  12.50      161.       42.      20.      .50
                ROUTED TO
+                          RS113W    385.  12.67      160.       42.      20.      .50
+                                                                                          1.04
12.67

                HYDROGRAPH AT
+                          S104S     187.  12.42       31.        8.       4.      .00
                ROUTED TO
+                          RS104S    144.  12.92       31.        8.       4.      .00
+                                                                                          2.08
12.92

                HYDROGRAPH AT
+                          SB114     141.  12.42       40.       13.       6.      .25
                HYDROGRAPH AT
+                          P113       83.  11.08       83.       76.      65.      .00
                ROUTED TO
+                          RP113      83.  11.25       83.       76.      65.      .00
                HYDROGRAPH AT
+                          P104       56.  11.92       49.       19.      10.      .00
                ROUTED TO
+                          RP104      56.  12.08       49.       19.      10.      .00
                5 COMBINED AT
+                          CP114     760.  12.75      360.      157.     104.      .75
                DIVERSION TO
+                          P114      166.  12.75      165.      108.      81.      .75
                HYDROGRAPH AT
+                          S114      594.  12.75      195.       49.      23.      .75
                DIVERSION TO
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```
+                    S114S     410.   12.75     138.     35.     17.     .75
        HYDROGRAPH AT
+                    S114W     184.   12.75      57.     14.      7.     .75
        ROUTED TO
+                   RS114W     181.   13.00      57.     14.      7.     .75
+                                                                              .75
13.00
        HYDROGRAPH AT
+                    S106S     126.   12.67      35.      9.      4.     .00
        ROUTED TO
+                   RS106S     115.   13.00      35.      9.      4.     .00
+                                                                              .58
13.00
        HYDROGRAPH AT
+                     P106       6.    9.75       6.      5.      2.     .00
        ROUTED TO
+                    RP106       6.   10.00       6.      5.      2.     .00
        HYDROGRAPH AT
+                    SB115     144.   12.42      42.     13.      6.     .26
        DIVERSION TO
+                   RET115     144.   12.75      19.      6.      3.     .26
        HYDROGRAPH AT
+                     D115     130.   12.75      27.      8.      4.     .26
        HYDROGRAPH AT
+                     P114     166.   11.92     165.    108.     81.     .00
        ROUTED TO
+                    RP114     166.   12.08     165.    108.     81.     .00
        5 COMBINED AT
+                    CP115     582.   12.92     290.    144.     98.    1.01
        DIVERSION TO
+                     P115     166.   12.92     166.    113.     83.    1.01
        HYDROGRAPH AT
+                     S115     416.   12.92     124.     31.     15.    1.01
        DIVERSION TO
+                    S115S     413.   12.92     123.     31.     15.    1.01
        HYDROGRAPH AT
+                    S115W       3.   12.92       0.      0.      0.    1.01
        ROUTED TO
+                   RS115W       2.   14.42       0.      0.      0.    1.01
+                                                                              .05
14.42
        HYDROGRAPH AT
+                    SB116     115.   12.58      41.     13.      6.     .24
        HYDROGRAPH AT
+                    SB117      63.   12.25      15.      5.      2.     .08
        HYDROGRAPH AT
+                     P115     166.   12.00     166.    113.     83.     .00
        ROUTED TO
+                    RP115     166.   12.17     166.    113.     83.     .00
        5 COMBINED AT
+                    CP116     635.   12.58     301.    157.    105.    3.30
        DIVERSION TO
+                     P116     203.   12.58     200.    132.     93.    3.30
        HYDROGRAPH AT
+                     S116     432.   12.58     101.     25.     12.    3.30
        ROUTED TO
+                    RS116     419.   12.83     101.     25.     12.    3.30
+                                                                              1.19
12.83
```

+	HYDROGRAPH AT	SB118	206.	12.25	40.	12.	6.	.22	
+	HYDROGRAPH AT	IP119	21.	.00	21.	21.	21.	.00	
+	HYDROGRAPH AT	S111S	82.	12.67	44.	19.	14.	.00	
+	ROUTED TO	RS111S	81.	13.17	44.	19.	14.	.00	
+ 13.17									.39
+	HYDROGRAPH AT	IFD48	167.	12.42	38.	11.	5.	.00	
+	ROUTED TO	RSD48	167.	12.83	38.	11.	5.	.00	
+ 12.83									.56
+	4 COMBINED AT	CP118	380.	12.67	143.	63.	47.	.22	
+	DIVERSION TO	P118	64.	12.67	60.	43.	37.	.22	
+	HYDROGRAPH AT	S118	316.	12.67	83.	21.	10.	.22	
+	DIVERSION TO	S118S	112.	12.67	29.	7.	3.	.22	
+	HYDROGRAPH AT	S118W	204.	12.67	54.	13.	6.	.22	
+	ROUTED TO	RS118W	194.	12.92	54.	13.	6.	.22	
+ 12.92									.62
+	HYDROGRAPH AT	SB119	156.	12.25	31.	10.	5.	.18	
+	2 COMBINED AT	CP119	260.	12.83	84.	23.	11.	.40	
+	DIVERSION TO	P119	21.	12.83	18.	7.	3.	.40	
+	HYDROGRAPH AT	S119	239.	12.83	67.	17.	8.	.40	
+	ROUTED TO	RS119	237.	12.92	67.	17.	8.	.40	
+ 12.92									.94
+	HYDROGRAPH AT	SB120	151.	12.17	22.	7.	3.	.15	
+	2 COMBINED AT	CP120	289.	12.42	88.	23.	11.	.55	
+	ROUTED TO	RS120	285.	12.50	88.	23.	11.	.55	
+ 12.50									.77
+	HYDROGRAPH AT	IP122	14.	.00	14.	14.	14.	.00	
+	HYDROGRAPH AT	S113S	240.	12.50	99.	26.	12.	.00	
+	ROUTED TO	RS113S	229.	12.75	98.	26.	12.	.00	
+ 12.75									.78
+	HYDROGRAPH AT	SB121	132.	12.25	28.	9.	4.	.16	
	4 COMBINED AT								

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+                    CP121      612.  12.67      226.      73.      42.      .71
        DIVERSION TO
+                    P121        45.  12.67       45.      27.      20.      .71
        HYDROGRAPH AT
+                    S121       567.  12.67      181.      45.      22.      .71
        DIVERSION TO
+                    S121S      356.  12.67      123.      31.      15.      .71
        HYDROGRAPH AT
+                    S121W      211.  12.67       58.      15.       7.      .71
        ROUTED TO
+                    RS121W     199.  13.00       58.      15.       7.      .71
+                                                                                 1.04
13.00
        HYDROGRAPH AT
+                    S114S      410.  12.75      138.      35.      17.      .00
        ROUTED TO
+                    RS114S     406.  12.92      138.      35.      17.      .00
+                                                                                 1.62
12.92
        HYDROGRAPH AT
+                    SB122      161.  12.42       40.      12.       6.      .26
        DIVERSION TO
+                    RET122     161.    .00       40.      12.       6.      .26
        HYDROGRAPH AT
+                    D122         0.    .00        0.       0.       0.      .26
        3 COMBINED AT
+                    CP122      599.  12.92      196.      49.      24.      .97
        DIVERSION TO
+                    P122        14.  12.92       13.       3.       2.      .97
        HYDROGRAPH AT
+                    S122       585.  12.92      182.      46.      22.      .97
        DIVERSION TO
+                    S122S      294.  12.92       96.      24.      12.      .97
        HYDROGRAPH AT
+                    S122W      291.  12.92       87.      22.      10.      .97
        ROUTED TO
+                    RS122W     278.  13.25       86.      22.      10.      .97
+                                                                                 1.26
13.25
        HYDROGRAPH AT
+                    S115S      413.  12.92      123.      31.      15.      .00
        ROUTED TO
+                    RS115S     400.  13.08      123.      31.      15.      .00
+                                                                                 1.06
13.08
        HYDROGRAPH AT
+                    SB123      147.  12.42       43.      14.       7.      .26
        3 COMBINED AT
+                    CP123      761.  13.17      248.      66.      32.     1.23
        DIVERSION TO
+                    P123        33.  13.17       33.      12.       6.     1.23
        HYDROGRAPH AT
+                    S123       728.  13.17      215.      54.      26.     1.23
        DIVERSION TO
+                    S123S      458.  13.17      145.      36.      17.     1.23
        HYDROGRAPH AT
+                    S123W      269.  13.17       70.      18.       8.     1.23
        ROUTED TO
+                    RS123W     250.  13.42       70.      18.       8.     1.23
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+                                                                                                  .97
13.42

          HYDROGRAPH AT
+                          SB124      114.  12.75      48.      16.      8.      .25

          HYDROGRAPH AT
+                          SB125       87.  12.42      27.       9.      5.      .13

          4 COMBINED AT
+                          CP124      682.  13.33     244.      68.     33.     4.91

          ROUTED TO
+                          RS124      674.  13.42     244.      68.     33.     4.91
+                                                                                                 1.64
13.42

          HYDROGRAPH AT
+                          SB126      216.  12.17      34.      10.      5.      .18

          DIVERSION TO
+                           P126       71.  12.17      22.       7.      3.      .18

          HYDROGRAPH AT
+                           S126      145.  12.17      12.       3.      1.      .18

          DIVERSION TO
+                          S126S       90.  12.17       7.       2.      1.      .18

          HYDROGRAPH AT
+                          S126W       55.  12.17       5.       1.      1.      .18

          ROUTED TO
+                         RS126W       45.  12.58       5.       1.      1.      .18
+                                                                                                 .63
12.58

          HYDROGRAPH AT
+                          IP128        7.    .00       7.       7.      7.      .00

          HYDROGRAPH AT
+                          S118S      112.  12.67      29.       7.      3.      .00

          ROUTED TO
+                         RS118S      106.  13.00      29.       7.      3.      .00
+                                                                                                 .41
13.00

          HYDROGRAPH AT
+                          SB127      286.  12.25      48.      14.      7.      .25

          HYDROGRAPH AT
+                           P118       64.  11.75      60.      43.     37.      .00

          ROUTED TO
+                          RP118       64.  11.92      60.      43.     37.      .00

          5 COMBINED AT
+                          CP127      369.  12.25     148.      72.     55.      .43

          DIVERSION TO
+                           P127       64.  12.25      64.      51.     44.      .43

          HYDROGRAPH AT
+                           S127      305.  12.25      85.      21.     10.      .43

          DIVERSION TO
+                          S127S      229.  12.25      69.      17.      8.      .43

          HYDROGRAPH AT
+                          S127W       76.  12.25      15.       4.      2.      .43

          ROUTED TO
+                         RS127W       72.  12.50      15.       4.      2.      .43
+                                                                                                 .68
12.50

          HYDROGRAPH AT
+                          SB128      171.  12.25      30.       9.      4.      .19

          2 COMBINED AT
+                          CP128      219.  12.33      45.      13.      6.      .62

          DIVERSION TO
+                           P128        7.  12.33       7.       4.      2.      .62
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                HYDROGRAPH AT
+                       S128     212.  12.33     38.     10.      5.     .62
                ROUTED TO
+                      RS128     204.  12.50     38.     10.      5.     .62
+                                                                              1.11
12.50

                HYDROGRAPH AT
+                      S121S     356.  12.67    123.     31.     15.     .00
                ROUTED TO
+                     RS121S     347.  12.83    122.     31.     15.     .00
+                                                                              1.07
12.83

                HYDROGRAPH AT
+                      SB129     167.  12.42     44.     14.      7.     .31
                DIVERSION TO
+                     RET129     167.  12.58     18.      5.      2.     .31
                HYDROGRAPH AT
+                       D129     161.  12.58     32.      9.      4.     .31
                HYDROGRAPH AT
+                       P121      45.  11.75     45.     27.     20.     .00
                ROUTED TO
+                      RP121      45.  11.92     45.     27.     20.     .00
                4 COMBINED AT
+                      CP129     700.  12.75    236.     76.     44.     .93
                DIVERSION TO
+                       P129      45.  12.75     45.     28.     21.     .93
                HYDROGRAPH AT
+                       S129     655.  12.75    191.     48.     23.     .93
                DIVERSION TO
+                      S129S     505.  12.75    143.     36.     17.     .93
                HYDROGRAPH AT
+                      S129W     151.  12.75     48.     12.      6.     .93
                ROUTED TO
+                     RS129W     146.  13.00     47.     12.      6.     .93
+                                                                              1.21
13.00

                HYDROGRAPH AT
+                      S122S     294.  12.92     96.     24.     12.     .00
                ROUTED TO
+                     RS122S     288.  13.08     96.     24.     12.     .00
+                                                                              1.43
13.08

                HYDROGRAPH AT
+                      SB130     135.  12.42     36.     11.      5.     .25
                3 COMBINED AT
+                      CP130     521.  13.00    177.     47.     23.    1.18
                DIVERSION TO
+                      S130S     368.  13.00    125.     33.     16.    1.18
                HYDROGRAPH AT
+                      S130W     153.  13.00     52.     14.      7.    1.18
                ROUTED TO
+                     RS130W     148.  13.33     52.     14.      7.    1.18
+                                                                              1.42
13.33

                HYDROGRAPH AT
+                      S123S     458.  13.17    145.     36.     17.     .00
                ROUTED TO
+                     RS123S     445.  13.33    144.     36.     17.     .00
+                                                                              1.00
13.33
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                HYDROGRAPH AT
+                          SB131      146.  12.42      39.      12.      6.      .25
                HYDROGRAPH AT
+                           P123       33.  11.92      33.      12.      6.      .00
                ROUTED TO
+                          RP123       33.  12.08      33.      12.      6.      .00
                4 COMBINED AT
+                          CP131      693.  13.33     265.      75.     36.     1.43
                DIVERSION TO
+                           P131       72.  13.33      72.      26.     13.     1.43
                HYDROGRAPH AT
+                           S131      621.  13.33     194.      48.     23.     1.43
                DIVERSION TO
+                          S131S      517.  13.33     158.      40.     19.     1.43
                HYDROGRAPH AT
+                          S131W      103.  13.33      36.       9.      4.     1.43
                ROUTED TO
+                         RS131W       99.  13.67      35.       9.      4.     1.43
+                                                                                      1.14
13.67
                HYDROGRAPH AT
+                          SB132      170.  12.33      40.      13.      6.      .25
                3 COMBINED AT
+                          CP132      808.  13.42     317.      90.     43.     6.59
                ROUTED TO
+                          RS132      801.  13.50     317.      90.     43.     6.59
+                                                                                      1.79
13.50
                HYDROGRAPH AT
+                          SB133      285.  12.25      50.      14.      7.      .28
                HYDROGRAPH AT
+                          S126S       90.  12.17       7.       2.      1.      .00
                ROUTED TO
+                         RS126S       76.  12.50       7.       2.      1.      .00
+                                                                                       .58
12.50
                HYDROGRAPH AT
+                           IF51       58.  12.58      27.      10.      5.      .00
                ROUTED TO
+                           RS51       56.  13.08      27.      10.      5.      .00
+                                                                                       .34
13.08
                HYDROGRAPH AT
+                           IF67       57.  13.58      27.       9.      4.      .00
                ROUTED TO
+                           RS67       56.  13.92      27.       9.      4.      .00
+                                                                                       .34
13.92
                4 COMBINED AT
+                          CP133      342.  12.42     108.      35.     17.      .28
                DIVERSION TO
+                           P133       18.  12.42      18.      12.      6.      .28
                HYDROGRAPH AT
+                           S133      324.  12.42      90.      23.     11.      .28
                DIVERSION TO
+                          S133S       45.  12.42      13.       3.      2.      .28
                HYDROGRAPH AT
+                          S133W      278.  12.42      77.      19.      9.      .28
                ROUTED TO
+                         RS133W      268.  12.58      77.      19.      9.      .28
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+                                                                                                  .80
12.58
          HYDROGRAPH AT
+                          P133       18.   11.33        18.        12.        6.       .00
          ROUTED TO
+                          RP133      18.   11.50        18.        12.        6.       .00
          2 COMBINED AT
+                          CP134A    286.   12.58        95.        31.       15.       .28
          HYDROGRAPH AT
+                          S127S     229.   12.25        69.        17.        8.       .00
          ROUTED TO
+                          RS127S    224.   12.50        69.        17.        8.       .00
+                                                                                                  .60
12.50
          HYDROGRAPH AT
+                          SB134     263.   12.25        49.        15.        7.       .25
          DIVERSION TO
+                          RET134    263.   13.50        45.        12.        6.       .25
          HYDROGRAPH AT
+                          D134       40.   13.50         8.         3.        1.       .25
          HYDROGRAPH AT
+                          P126       71.   11.92        22.         7.        3.       .00
          ROUTED TO
+                          RP126      71.   12.00        22.         7.        3.       .00
          HYDROGRAPH AT
+                          P127       64.   11.17        64.        51.       44.       .00
          ROUTED TO
+                          RP127      64.   11.33        64.        51.       44.       .00
          5 COMBINED AT
+                          CP134     646.   12.58       254.       109.       73.       .53
          DIVERSION TO
+                          P134      286.   12.58       199.        95.       66.       .53
          HYDROGRAPH AT
+                          S134      360.   12.58        56.        14.        7.       .53
          DIVERSION TO
+                          S134S     186.   12.58        31.         8.        4.       .53
          HYDROGRAPH AT
+                          S134W     174.   12.58        24.         6.        3.       .53
          ROUTED TO
+                          RS134W    171.   12.67        24.         6.        3.       .53
+                                                                                                  .66
12.67
          HYDROGRAPH AT
+                          SB135     112.   12.25        24.         7.        4.       .12
          2 COMBINED AT
+                          CP135     249.   12.58        48.        13.        6.       .65
          DIVERSION TO
+                          P135       26.   12.58        14.         5.        2.       .65
          HYDROGRAPH AT
+                          S135      223.   12.58        34.         9.        4.       .65
          ROUTED TO
+                          RS135     219.   12.75        34.         9.        4.       .65
+                                                                                                  .75
12.75
          HYDROGRAPH AT
+                          SB136     128.   12.25        23.         7.        3.       .12
          DIVERSION TO
+                          RET136    128.     .00        23.         7.        3.       .12
          HYDROGRAPH AT
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+                          D136        0.     .00        0.        0.        0.      .12
          HYDROGRAPH AT
+                          P135       26.   11.83       14.        5.        2.      .00
          ROUTED TO
+                         RP135       26.   11.92       14.        5.        2.      .00
          3 COMBINED AT
+                         CP136      245.   12.75       48.       13.        6.      .77
          DIVERSION TO
+                          P136       39.   12.75       19.        6.        3.      .77
          HYDROGRAPH AT
+                          S136      206.   12.75       29.        7.        4.      .77
          DIVERSION TO
+                         S136S       58.   12.75        9.        2.        1.      .77
          HYDROGRAPH AT
+                         S136W      148.   12.75       21.        5.        3.      .77
          ROUTED TO
+                        RS136W      137.   13.00       21.        5.        3.      .77
+                                                                                          .59
13.00
          HYDROGRAPH AT
+                         S129S      505.   12.75      143.       36.       17.      .00
          ROUTED TO
+                        RS129S      492.   12.83      143.       36.       17.      .00
+                                                                                         1.06
12.83
          HYDROGRAPH AT
+                         SB137      213.   12.33       44.       13.        6.      .25
          HYDROGRAPH AT
+                          P129       45.   11.83       45.       28.       21.      .00
          ROUTED TO
+                         RP129       45.   12.00       45.       28.       21.      .00
          HYDROGRAPH AT
+                          P136       39.   12.17       19.        6.        3.      .00
          ROUTED TO
+                         RP136       39.   12.33       19.        6.        3.      .00
          5 COMBINED AT
+                         CP137      813.   12.92      268.       89.       50.     1.02
          DIVERSION TO
+                          P137      134.   12.92      117.       51.       32.     1.02
          HYDROGRAPH AT
+                          S137      679.   12.92      151.       38.       18.     1.02
          DIVERSION TO
+                         S137S      561.   12.92      132.       33.       16.     1.02
          HYDROGRAPH AT
+                         S137W      118.   12.92       19.        5.        2.     1.02
          ROUTED TO
+                        RS137W      105.   13.25       19.        5.        2.     1.02
+                                                                                          .61
13.25
          HYDROGRAPH AT
+                         S130S      368.   13.00      125.       33.       16.      .00
          ROUTED TO
+                        RS130S      362.   13.17      125.       33.       16.      .00
+                                                                                         1.44
13.17
          HYDROGRAPH AT
+                         SB138      201.   12.33       40.       12.        6.      .25
          HYDROGRAPH AT
+                          P137      134.   11.92      117.       51.       32.      .00
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                ROUTED TO
+                          RP137      134.   12.08      117.      51.      32.      .00
                4 COMBINED AT
+                          CP138      657.   13.17      299.     101.      56.     1.27
                DIVERSION TO
+                           P138      134.   13.17      129.      59.      36.     1.27
                HYDROGRAPH AT
+                           S138      523.   13.17      170.      42.      20.     1.27
                DIVERSION TO
+                          S138S      194.   13.17       66.      16.       8.     1.27
                HYDROGRAPH AT
+                          S138W      328.   13.17      104.      26.      13.     1.27
                ROUTED TO
+                         RS138W      321.   13.33      104.      26.      13.     1.27
+                                                                                          1.02
13.33
                HYDROGRAPH AT
+                          S131S      517.   13.33      158.      40.      19.      .00
                ROUTED TO
+                         RS131S      507.   13.42      158.      40.      19.      .00
+                                                                                          1.00
13.42
                HYDROGRAPH AT
+                          SB139      182.   12.33       41.      13.       6.      .25
                DIVERSION TO
+                         RET139       12.   12.33        6.       2.       1.      .25
                HYDROGRAPH AT
+                           D139      182.   12.33       40.      11.       5.      .25
                HYDROGRAPH AT
+                           P131       72.   12.00       72.      26.      13.      .00
                ROUTED TO
+                          RP131       72.   12.17       72.      26.      13.      .00
                4 COMBINED AT
+                          CP139      949.   13.42      372.     103.      50.     1.52
                DIVERSION TO
+                           P139       62.   13.42       62.      25.      12.     1.52
                HYDROGRAPH AT
+                           S139      887.   13.42      310.      78.      37.     1.52
                DIVERSION TO
+                          S139S      754.   13.42      279.      70.      34.     1.52
                HYDROGRAPH AT
+                          S139W      133.   13.42       31.       8.       4.     1.52
                ROUTED TO
+                         RS139W      124.   13.75       31.       8.       4.     1.52
+                                                                                           .64
13.75
                HYDROGRAPH AT
+                          SB140      179.   12.33       47.      16.       8.      .25
                DIVERSION TO
+                         RET140       10.   12.33        6.       2.       1.      .25
                HYDROGRAPH AT
+                           D140      179.   12.33       47.      14.       7.      .25
                HYDROGRAPH AT
+                           P139       62.   11.83       62.      25.      12.      .00
                ROUTED TO
+                          RP139       62.   12.00       62.      25.      12.      .00
                4 COMBINED AT
+                          CP140     1021.   13.58      455.     137.      66.     8.36
                DIVERSION TO
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+                          P140      83.  13.58      83.      43.      21.    8.36
          HYDROGRAPH AT
+                          S140     938.  13.58     372.      94.      45.    8.36
          ROUTED TO
+                         RS140     927.  13.67     371.      94.      45.    8.36
+                                                                                  2.23
13.67
          HYDROGRAPH AT
+                         SB141     297.  12.25      60.      18.       9.     .32
          HYDROGRAPH AT
+                          IF71      30.  19.00      30.      30.      23.     .10
          ROUTED TO
+                          RC71      30.  19.33      30.      30.      23.     .10
+                                                                                  .39
19.42
          HYDROGRAPH AT
+                         S133S      45.  12.42      13.       3.       2.     .00
          ROUTED TO
+                        RS133S      40.  13.17      13.       3.       2.     .00
+                                                                                  .86
13.17
          3 COMBINED AT
+                         CP141     327.  12.25     101.      51.      34.     .42
          ROUTED TO
+                         RC141     321.  12.33     101.      51.      34.     .42
+                                                                                 3.86
12.33
          HYDROGRAPH AT
+                         S134S     186.  12.58      31.       8.       4.     .00
          ROUTED TO
+                        RS134S     180.  12.75      31.       8.       4.     .00
+                                                                                  .57
12.75
          HYDROGRAPH AT
+                         SB142      97.  12.83      43.      13.       6.     .23
          3 COMBINED AT
+                         CP142     529.  12.67     175.      72.      44.     .65
          ROUTED TO
+                         BS142      60.  12.17      60.      60.      60.     .65
+                                                                               1218.37
16.42
          ROUTED TO
+                         RC142      60.  12.33      60.      60.      60.     .65
+                                                                                 1.93
12.33
          HYDROGRAPH AT
+                         S136S      58.  12.75       9.       2.       1.     .00
          ROUTED TO
+                        RS136S      53.  13.17       9.       2.       1.     .00
+                                                                                  .68
13.17
          HYDROGRAPH AT
+                         SB143     188.  12.33      45.      14.       7.     .23
          HYDROGRAPH AT
+                          P134     286.  12.17     199.      95.      66.     .00
          ROUTED TO
+                         RP134     286.  12.25     199.      95.      66.     .00
          4 COMBINED AT
+                         CP143     534.  12.33     312.     171.     133.     .88
          ROUTED TO
+                         BS143     429.  13.67     259.     147.     110.     .88
+                                                                               1222.96
13.58
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                ROUTED TO
+                          RC143     429.  13.67     259.     147.     109.     .88
+                                                                                      4.61
13.67

                HYDROGRAPH AT
+                          S137S     561.  12.92     132.      33.      16.     .00

                ROUTED TO
+                          RS137S    549.  13.00     132.      33.      16.     .00
+                                                                                      1.32
13.00

                HYDROGRAPH AT
+                          SB144     133.  12.58      45.      14.       7.     .23

                DIVERSION TO
+                          RET144     30.  12.58       6.       2.       1.     .23

                HYDROGRAPH AT
+                          D144      133.  12.58      44.      12.       6.     .23

                3 COMBINED AT
+                          CP144     966.  13.17     422.     191.     131.    1.11

                ROUTED TO
+                          RC144     964.  13.25     422.     191.     131.    1.11
+                                                                                      6.92
13.25

                HYDROGRAPH AT
+                          S138S     194.  13.17      66.      16.       8.     .00

                ROUTED TO
+                          RS138S    185.  13.33      66.      16.       8.     .00
+                                                                                      1.11
13.33

                HYDROGRAPH AT
+                          SB145     211.  12.33      46.      14.       7.     .24

                HYDROGRAPH AT
+                          P138      134.  11.92     129.      59.      36.     .00

                ROUTED TO
+                          RP138     134.  12.08     129.      59.      36.     .00

                HYDROGRAPH AT
+                          SB148      60.  12.67      33.      12.       6.     .15

                5 COMBINED AT
+                          CP145    1404.  13.25     688.     280.     187.    1.50

                ROUTED TO
+                          BS145     741.  14.75     415.     240.     209.    1.50
+                                                                                   1219.41
14.75

                ROUTED TO
+                          RC145     739.  14.83     415.     240.     209.    1.50
+                                                                                      4.84
14.83

                HYDROGRAPH AT
+                          S139S     754.  13.42     279.      70.      34.     .00

                ROUTED TO
+                          RS139S    739.  13.50     277.      70.      34.     .00
+                                                                                      1.74
13.50

                HYDROGRAPH AT
+                          SB146     183.  12.33      43.      13.       6.     .24

                DIVERSION TO
+                          RET146      8.  12.33       4.       2.       1.     .24

                HYDROGRAPH AT
+                          D146      183.  12.33      42.      12.       6.     .24

                HYDROGRAPH AT
+                          SB149      81.  12.08      14.       5.       2.     .06

                4 COMBINED AT
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+                    CP146     1099.  14.75     716.     326.     250.     1.80
        ROUTED TO
+                    RC146     1094.  14.83     715.     326.     250.     1.80
+                                                                          6.22
14.83
        DIVERSION TO
+                    P146A      175.  14.83     175.     175.     175.     1.80
        HYDROGRAPH AT
+                    S146A      919.  14.83     540.     151.      75.     1.80
        DIVERSION TO
+                    P146B      459.  14.83     270.      75.      38.     1.80
        HYDROGRAPH AT
+                    S146B      459.  14.83     270.      75.      38.     1.80
        HYDROGRAPH AT
+                    SB147      137.  12.42      37.      12.       6.      .23
        HYDROGRAPH AT
+                     P140       83.  11.42      83.      43.      21.      .00
        ROUTED TO
+                    RP140       83.  11.58      83.      43.      21.      .00
        4 COMBINED AT
+                    CP147     1456.  13.58     758.     224.     109.    10.39
        ROUTED TO
+                    BS147      953.  14.83     515.     147.      71.    10.39
+                                                                       1215.91
14.83
        HYDROGRAPH AT
+                    P146B      459.  14.83     270.      75.      38.      .00
        2 COMBINED AT
+                   CP147A     1412.  14.83     746.     221.     109.    10.39
        ROUTED TO
+                   RP147A     1412.  14.83     746.     221.     109.    10.39
        HYDROGRAPH AT
+                   IFHC23      571.  21.42     315.      96.      46.      .00
        2 COMBINED AT
+                   CPCSTB     1412.  14.83     746.     317.     155.    10.39
        ROUTED TO
+                    BSCST        0.    .00       0.       0.       0.    10.39
+                                                                       1213.25
49.92
        HYDROGRAPH AT
+                    SB202      169.  12.17      28.       9.       4.      .16
        HYDROGRAPH AT
+                    IP208       16.    .00      16.      16.      16.      .00
        2 COMBINED AT
+                    CP202      185.  12.17      44.      25.      20.      .16
        DIVERSION TO
+                     P202       32.  12.17      26.      21.      18.      .16
        HYDROGRAPH AT
+                     S202      153.  12.17      18.       4.       2.      .16
        DIVERSION TO
+                    S202S       83.  12.17      10.       2.       1.      .16
        HYDROGRAPH AT
+                    S202W       71.  12.17       8.       2.       1.      .16
        ROUTED TO
+                   RS202W       66.  12.42       8.       2.       1.      .16
+                                                                           .52
12.42
        HYDROGRAPH AT
+                    SB203      244.  12.08      30.       9.       4.      .18
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                2 COMBINED AT
+                          CP203      259.   12.17      37.      11.       5.      .34
                DIVERSION TO
+                           P203       59.   12.17      20.       7.       3.      .34
                HYDROGRAPH AT
+                           S203      200.   12.17      17.       4.       2.      .34
                ROUTED TO
+                          RS203      173.   12.42      17.       4.       2.      .34
+                                                                                          .87
12.42
                HYDROGRAPH AT
+                           P203       59.   11.83      20.       7.       3.      .00
                ROUTED TO
+                          RP203       59.   12.00      20.       7.       3.      .00
                HYDROGRAPH AT
+                          SB204      271.   12.17      40.      13.       6.      .24
                DIVERSION TO
+                         RET204      185.   12.17      13.       4.       2.      .24
                HYDROGRAPH AT
+                           D204      271.   12.17      32.       9.       4.      .24
                3 COMBINED AT
+                          CP204      447.   12.33      68.      20.      10.      .58
                DIVERSION TO
+                          S204N      286.   12.33      44.      13.       6.      .58
                HYDROGRAPH AT
+                          S204W      161.   12.33      24.       6.       3.      .58
                ROUTED TO
+                         RS204W      152.   12.50      24.       6.       3.      .58
+                                                                                          .62
12.50
                HYDROGRAPH AT
+                          SB206      193.   12.08      21.       7.       3.      .14
                DIVERSION TO
+                         RET206      105.   12.08       7.       2.       1.      .14
                HYDROGRAPH AT
+                           D206      193.   12.08      17.       5.       2.      .14
                2 COMBINED AT
+                          CP206      229.   12.33      40.      11.       5.      .72
                ROUTED TO
+                          RS206      225.   12.42      40.      11.       5.      .72
+                                                                                          .52
12.42
                HYDROGRAPH AT
+                          SB207      148.   12.08      20.       6.       3.      .12
                2 COMBINED AT
+                          CP207      367.   12.08      59.      17.       8.      .84
                HYDROGRAPH AT
+                          S202S       83.   12.17      10.       2.       1.      .00
                ROUTED TO
+                         RS202S       68.   12.67      10.       2.       1.      .00
+                                                                                          .44
12.67
                HYDROGRAPH AT
+                          SB208      142.   12.25      27.       9.       4.      .17
                DIVERSION TO
+                         RET208       50.   12.25       6.       2.       1.      .17
                HYDROGRAPH AT
+                           D208      142.   12.25      24.       7.       3.      .17
                2 COMBINED AT
+                          CP208      164.   12.58      34.       9.       4.      .17
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+          DIVERSION TO
                          P208      16.  12.58       9.       3.       1.      .17
+          HYDROGRAPH AT
                          S208     148.  12.58      25.       6.       3.      .17
+          DIVERSION TO
                          S208S     58.  12.58      10.       2.       1.      .17
+          HYDROGRAPH AT
                          S208W     91.  12.58      15.       4.       2.      .17
+          ROUTED TO
                          RS208W    87.  12.75      15.       4.       2.      .17
+                                                                                     .45
12.75
+          HYDROGRAPH AT
                          SB209    203.  12.17      33.      10.       5.      .19
+          2 COMBINED AT
                          CP209    206.  12.25      48.      14.       7.      .36
+          DIVERSION TO
                          P209       9.  12.25       8.       4.       2.      .36
+          HYDROGRAPH AT
                          S209     197.  12.25      40.      10.       5.      .36
+          ROUTED TO
                          RS209    183.  12.50      40.      10.       5.      .36
+                                                                                     .85
12.50
+          HYDROGRAPH AT
                          SB210    151.  12.25      34.      11.       5.      .17
+          DIVERSION TO
                          RET210   151.  12.92      25.       7.       3.      .17
+          HYDROGRAPH AT
                          D210      75.  12.92      14.       4.       2.      .17
+          2 COMBINED AT
                          CP210    234.  12.92      53.      14.       7.      .54
+          DIVERSION TO
                          S210S     98.  12.92      23.       6.       3.      .54
+          HYDROGRAPH AT
                          S210W    136.  12.92      31.       8.       4.      .54
+          ROUTED TO
                          RS210W   129.  13.08      31.       8.       4.      .54
+                                                                                     .44
13.08
+          HYDROGRAPH AT
                          SB211    274.  12.25      47.      15.       7.      .26
+          2 COMBINED AT
                          CP211    276.  12.25      76.      23.      11.      .80
+          ROUTED TO
                          RS211    261.  12.42      76.      23.      11.      .80
+                                                                                     .61
12.42
+          HYDROGRAPH AT
                          SB212    244.  12.17      36.      12.       6.      .21
+          DIVERSION TO
                          RET212     4.  12.17       3.       1.       0.      .21
+          HYDROGRAPH AT
                          D212     244.  12.17      36.      11.       5.      .21
+          HYDROGRAPH AT
                          IP213     11.    .00      11.      11.      11.      .00
+          HYDROGRAPH AT
                          IP218     99.    .00      99.      99.      99.      .00
           4 COMBINED AT
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+                    CP212     561.  12.25     222.     144.     126.     1.00
        DIVERSION TO
                     P212       99.  12.25      99.      99.      99.     1.00
        HYDROGRAPH AT
+                    S212     462.  12.25     123.      45.      27.     1.00
        ROUTED TO
+                   RS212     462.  12.33     123.      45.      27.     1.00
+                                                                          .80
12.33
        HYDROGRAPH AT
+                   SB213     182.  12.17      27.       8.       4.      .19
        2 COMBINED AT
+                   CP213     618.  12.25     150.      53.      31.     1.19
        DIVERSION TO
+                   P213       11.  12.25      11.      11.      11.     1.19
        HYDROGRAPH AT
+                   S213     607.  12.25     139.      42.      20.     1.19
        2 COMBINED AT
+                    CPA     947.  12.25     198.      59.      29.     2.04
        HYDROGRAPH AT
+                  S208S      58.  12.58      10.       2.       1.      .00
        ROUTED TO
+                 RS208S      53.  12.83      10.       2.       1.      .00
+                                                                          .32
12.83
        HYDROGRAPH AT
+                   SB214     152.  12.25      33.      11.       5.      .17
        2 COMBINED AT
+                   CP214     153.  12.25      43.      13.       6.      .17
        DIVERSION TO
+                   S214S     121.  12.25      35.      11.       5.      .17
        HYDROGRAPH AT
+                   S214W      33.  12.25       8.       2.       1.      .17
        ROUTED TO
+                  RS214W      30.  12.92       8.       2.       1.      .17
+                                                                          .28
12.92
        HYDROGRAPH AT
+                    P209       9.  10.92       8.       4.       2.      .00
        ROUTED TO
+                   RP209       9.  11.08       8.       4.       2.      .00
        HYDROGRAPH AT
+                   SB215     141.  12.25      28.       9.       4.      .17
        3 COMBINED AT
+                   CP215     153.  12.25      44.      15.       7.      .33
        DIVERSION TO
+                   S215S      71.  12.25      22.       8.       4.      .33
        HYDROGRAPH AT
+                   S215W      82.  12.25      22.       8.       4.      .33
        ROUTED TO
+                  RS215W      75.  12.67      22.       8.       4.      .33
+                                                                          .43
12.67
        HYDROGRAPH AT
+                   S210S      98.  12.92      23.       6.       3.      .00
        ROUTED TO
+                  RS210S      90.  13.17      22.       6.       3.      .00
+                                                                          .44
13.17
        HYDROGRAPH AT
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+                    SB216     274.  12.25     46.     15.      7.     .24
        3 COMBINED AT
+                    CP216     304.  12.25     90.     28.     14.     .57
        DIVERSION TO
+                    S216S      89.  12.25     19.      5.      2.     .57
        HYDROGRAPH AT
+                    S216W     214.  12.25     70.     23.     11.     .57
        ROUTED TO
+                   RS216W     205.  12.50     70.     23.     11.     .57
+                                                                          .59
12.50
        HYDROGRAPH AT
+                    SB217     115.  12.17     20.      6.      3.     .11
        2 COMBINED AT
+                    CP217     292.  12.33     90.     30.     14.     .68
        DIVERSION TO
+                     P217       5.  12.33      5.      5.      2.     .68
        HYDROGRAPH AT
+                     S217     287.  12.33     85.     25.     12.     .68
        DIVERSION TO
+                    S217S     104.  12.33     34.     10.      5.     .68
        HYDROGRAPH AT
+                    S217W     183.  12.33     51.     15.      7.     .68
        ROUTED TO
+                   RS217W     177.  12.58     51.     15.      7.     .68
+                                                                          .50
12.58
        HYDROGRAPH AT
+                     P217       5.   1.92      5.      5.      2.     .00
        ROUTED TO
+                    RP217       5.   2.08      5.      5.      2.     .00
        HYDROGRAPH AT
+                    SB218      49.  12.17     11.      4.      2.     .06
        3 COMBINED AT
+                    CP218     218.  12.50     66.     23.     11.     .74
        DIVERSION TO
+                     P218      99.  12.50     52.     19.      9.     .74
        HYDROGRAPH AT
+                     S218     119.  12.50     15.      4.      2.     .74
        ROUTED TO
+                    RS218     106.  12.75     15.      4.      2.     .74
+                                                                          .34
12.75
        HYDROGRAPH AT
+                    SB219     213.  12.17     27.      9.      4.     .18
        2 COMBINED AT
+                    CP219     213.  12.17     42.     12.      6.     .92
        ROUTED TO
+                    BS219     130.  12.42     42.     12.      6.     .92
+                                                                      1204.81
12.42
        HYDROGRAPH AT
+                    S215S      71.  12.25     22.      8.      4.     .00
        ROUTED TO
+                   RS215S      69.  12.42     22.      8.      4.     .00
+                                                                          .50
12.42
        HYDROGRAPH AT
+                    SB221     109.  12.17     17.      6.      3.     .09
        2 COMBINED AT
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+                    CP221     151.  12.25     38.     13.     6.     .09
        ROUTED TO
+                    RC221     147.  12.42     38.     13.     6.     .09
+                                                                          2.55
12.42
        HYDROGRAPH AT
+                    S216S      89.  12.25     19.      5.     2.     .00
        ROUTED TO
+                   RS216S      83.  12.42     19.      5.     2.     .00
+                                                                           .38
12.42
        HYDROGRAPH AT
+                    SB222     134.  12.17     25.      8.     4.     .12
        3 COMBINED AT
+                    CP222     343.  12.33     83.     26.    13.     .21
        ROUTED TO
+                    RC222     329.  12.50     82.     26.    13.     .21
+                                                                          3.87
12.50
        HYDROGRAPH AT
+                    S217S     104.  12.33     34.     10.     5.     .00
        ROUTED TO
+                   RS217S     104.  12.42     34.     10.     5.     .00
+                                                                           .69
12.42
        HYDROGRAPH AT
+                    SB223     157.  12.17     27.      9.     4.     .13
        DIVERSION TO
+                   RET223      80.  12.17     10.      3.     1.     .13
        HYDROGRAPH AT
+                     D223     157.  12.17     22.      6.     3.     .13
        3 COMBINED AT
+                    CP223     532.  12.42    137.     43.    21.     .34
        ROUTED TO
+                    RC223     517.  12.50    137.     43.    21.     .34
+                                                                          4.74
12.50
        HYDROGRAPH AT
+                    SB224     145.  12.17     27.      9.     4.     .13
        DIVERSION TO
+                   RET224      67.  12.17      8.      3.     1.     .13
        HYDROGRAPH AT
+                     D224     145.  12.17     23.      6.     3.     .13
        2 COMBINED AT
+                    CP224     612.  12.50    160.     49.    24.     .47
        ROUTED TO
+                    RC224     598.  12.67    160.     49.    24.     .47
+                                                                          4.62
12.67
        HYDROGRAPH AT
+                    SB225     154.  12.25     32.     10.     5.     .17
        2 COMBINED AT
+                    CP225     700.  12.58    190.     59.    29.     .64
        ROUTED TO
+                    BS225     696.  12.67    190.     59.    28.     .64
+                                                                       1204.10
12.67
        2 COMBINED AT
+                      CPB     819.  12.67    231.     71.    34.    1.56
        2 COMBINED AT
+                      CPC    1501.  12.50    428.    130.    63.    3.59
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                HYDROGRAPH AT
+                          SB226      39.  12.33      11.       4.       2.      .05
                DIVERSION TO
+                          S226S      24.  12.33       7.       2.       1.      .05
                HYDROGRAPH AT
+                          S226W      15.  12.33       4.       1.       1.      .05
                ROUTED TO
+                         RS226W      12.  13.00       4.       1.       1.      .05
+                                                                                      .14
13.00

                HYDROGRAPH AT
+                          SB227     120.  12.25      26.       9.       4.      .12
                2 COMBINED AT
+                          CP227     123.  12.25      30.      10.       5.      .17
                DIVERSION TO
+                           P227      21.  12.25      14.       6.       3.      .17
                HYDROGRAPH AT
+                           S227     102.  12.25      15.       4.       2.      .17
                DIVERSION TO
+                          S227S      91.  12.25      14.       3.       2.      .17
                HYDROGRAPH AT
+                          S227W      11.  12.25       1.       0.       0.      .17
                ROUTED TO
+                         RS227W       8.  12.83       1.       0.       0.      .17
+                                                                                      .08
12.83

                HYDROGRAPH AT
+                          SB228     138.  12.17      29.      10.       5.      .13
                2 COMBINED AT
+                          CP228     138.  12.25      30.      10.       5.      .30
                DIVERSION TO
+                          S228S      43.  12.25      10.       3.       2.      .30
                HYDROGRAPH AT
+                          S228W      95.  12.25      20.       7.       3.      .30
                ROUTED TO
+                         RS228W      86.  12.58      20.       7.       3.      .30
+                                                                                      .41
12.58

                HYDROGRAPH AT
+                          SB229     130.  12.25      25.       8.       4.      .13
                2 COMBINED AT
+                          CP229     186.  12.33      44.      15.       7.      .43
                DIVERSION TO
+                           P229      14.  12.33      13.       7.       3.      .43
                HYDROGRAPH AT
+                           S229     172.  12.33      32.       8.       4.      .43
                DIVERSION TO
+                          S229S      72.  12.33      12.       3.       1.      .43
                HYDROGRAPH AT
+                          S229W     101.  12.33      19.       5.       2.      .43
                ROUTED TO
+                         RS229W      92.  12.83      19.       5.       2.      .43
+                                                                                      .37
12.83

                HYDROGRAPH AT
+                          SB230     214.  12.25      46.      16.       8.      .20
                2 COMBINED AT
+                          CP230     222.  12.25      65.      21.      10.      .63
                DIVERSION TO
+                           P230      84.  12.25      43.      15.       7.      .63
```

+	HYDROGRAPH AT	S230	138.	12.25	23.	6.	3.	.63		
+	ROUTED TO	BS230	131.	12.67	25.	8.	6.	.63	1202.18	12.67
+	ROUTED TO	RC230	107.	13.25	25.	8.	6.	.63	1.31	13.25
+	HYDROGRAPH AT	S214S	121.	12.25	35.	11.	5.	.00		
+	ROUTED TO	RS214S	117.	12.50	35.	11.	5.	.00	.47	12.50
+	HYDROGRAPH AT	SB220	264.	12.17	39.	13.	6.	.19		
+	2 COMBINED AT	CP220	307.	12.17	74.	24.	12.	.19		
+	DIVERSION TO	S220	238.	11.75	32.	8.	4.	.19		
+	HYDROGRAPH AT	P220	69.	11.75	41.	16.	8.	.19		
+	ROUTED TO	RP220	69.	11.83	41.	16.	8.	.19		
+	HYDROGRAPH AT	SB231	84.	12.17	18.	6.	3.	.08		
+	DIVERSION TO	S231	59.	11.83	6.	1.	1.	.08		
+	HYDROGRAPH AT	P231	25.	11.83	12.	4.	2.	.08		
+	ROUTED TO	RP231	25.	12.00	12.	4.	2.	.08		
+	HYDROGRAPH AT	SB232	180.	12.25	34.	11.	5.	.19		
+	DIVERSION TO	RET232	15.	12.25	6.	2.	1.	.19		
+	HYDROGRAPH AT	D232	180.	12.25	32.	9.	4.	.19		
+	3 COMBINED AT	CP232	274.	12.25	84.	30.	14.	.46		
+	DIVERSION TO	P232	138.	12.25	70.	26.	13.	.46		
+	HYDROGRAPH AT	S232	136.	12.25	14.	4.	2.	.46		
+	DIVERSION TO	S232S	110.	12.25	12.	3.	1.	.46		
+	HYDROGRAPH AT	S232W	26.	12.25	2.	1.	0.	.46		
+	ROUTED TO	RS232W	14.	13.25	2.	1.	0.	.46	.42	13.25
+	HYDROGRAPH AT	S226S	24.	12.33	7.	2.	1.	.00		
+	ROUTED TO	RS226S	23.	12.67	7.	2.	1.	.00	.24	12.67

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+          HYDROGRAPH AT
                          SB233      217.  12.25      44.      14.      7.      .24
+          3 COMBINED AT
                          CP233      226.  12.25      53.      17.      8.      .70
+          DIVERSION TO
                          S233S      124.  12.25      28.       9.      4.      .70
+          HYDROGRAPH AT
                          S233W      102.  12.25      24.       8.      4.      .70
+          ROUTED TO
                         RS233W       97.  12.50      24.       8.      4.      .70
+                                                                                      .65
12.50
+          HYDROGRAPH AT
                          SB234      229.  12.25      40.      13.      6.      .24
+          DIVERSION TO
                         RET234      229.  12.83      31.       9.      4.      .24
+          HYDROGRAPH AT
                           D234       88.  12.83      14.       4.      2.      .24
+          HYDROGRAPH AT
                          S227S       91.  12.25      14.       3.      2.      .00
+          ROUTED TO
                         RS227S       81.  12.50      14.       3.      2.      .00
+                                                                                      .34
12.50
+          HYDROGRAPH AT
                           P227       21.  11.75      14.       6.      3.      .00
+          ROUTED TO
                          RP227       21.  11.83      14.       6.      3.      .00
+          4 COMBINED AT
                          CP234      252.  12.75      65.      22.     11.      .94
+          DIVERSION TO
                           P234      106.  12.75      50.      18.      9.      .94
+          HYDROGRAPH AT
                           S234      146.  12.75      15.       4.      2.      .94
+          DIVERSION TO
                          S234S       90.  12.75      10.       2.      1.      .94
+          HYDROGRAPH AT
                          S234W       56.  12.75       6.       1.      1.      .94
+          ROUTED TO
                         RS234W       46.  13.08       6.       1.      1.      .94
+                                                                                      .46
13.08
+          HYDROGRAPH AT
                          S228S       43.  12.25      10.       3.      2.      .00
+          ROUTED TO
                         RS228S       40.  12.50      10.       3.      2.      .00
+                                                                                      .36
12.50
+          HYDROGRAPH AT
                          SB235      266.  12.17      40.      13.      6.      .25
+          3 COMBINED AT
                          CP235      282.  12.17      56.      17.      8.     1.19
+          DIVERSION TO
                           P235       23.  12.17      17.       8.      4.     1.19
+          HYDROGRAPH AT
                           S235      259.  12.17      39.      10.      5.     1.19
+          DIVERSION TO
                          S235S      107.  12.17      15.       4.      2.     1.19
           HYDROGRAPH AT
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+                    S235W      152.  12.17      24.      6.      3.     1.19
        ROUTED TO
+                   RS235W      144.  12.42      24.      6.      3.     1.19
+                                                                          .68
12.42
        HYDROGRAPH AT
+                     P235       23.  11.58      17.      8.      4.      .00
        ROUTED TO
+                    RP235       23.  11.75      17.      8.      4.      .00
        HYDROGRAPH AT
+                    S229S       72.  12.33      12.      3.      1.      .00
        ROUTED TO
+                   RS229S       67.  12.67      12.      3.      1.      .00
+                                                                          .31
12.67
        HYDROGRAPH AT
+                     P229       14.  11.08      13.      7.      3.      .00
        ROUTED TO
+                    RP229       14.  11.25      13.      7.      3.      .00
        HYDROGRAPH AT
+                    SB236      256.  12.17      43.     14.      7.      .25
        DIVERSION TO
+                   RET236        5.  12.17       4.      1.      0.      .25
        HYDROGRAPH AT
+                     D236      256.  12.17      43.     13.      6.      .25
        5 COMBINED AT
+                    CP236      432.  12.33     110.     37.     18.     1.43
        DIVERSION TO
+                     P236       64.  12.33      49.     21.     10.     1.43
        HYDROGRAPH AT
+                     S236      368.  12.33      61.     15.      7.     1.43
        DIVERSION TO
+                    S236S      206.  12.33      32.      8.      4.     1.43
        HYDROGRAPH AT
+                    S236W      162.  12.33      29.      7.      3.     1.43
        ROUTED TO
+                   RS236W      159.  12.50      29.      7.      3.     1.43
+                                                                          .89
12.50
        HYDROGRAPH AT
+                    SB237      253.  12.25      43.     14.      7.      .25
        2 COMBINED AT
+                    CP237      368.  12.33      72.     21.     10.     1.68
        DIVERSION TO
+                     P237       11.  12.33      10.      6.      3.     1.68
        HYDROGRAPH AT
+                     S237      357.  12.33      62.     15.      7.     1.68
        ROUTED TO
+                    RS237      353.  12.42      62.     15.      7.     1.68
+                                                                         2.86
12.42
        HYDROGRAPH AT
+                     P237       11.  10.75      10.      6.      3.      .00
        ROUTED TO
+                    RP237       11.  10.83      10.      6.      3.      .00
        HYDROGRAPH AT
+                    SB238       80.  12.25      12.      3.      2.      .10
        4 COMBINED AT
+                    CP238      483.  12.42     109.     33.     17.     2.41
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                HYDROGRAPH AT
+                                S231      59.  12.17      6.      1.      1.     .00
                ROUTED TO
+                               RS231      46.  12.75      6.      1.      1.     .00
+                                                                                      .49
12.75

                HYDROGRAPH AT
+                               S232S     110.  12.25     12.      3.      1.     .00
                ROUTED TO
+                              RS232S      96.  12.50     12.      3.      1.     .00
+                                                                                      .38
12.50

                HYDROGRAPH AT
+                                P232     138.  11.92     70.     26.     13.     .00
                ROUTED TO
+                               RP232     138.  12.00     70.     26.     13.     .00
                HYDROGRAPH AT
+                               SB239     228.  12.25     40.     12.      6.     .24
                DIVERSION TO
+                              RET239      53.  12.25      8.      3.      1.     .24
                HYDROGRAPH AT
+                                D239     228.  12.25     37.     10.      5.     .24
                4 COMBINED AT
+                               CP239     424.  12.42    124.     41.     20.     .24
                DIVERSION TO
+                                P239     175.  12.42     87.     31.     15.     .24
                HYDROGRAPH AT
+                                S239     249.  12.42     37.      9.      4.     .24
                DIVERSION TO
+                               S239S     108.  12.42     16.      4.      2.     .24
                HYDROGRAPH AT
+                               S239W     142.  12.42     21.      5.      3.     .24
                ROUTED TO
+                              RS239W     135.  12.67     21.      5.      3.     .24
+                                                                                      .58
12.67

                HYDROGRAPH AT
+                               S233S     124.  12.25     28.      9.      4.     .00
                ROUTED TO
+                              RS233S     118.  12.50     28.      9.      4.     .00
+                                                                                      .57
12.50

                HYDROGRAPH AT
+                               SB240     243.  12.25     43.     14.      7.     .25
                3 COMBINED AT
+                               CP240     396.  12.50     92.     28.     14.     .49
                DIVERSION TO
+                                P240      30.  12.50     24.     11.      5.     .49
                HYDROGRAPH AT
+                                S240     366.  12.50     68.     17.      8.     .49
                DIVERSION TO
+                               S240S     242.  12.50     46.     12.      6.     .49
                HYDROGRAPH AT
+                               S240W     124.  12.50     22.      6.      3.     .49
                ROUTED TO
+                              RS240W     116.  12.83     22.      6.      3.     .49
+                                                                                      .73
12.83

                HYDROGRAPH AT
+                                P240      30.  11.58     24.     11.      5.     .00
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                ROUTED TO
+                          RP240     30.   11.75     24.     11.      5.    .00
                HYDROGRAPH AT
+                          S234S     90.   12.75     10.      2.      1.    .00
                ROUTED TO
+                         RS234S     74.   13.08     10.      2.      1.    .00
+                                                                              .32
13.08
                HYDROGRAPH AT
+                           P234    106.   12.33     50.     18.      9.    .00
                ROUTED TO
+                          RP234    106.   12.42     50.     18.      9.    .00
                HYDROGRAPH AT
+                          SB241    277.   12.17     45.     15.      7.    .25
                DIVERSION TO
+                         RET241    277.   12.33     25.      7.      3.    .25
                HYDROGRAPH AT
+                           D241    242.   12.33     27.      8.      4.    .25
                5 COMBINED AT
+                          CP241    383.   12.92    130.     45.     21.    .74
                DIVERSION TO
+                           P241     83.   12.92     63.     28.     13.    .74
                HYDROGRAPH AT
+                           S241    300.   12.92     67.     17.      8.    .74
                DIVERSION TO
+                          S241S    209.   12.92     47.     12.      6.    .74
                HYDROGRAPH AT
+                          S241W     91.   12.92     20.      5.      2.    .74
                ROUTED TO
+                         RS241W     88.   13.08     20.      5.      2.    .74
+                                                                              .40
13.08
                HYDROGRAPH AT
+                          S235S    107.   12.17     15.      4.      2.    .00
                ROUTED TO
+                         RS235S     90.   12.58     15.      4.      2.    .00
+                                                                              .70
12.58
                HYDROGRAPH AT
+                          SB242    250.   12.25     47.     15.      7.    .25
                3 COMBINED AT
+                          CP242    295.   12.58     82.     24.     12.    .98
                DIVERSION TO
+                           P242     50.   12.58     32.     12.      6.    .98
                HYDROGRAPH AT
+                           S242    245.   12.58     50.     12.      6.    .98
                DIVERSION TO
+                          S242S     86.   12.58     18.      5.      2.    .98
                HYDROGRAPH AT
+                          S242W    159.   12.58     32.      8.      4.    .98
                ROUTED TO
+                         RS242W    154.   12.75     32.      8.      4.    .98
+                                                                              .51
12.75
                HYDROGRAPH AT
+                           P242     50.   11.83     32.     12.      6.    .00
                ROUTED TO
+                          RP242     50.   12.00     32.     12.      6.    .00
                HYDROGRAPH AT
+                          S236S    206.   12.33     32.      8.      4.    .00
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                ROUTED TO
+                          RS236S     195.   12.58      32.       8.       4.      .00
+                                                                                          .63
12.58

                HYDROGRAPH AT
+                            P236      64.   11.67      49.      21.      10.      .00

                ROUTED TO
+                           RP236      64.   11.75      49.      21.      10.      .00

                HYDROGRAPH AT
+                           SB243     256.   12.25      54.      18.       8.      .28

                5 COMBINED AT
+                           CP243     643.   12.58     198.      67.      32.     1.26

                DIVERSION TO
+                            P243     125.   12.58      95.      41.      20.     1.26

                HYDROGRAPH AT
+                            S243     518.   12.58     103.      26.      12.     1.26

                DIVERSION TO
+                           S243S     229.   12.58      41.      10.       5.     1.26

                HYDROGRAPH AT
+                           S243W     289.   12.58      62.      15.       7.     1.26

                ROUTED TO
+                          RS243W     280.   12.67      62.      15.       7.     1.26
+                                                                                          1.04
12.67

                HYDROGRAPH AT
+                           SB244     229.   12.25      40.      13.       6.      .22

                3 COMBINED AT
+                          CP244A     872.   12.50     210.      61.      31.     3.90

                ROUTED TO
+                          BS244A     731.   12.75     200.      54.      27.     3.90
+                                                                                       1200.12
12.75

                HYDROGRAPH AT
+                            P243     125.   11.75      95.      41.      20.      .00

                ROUTED TO
+                           RP243     125.   11.83      95.      41.      20.      .00

                2 COMBINED AT
+                           CP244     856.   12.75     290.      94.      47.     3.90

                ROUTED TO
+                           RC244     852.   12.83     290.      94.      47.     3.90
+                                                                                          4.81
12.83

                ROUTED TO
+                          RC244B     851.   12.83     290.      94.      47.     3.90
+                                                                                          3.53
12.83

                HYDROGRAPH AT
+                           S239S     108.   12.42      16.       4.       2.      .00

                ROUTED TO
+                          RS239S     102.   12.67      16.       4.       2.      .00
+                                                                                          .39
12.67

                HYDROGRAPH AT
+                           SB245     250.   12.17      45.      15.       7.      .23

                HYDROGRAPH AT
+                           P146A     175.     .00     175.     175.     175.      .00

                ROUTED TO
+                          RC146A     175.     .00     175.     175.     175.      .00
+                                                                                          1.62
.00

                HYDROGRAPH AT
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+                    SB252     103.  12.08     15.     5.     3.    .06
        HYDROGRAPH AT
+                    P239      175.  11.92     87.    31.    15.    .00
        ROUTED TO
+                    RP239     175.  12.00     87.    31.    15.    .00
        5 COMBINED AT
+                    CP245     694.  12.17    337.   230.   202.    .29
        DIVERSION TO
+                    P245      190.  12.17    190.   189.   182.    .29
        HYDROGRAPH AT
+                    S245      504.  12.17    147.    41.    20.    .29
        ROUTED TO
+                    RC245     492.  12.33    147.    41.    20.    .29
+                                                                          2.96
12.33
        HYDROGRAPH AT
+                    S240S     242.  12.50     46.    12.     6.    .00
        ROUTED TO
+                    RS240S    233.  12.75     46.    12.     6.    .00
+                                                                          1.53
12.75
        HYDROGRAPH AT
+                    SB246     267.  12.17     50.    17.     8.    .23
        3 COMBINED AT
+                    CP246     850.  12.42    242.    69.    33.    .52
        HYDROGRAPH AT
+                    SB247     144.  12.17     19.     6.     3.    .13
        HYDROGRAPH AT
+                    SB248     114.  12.17     21.     7.     3.    .10
        HYDROGRAPH AT
+                    P245      190.   4.50    190.   189.   182.    .00
        ROUTED TO
+                    RP245     190.   4.58    190.   189.   182.    .00
        4 COMBINED AT
+                    CP247    1227.  12.33    472.   271.   222.    .75
        ROUTED TO
+                    BS247     954.  12.83    422.   247.   212.    .75
+                                                                       1207.41
12.83
        ROUTED TO
+                    RC247     950.  12.92    422.   247.   212.    .75
+                                                                          3.45
12.92
        HYDROGRAPH AT
+                    S241S     209.  12.92     47.    12.     6.    .00
        ROUTED TO
+                    RS241S    205.  13.08     47.    12.     6.    .00
+                                                                           .64
13.08
        HYDROGRAPH AT
+                    P241       83.  12.17     63.    28.    13.    .00
        ROUTED TO
+                    RP241      83.  12.25     63.    28.    13.    .00
        HYDROGRAPH AT
+                    SB253      44.  12.25     13.     5.     2.    .05
        4 COMBINED AT
+                    CP248    1257.  12.92    540.   292.   234.    .81
        ROUTED TO
+                    RC248    1256.  13.00    540.   291.   234.    .81
+                                                                          4.16
13.00
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                 HYDROGRAPH AT
+                                S242S     86.  12.58      18.      5.      2.     .00
                 ROUTED TO
+                               RS242S     82.  12.92      18.      5.      2.     .00
+                                                                                        1.04
12.92

                 HYDROGRAPH AT
+                                 SB249    187.  12.25      39.     13.      6.     .18
                 DIVERSION TO
+                                RET249    187.  13.42      36.     10.      5.     .18
                 HYDROGRAPH AT
+                                  D249     36.  13.42      10.      3.      2.     .18
                 3 COMBINED AT
+                                 CP249   1337.  13.00     567.    299.    238.     .98
                 ROUTED TO
+                                 RC249   1331.  13.08     567.    299.    238.     .98
+                                                                                        4.66
13.08

                 HYDROGRAPH AT
+                                S243S     229.  12.58      41.     10.      5.     .00
                 ROUTED TO
+                               RS243S     220.  12.75      41.     10.      5.     .00
+                                                                                        .90
12.75

                 HYDROGRAPH AT
+                                 SB250    342.  12.17      56.     18.      9.     .30
                 DIVERSION TO
+                                RET250    302.  12.25      26.      8.      4.     .30
                 HYDROGRAPH AT
+                                  D250    333.  12.25      38.     11.      5.     .30
                 HYDROGRAPH AT
+                                 SB254     68.  12.25      19.      7.      3.     .08
                 4 COMBINED AT
+                                 CP250   1612.  13.00     663.    327.    251.    1.35
                 ROUTED TO
+                                 RC250   1612.  13.00     663.    327.    251.    1.35
+                                                                                        4.36
13.00

                 HYDROGRAPH AT
+                                 SB251    143.  12.25      31.     11.      5.     .13
                 DIVERSION TO
+                                RET251    143.  12.42      17.      5.      2.     .13
                 HYDROGRAPH AT
+                                  D251    124.  12.42      19.      6.      3.     .13
                 3 COMBINED AT
+                                 CP251   2496.  12.92     967.    426.    300.    5.39
                 HYDROGRAPH AT
+                                 SB201    183.  12.00      12.      4.      2.     .09
                 HYDROGRAPH AT
+                                S204N     286.  12.33      44.     13.      6.     .00
                 ROUTED TO
+                               RS204N     271.  12.42      44.     13.      6.     .00
+                                                                                        .62
12.42

                 HYDROGRAPH AT
+                                 SB205    191.  12.17      36.     11.      6.     .21
                 2 COMBINED AT
+                                 CP205    426.  12.42      79.     25.     12.     .21
                 4 COMBINED AT
+                                   CPD   3887.  12.83    1485.    585.    377.    9.28
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                HYDROGRAPH AT
+                          SB401     104.  12.58      36.      12.       6.      .23
                DIVERSION TO
+                          RET401    104.    .00      36.      12.       6.      .23
                HYDROGRAPH AT
+                           D401       0.    .00       0.       0.       0.      .23
                ROUTED TO
+                          RS401       0.    .00       0.       0.       0.      .23
+                                                                                        .00
15.75

                HYDROGRAPH AT
+                          SB301     105.  12.58      37.      12.       6.      .23
                2 COMBINED AT
+                          CP301     105.  12.58      37.      12.       6.      .46
                DIVERSION TO
+                          S301S      25.  12.58       9.       3.       1.      .46
                HYDROGRAPH AT
+                          S301W      80.  12.58      28.       9.       4.      .46
                ROUTED TO
+                         RS301W      77.  13.17      27.       9.       4.      .46
+                                                                                        .51
13.17

                HYDROGRAPH AT
+                          SB302     142.  12.50      43.      14.       7.      .26
                2 COMBINED AT
+                          CP302     183.  13.00      70.      23.      11.      .72
                DIVERSION TO
+                           P302      29.  13.00      26.      12.       6.      .72
                HYDROGRAPH AT
+                           S302     154.  13.00      44.      11.       5.      .72
                DIVERSION TO
+                          S302S       9.  13.00       2.       1.       0.      .72
                HYDROGRAPH AT
+                          S302W     144.  13.00      42.      10.       5.      .72
                ROUTED TO
+                         RS302W     137.  13.33      42.      10.       5.      .72
+                                                                                        .81
13.33

                HYDROGRAPH AT
+                          SB303     134.  12.42      37.      12.       6.      .23
                HYDROGRAPH AT
+                           P302      29.  11.83      26.      12.       6.      .00
                ROUTED TO
+                          RP302      29.  12.17      26.      12.       6.      .00
                3 COMBINED AT
+                          CP303     238.  12.92     104.      34.      16.      .95
                DIVERSION TO
+                           P303      48.  12.92      43.      19.       9.      .95
                HYDROGRAPH AT
+                           S303     190.  12.92      61.      15.       7.      .95
                ROUTED TO
+                          RS303     188.  13.25      61.      15.       7.      .95
+                                                                                        .72
13.25

                HYDROGRAPH AT
+                          SB304     125.  12.50      40.      13.       6.      .23
                DIVERSION TO
+                         RET304     125.  20.67      40.      13.       6.      .23
                HYDROGRAPH AT
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+                    D304      4.  20.67      2.      1.      0.     .23
        HYDROGRAPH AT
+                    P303     48.  11.92     43.     19.      9.     .00
        ROUTED TO
+                   RP303     48.  12.50     43.     19.      9.     .00
        3 COMBINED AT
+                   CP304    236.  13.25    104.     34.     17.    1.18
        DIVERSION TO
+                    P304     48.  13.25     44.     19.      9.    1.18
        HYDROGRAPH AT
+                    S304    188.  13.25     60.     15.      7.    1.18
        DIVERSION TO
+                   S304S    131.  13.25     42.     10.      5.    1.18
        HYDROGRAPH AT
+                   S304W     57.  13.25     18.      5.      2.    1.18
        ROUTED TO
+                  RS304W     54.  14.00     18.      5.      2.    1.18
+                                                                      .34
14.00
        HYDROGRAPH AT
+                   SB305    182.  12.50     57.     18.      9.     .36
        2 COMBINED AT
+                   CP305    182.  12.50     75.     23.     11.    1.54
        ROUTED TO
+                   BS305     12.  17.33     12.     10.      6.    1.54
+                                                                 1196.56
17.42
        HYDROGRAPH AT
+                  IFDIVR     27.  32.58     27.     26.     14.     .10
        ROUTED TO
+                  RSDIVR     27.  33.33     27.     26.     13.     .10
+                                                                      .35
33.33
        HYDROGRAPH AT
+                   SB402    529.  12.25    104.     34.     16.     .55
        DIVERSION TO
+                  RET402    529.  14.33    102.     29.     14.     .55
        HYDROGRAPH AT
+                    D402     34.  14.33     16.      5.      3.     .55
        2 COMBINED AT
+                   CP402     34.  14.33     27.     26.     16.     .65
        ROUTED TO
+                   RS402     27.  34.17     27.     26.     15.     .65
+                                                                      .35
34.25
        HYDROGRAPH AT
+                   S301S     25.  12.58      9.      3.      1.     .00
        ROUTED TO
+                  RS301S     20.  13.33      9.      3.      1.     .00
+                                                                      .35
13.33
        HYDROGRAPH AT
+                   SB306    170.  12.42     44.     13.      6.     .23
        2 COMBINED AT
+                   CP306    175.  12.42     53.     16.      8.     .23
        ROUTED TO
+                   RS306    171.  12.75     53.     16.      8.     .23
+                                                                     1.29
12.75
        HYDROGRAPH AT
+                   SB308    182.  12.50     53.     15.      7.     .28
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                 3 COMBINED AT
+                                CP308      345.  12.67      113.      45.      31.      1.16
                 DIVERSION TO
+                                 P308       13.  12.67       13.      13.      11.      1.16
                 HYDROGRAPH AT
+                                 S308      332.  12.67      100.      32.      19.      1.16
                 DIVERSION TO
+                                S308S       85.  12.67       27.       9.       6.      1.16
                 HYDROGRAPH AT
+                                S308W      247.  12.67       73.      23.      14.      1.16
                 ROUTED TO
+                               RS308W      240.  12.92       73.      23.      13.      1.16
+                                                                                              1.15
12.92

                 HYDROGRAPH AT
+                                S302S        9.  13.00        2.       1.       0.      .00
                 ROUTED TO
+                               RS302S        7.  14.75        2.       1.       0.      .00
+                                                                                              .24
14.75

                 HYDROGRAPH AT
+                                SB307      123.  12.67       46.      14.       7.      .27
                 DIVERSION TO
+                               RET307      123.  15.67       44.      12.       6.      .27
                 HYDROGRAPH AT
+                                 D307       20.  15.67        7.       2.       1.      .27
                 2 COMBINED AT
+                                CP307       25.  15.67        9.       3.       1.      .27
                 DIVERSION TO
+                                 P307       13.  15.67        7.       2.       1.      .27
                 HYDROGRAPH AT
+                                 S307       12.  15.67        1.       0.       0.      .27
                 ROUTED TO
+                                RS307        4.  16.92        1.       0.       0.      .27
+                                                                                              .08
16.92

                 HYDROGRAPH AT
+                                SB309      164.  12.42       44.      13.       6.      .22
                 HYDROGRAPH AT
+                                 P308       13.  10.67       13.      13.      11.      .00
                 ROUTED TO
+                                RP308       13.  11.08       13.      13.      11.      .00
                 4 COMBINED AT
+                                CP309      381.  12.83      129.      48.      31.     1.65
                 DIVERSION TO
+                                 P309        6.  12.83        6.       6.       6.     1.65
                 HYDROGRAPH AT
+                                 S309      375.  12.83      123.      42.      26.     1.65
                 DIVERSION TO
+                                S309S      226.  12.83       75.      26.      16.     1.65
                 HYDROGRAPH AT
+                                S309W      149.  12.83       48.      16.      10.     1.65
                 ROUTED TO
+                               RS309W      140.  13.42       47.      16.      10.     1.65
+                                                                                              .63
13.42

                 DIVERSION TO
+                                P310A       32.  13.42       24.      10.       7.     1.65
                 HYDROGRAPH AT
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+                    S310A     108.  13.42    23.    6.    3.   1.65
        DIVERSION TO
+                    S310AS     43.  13.42    10.    2.    1.   1.65
        HYDROGRAPH AT
+                    S310AW     65.  13.42    13.    3.    2.   1.65
        ROUTED TO
+                    RS310A     50.  14.67    13.    3.    2.   1.65
+                                                                     .48
14.67
        HYDROGRAPH AT
+                    P310A      32.  12.92    24.   10.    7.    .00
        ROUTED TO
+                    RP310A     32.  13.08    24.   10.    7.    .00
        HYDROGRAPH AT
+                    P307       13.  15.67     7.    2.    1.    .00
        HYDROGRAPH AT
+                    P309        6.   3.17     6.    6.    6.    .00
        2 COMBINED AT
+                    CP310B     19.  15.67    13.    8.    7.    .00
        ROUTED TO
+                    RC310B     14.  17.75    12.    8.    6.    .00
+                                                                     .79
17.75
        HYDROGRAPH AT
+                    S304S     131.  13.25    42.   10.    5.    .00
        ROUTED TO
+                    RS304S    131.  13.58    42.   10.    5.    .00
+                                                                     .69
13.58
        HYDROGRAPH AT
+                    SB310     701.  12.58   196.   58.   28.   1.11
        DIVERSION TO
+                    RET310    347.  12.58    38.   12.    6.   1.11
        HYDROGRAPH AT
+                    D310A     701.  12.58   174.   47.   22.   1.11
        3 COMBINED AT
+                    CP310     707.  12.58   225.   66.   34.   1.11
        ROUTED TO
+                    BS310     579.  13.17   192.   57.   29.   1.11
+                                                                    5.44
13.17
        ROUTED TO
+                    RC310     285.  14.33   163.   55.   28.   1.11
+                                                                    2.70
14.33
        3 COMBINED AT
+                    CP311A    361.  14.58   200.   69.   37.   2.76
        HYDROGRAPH AT
+                    SB311     404.  12.58   130.   40.   19.    .83
        HYDROGRAPH AT
+                    P304       48.  12.33    44.   19.    9.    .00
        3 COMBINED AT
+                    CP311     519.  13.75   358.  123.   65.   3.59
        ROUTED TO
+                    BS311      54.  22.42    54.   50.   33.   3.59
+                                                                 1193.91
22.50
        DIVERSION TO
+                    P311       54.    .00    54.   50.   33.   3.59
        HYDROGRAPH AT
+                    S311        0.    .00     0.    0.    0.   3.59
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                ROUTED TO
+                          RS311      0.    .00       0.       0.       0.     3.59
+                                                                                        .00
15.25

                HYDROGRAPH AT
+                          S308S     85.  12.67      27.       9.       6.      .00

                ROUTED TO
+                          RS308S    83.  13.00      27.       9.       5.      .00
+                                                                                        .74
13.00

                HYDROGRAPH AT
+                          SB403    274.  12.17      33.      10.       5.      .25

                DIVERSION TO
+                          RET403   274.    .00      33.      10.       5.      .25

                HYDROGRAPH AT
+                          D403      0.    .00       0.       0.       0.      .25

                ROUTED TO
+                          RS403     0.    .00       0.       0.       0.      .25
+                                                                                        .00
12.83

                HYDROGRAPH AT
+                          SB312    235.  12.33      58.      18.       9.      .28

                3 COMBINED AT
+                          CP312    250.  12.75      83.      25.      14.      .53

                DIVERSION TO
+                          P312      39.  12.75      31.      12.       8.      .53

                HYDROGRAPH AT
+                          S312     211.  12.75      52.      13.       6.      .53

                ROUTED TO
+                          RS312    208.  12.92      52.      13.       6.      .53
+                                                                                       1.72
12.92

                HYDROGRAPH AT
+                          S309S    226.  12.83      75.      26.      16.      .00

                ROUTED TO
+                          RS309S   219.  13.17      75.      26.      15.      .00
+                                                                                       1.08
13.17

                HYDROGRAPH AT
+                          SB313    252.  12.25      44.      14.       7.      .22

                HYDROGRAPH AT
+                          P312      39.  11.83      31.      12.       8.      .00

                ROUTED TO
+                          RP312     39.  12.08      31.      12.       8.      .00

                4 COMBINED AT
+                          CP313    520.  13.00     199.      62.      36.      .75

                DIVERSION TO
+                          P313      11.  13.00       9.       4.       2.      .75

                HYDROGRAPH AT
+                          S313     509.  13.00     190.      59.      34.      .75

                ROUTED TO
+                          RS313    500.  13.17     189.      59.      33.      .75
+                                                                                       2.03
13.17

                HYDROGRAPH AT
+                          S310AS    43.  13.42      10.       2.       1.      .00

                ROUTED TO
+                          R310AS    40.  14.00      10.       2.       1.      .00
+                                                                                        .34
14.00

                HYDROGRAPH AT
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+                    SB314      408.   12.42      103.      32.      15.      .50
          DIVERSION TO
+                    RET314     408.   12.58       48.      14.       7.      .50
          HYDROGRAPH AT
+                    D314A      382.   12.58       67.      19.       9.      .50
          HYDROGRAPH AT
+                    P313        11.   11.83        9.       4.       2.      .00
          ROUTED TO
+                    RP313       11.   12.17        9.       4.       2.      .00
          4 COMBINED AT
+                    CP314      769.   12.75      274.      83.      46.     1.25
          ROUTED TO
+                    BS314       49.   18.25       49.      46.      36.     1.25
+                                                                                  1193.59
18.33
          DIVERSION TO
+                    P314         1.   18.25        1.       1.       1.     1.25
          HYDROGRAPH AT
+                    S314        48.   18.25       48.      45.      35.     1.25
          ROUTED TO
+                    RC314       48.   18.83       48.      45.      35.     1.25
+                                                                                      .64
18.92
          HYDROGRAPH AT
+                    SB315      475.   12.33       95.      28.      13.      .49
          HYDROGRAPH AT
+                    P314         1.   17.75        1.       1.       1.      .00
          ROUTED TO
+                    RP314        1.   19.33        1.       1.       1.      .00
          4 COMBINED AT
+                    CP315      491.   12.33      128.      68.      49.     5.34
          ROUTED TO
+                    BS315      226.   13.00      165.     142.     139.     5.34
+                                                                                  1178.11
13.00
          ROUTED TO
+                    RP315      226.   13.17      165.     142.     139.     5.34
          HYDROGRAPH AT
+                    P311        54.   22.42       54.      50.      33.      .00
          ROUTED TO
+                    RP311       54.   22.50       54.      50.      33.      .00
          2 COMBINED AT
+                    CP316      235.   13.42      196.     189.     172.     5.34
          ROUTED TO
+                    RP316      235.   13.83      196.     189.     171.     5.34
          2 COMBINED AT
+                    CP317      243.   14.00      207.     199.     178.     6.88
1
                         SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                              (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                  INTERPOLATED TO
                                                                COMPUTATION INTERVAL
   ISTAQ    ELEMENT      DT       PEAK    TIME TO    VOLUME     DT      PEAK    TIME TO    VOLUME
                                          PEAK                                   PEAK

                        (MIN)     (CFS)    (MIN)      (IN)    (MIN)    (CFS)    (MIN)      (IN)
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RP103	MANE	1.28	25.00	711.47	-1.00	5.00	25.00	715.00	-1.00
RP111	MANE	.96	64.00	725.51	-1.00	5.00	64.00	730.00	-1.00
RP102	MANE	2.86	18.00	726.72	-1.00	5.00	18.00	730.00	-1.00
RP112	MANE	1.23	83.00	707.03	-1.00	5.00	83.00	710.00	-1.00
RP113	MANE	1.27	83.00	671.84	-1.00	5.00	83.00	675.00	-1.00
RP104	MANE	1.15	56.00	721.51	-1.00	5.00	56.00	725.00	-1.00
RP106	MANE	2.64	6.00	600.09	-1.00	5.00	6.00	605.00	-1.00
RP114	MANE	1.06	166.00	1036.60	-1.00	5.00	166.00	725.00	-1.00
RP115	MANE	1.01	166.00	1065.90	-1.00	5.00	166.00	730.00	-1.00
RP118	MANE	1.08	64.00	711.40	-1.00	5.00	64.00	715.00	-1.00
RP121	MANE	1.14	45.00	1055.89	-1.00	5.00	45.00	715.00	-1.00

RP123	MANE	1.09	33.00	1070.41	-1.00	5.00	33.00	1070.00	-1.00
RP133	MANE	1.26	18.00	686.81	-1.00	5.00	18.00	690.00	-1.00
RP126	MANE	.47	71.00	717.55	-1.00	5.00	71.00	720.00	-1.00
RP127	MANE	1.04	64.00	675.81	-1.00	5.00	64.00	680.00	-1.00
RP135	MANE	.81	26.00	714.82	-1.00	5.00	26.00	715.00	-1.00
RP129	MANE	1.12	45.00	1095.52	-1.00	5.00	45.00	1095.00	-1.00
RP136	MANE	1.11	39.00	735.63	-1.00	5.00	39.00	740.00	-1.00
RP137	MANE	1.07	134.00	720.44	-1.00	5.00	134.00	725.00	-1.00
RP131	MANE	.91	72.00	725.46	-1.00	5.00	72.00	730.00	-1.00
RP139	MANE	1.30	62.00	717.03	-1.00	5.00	62.00	720.00	-1.00

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RP134  MANE        .71   286.00   733.79    -1.00     5.00   286.00   735.00     -1.00

RP138  MANE        .99   134.00  1000.45    -1.00     5.00   134.00  1000.00     -1.00

RP140  MANE       1.07    83.00   691.33    -1.00     5.00    83.00   695.00     -1.00

RP147A MANE        .25  1412.23   890.48      .81     5.00  1412.06   890.00       .81

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4483E+03 EXCESS= .0000E+00 OUTFLOW= .4483E+03 BASIN STORAGE= .7588E-02 PERCENT
ERROR=    .0

RP203  MANE       2.53    59.00   716.80    -1.00     5.00    59.00   720.00     -1.00

RP209  MANE       3.50     9.00   665.42    -1.00     5.00     9.00   670.00     -1.00

RP217  MANE       3.32     5.00   122.61    -1.00     5.00     5.00   125.00     -1.00

RP220  MANE       1.91    69.00   709.23     3.17     5.00    69.00   710.00      3.17

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3234E+02 EXCESS= .0000E+00 OUTFLOW= .3234E+02 BASIN STORAGE= .4075E-09 PERCENT
ERROR=    .0

RP231  MANE       2.65    25.00   716.73     2.12     5.00    25.00   720.00      2.12

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .8935E+01 EXCESS= .0000E+00 OUTFLOW= .8936E+01 BASIN STORAGE= .1095E-08 PERCENT
ERROR=    .0
```

RP227	MANE	2.31	21.00	709.84	-1.00	5.00	21.00	710.00	-1.00
RP235	MANE	2.50	23.00	701.46	-1.00	5.00	23.00	705.00	-1.00
RP229	MANE	2.87	13.90	671.55	-1.00	5.00	13.90	675.00	-1.00
RP237	MANE	.45	11.00	646.19	-1.00	5.00	11.00	650.00	-1.00
RP232	MANE	1.51	138.00	719.21	-1.00	5.00	138.00	720.00	-1.00
RP240	MANE	3.10	30.00	701.90	-1.00	5.00	30.00	705.00	-1.00
RP234	MANE	1.60	106.00	744.07	-1.00	5.00	106.00	745.00	-1.00
RP242	MANE	2.36	50.00	715.16	-1.00	5.00	50.00	720.00	-1.00
RP236	MANE	1.93	64.00	704.10	-1.00	5.00	64.00	705.00	-1.00
RP243	MANE	1.22	125.00	708.04	-1.00	5.00	125.00	710.00	-1.00
RP239	MANE	1.25	175.00	718.16	-1.00	5.00	175.00	720.00	-1.00

RP245	MANE	1.51	190.00	274.34	-1.00	5.00	190.00	275.00	-1.00
RP241	MANE	1.57	83.00	733.24	-1.00	5.00	83.00	735.00	-1.00
RP302	MANE	2.86	29.00	727.00	-1.00	5.00	29.00	730.00	-1.00
RP303	MANE	5.00	48.00	748.84	-1.00	5.00	48.00	750.00	-1.00
RP308	MANE	4.72	13.00	2997.99	-1.00	5.00	13.00	2995.00	-1.00
RP310A	MANE	1.34	32.00	782.42	-1.00	5.00	32.00	785.00	-1.00
RP312	MANE	2.00	39.00	892.16	-1.00	5.00	39.00	725.00	-1.00
RP313	MANE	3.54	11.00	728.88	-1.00	5.00	11.00	730.00	-1.00
RP314	MANE	4.96	.98	1189.04	-1.00	5.00	.98	1190.00	-1.00
RP315	MANE	2.24	226.06	790.36	2.01	5.00	226.05	790.00	2.01

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ERROR=    .1


            RP311  MANE          .57     54.09   1352.84     -1.00      5.00     54.09   1355.00       -1.00


            RP316  MANE         5.56    235.05    826.94      2.49      5.00    235.03    830.00        2.49


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7084E+03 EXCESS= .0000E+00 OUTFLOW= .7082E+03 BASIN STORAGE=-.8206E+00 PERCENT
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 *** NORMAL END OF HEC-1 ***


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             File Size:    335.3  Kbytes
             Percent Inactive:  25.5
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Appendix D: Hydrologic Analysis Supporting Documentation

D.7 Field Visit Photographs

D.7.1 Index Maps
- D.7.1.1 100 Watershed Photo Index Map
- D.7.1.2 200 Watershed Photo Index Map
- D.7.1.3 300 & 400 Watersheds Photo Index Map
- D.7.1.4 Heritage Park/Center Street Basin Photo Index Map
- D.7.1.5 Fiesta Lakes Golf Course Photo Index Map
- D.7.1.6 Tempe Canal Photo Index Map
- D.7.1.7 Tempe Canal Photo Index Map
- D.7.1.8 Tempe Canal Photo Index Map
- D.7.1.9. Desert Samaritan Photo Index Map
- D.7.1.10 Dobson Lakes Photo Index Map
- D.7.1.11 Carriage Lane Park Photo Index Map

D.7.2 Field Visit Photographs

D.7.1 INDEX MAPS

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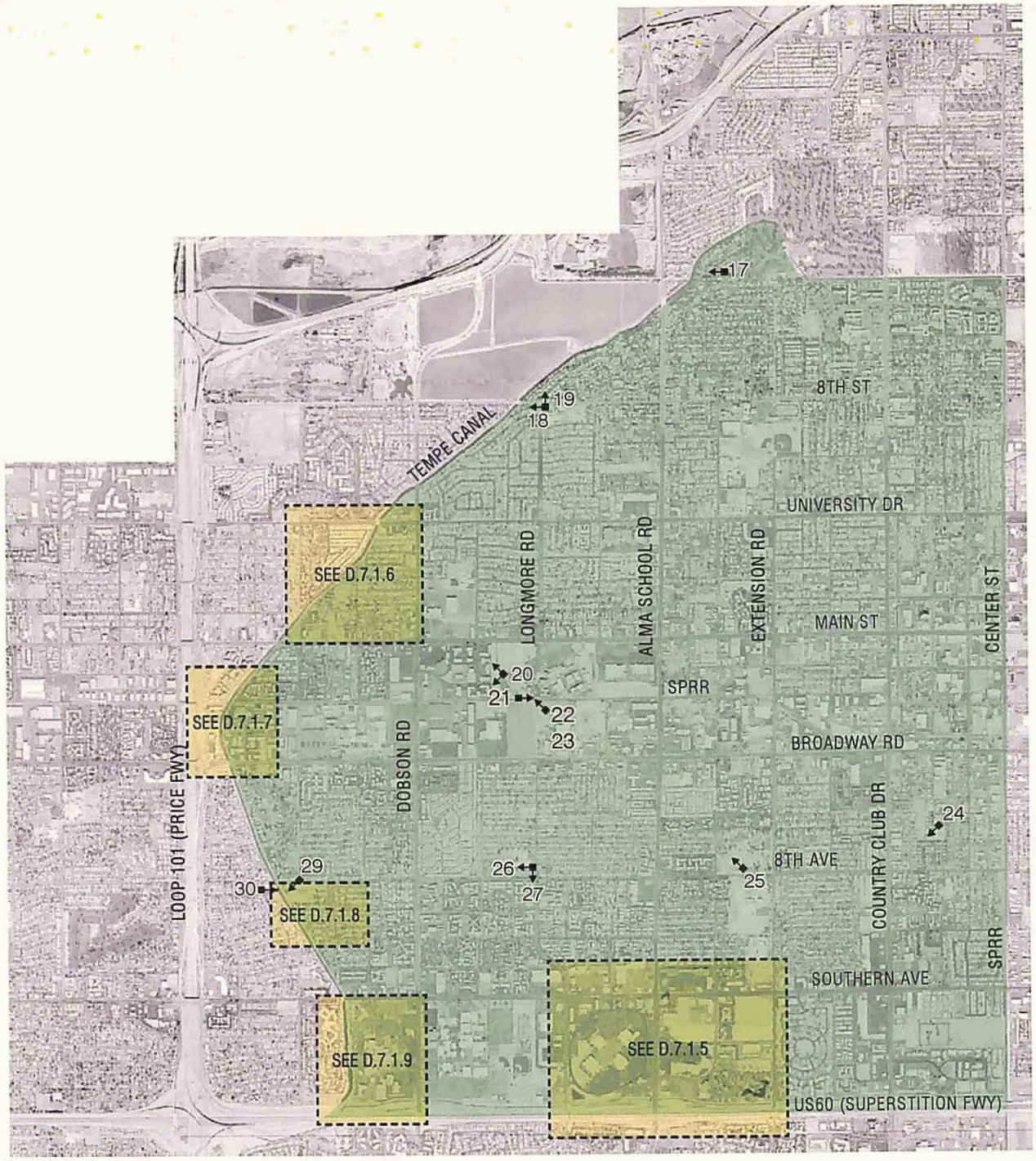
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.1
100 WATERSHED PHOTO INDEX MAP



N
NTS

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TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.2
200 WATERSHED PHOTO INDEX MAP

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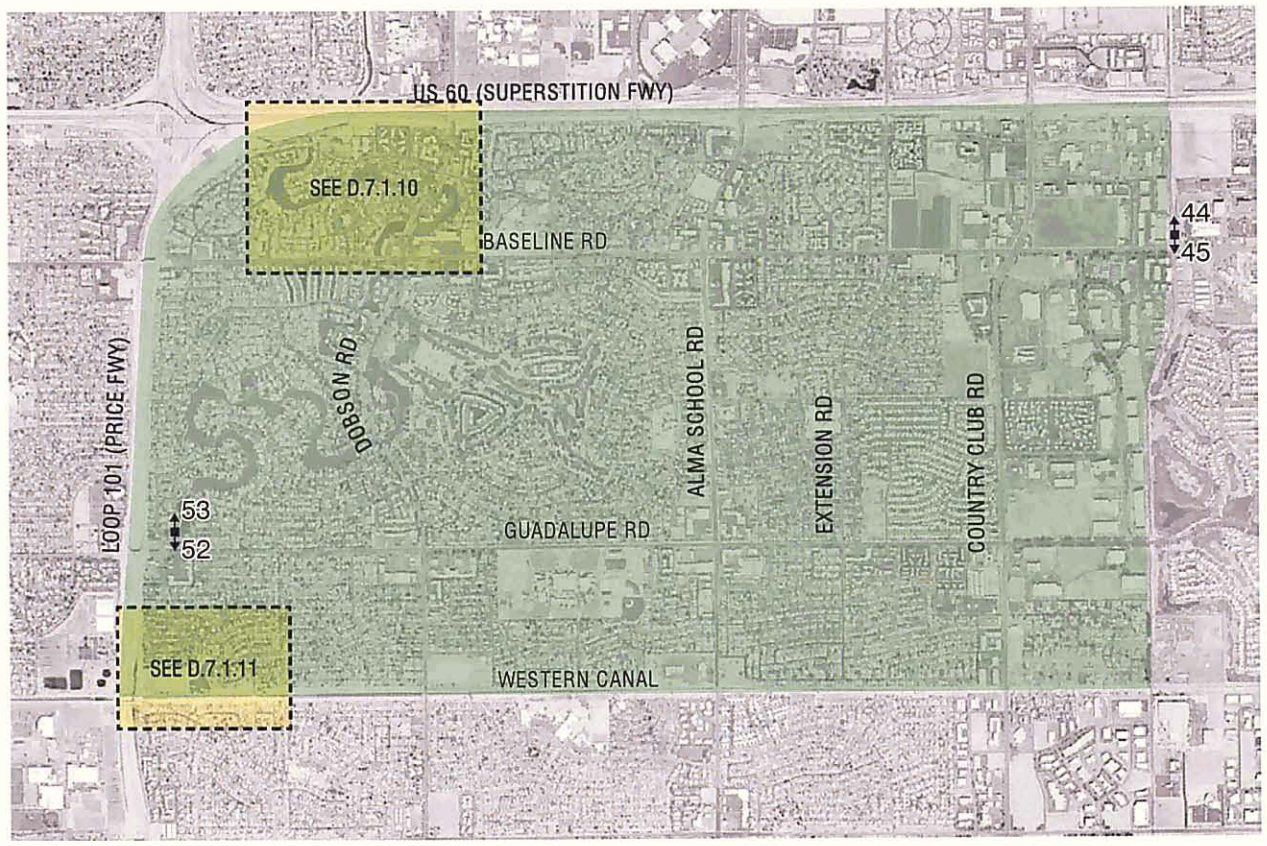

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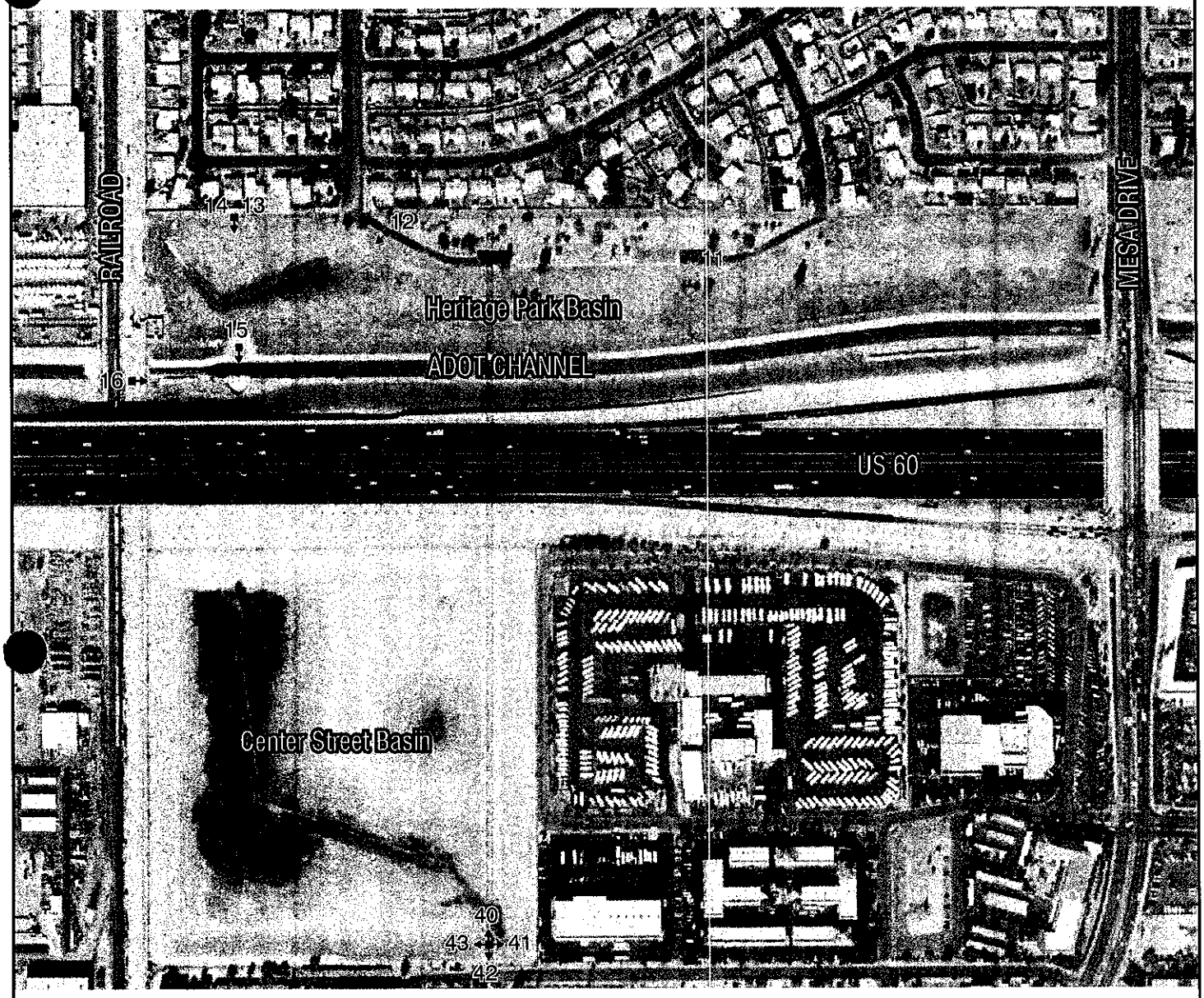
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.3
300 & 400 WATERSHEDS PHOTO INDEX MAP



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TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.4
HERITAGE PARK/CENTER STREET BASIN
PHOTO INDEX MAP

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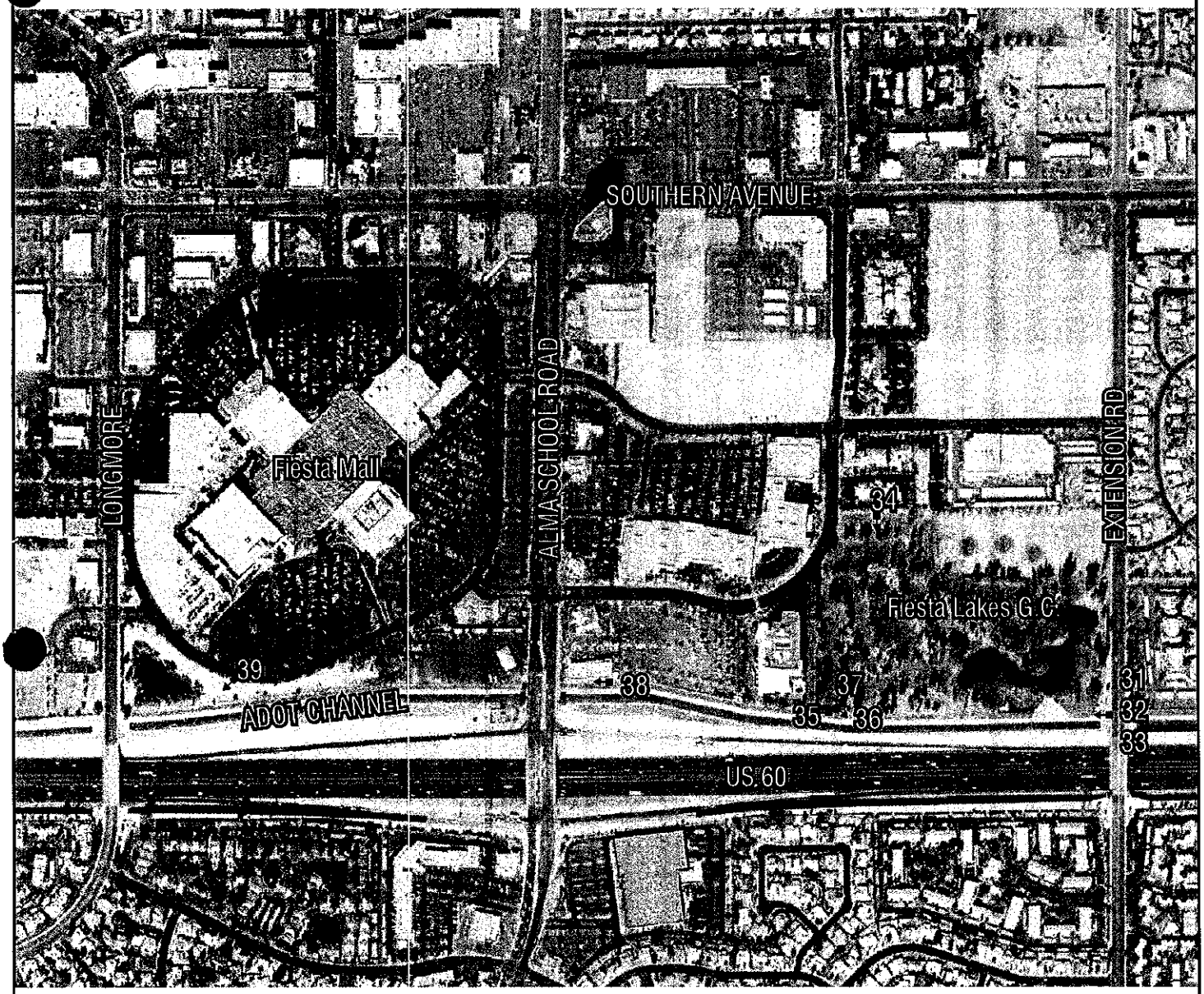

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TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.5
FIESTA LAKES GOLF COURSE
PHOTO INDEX MAP

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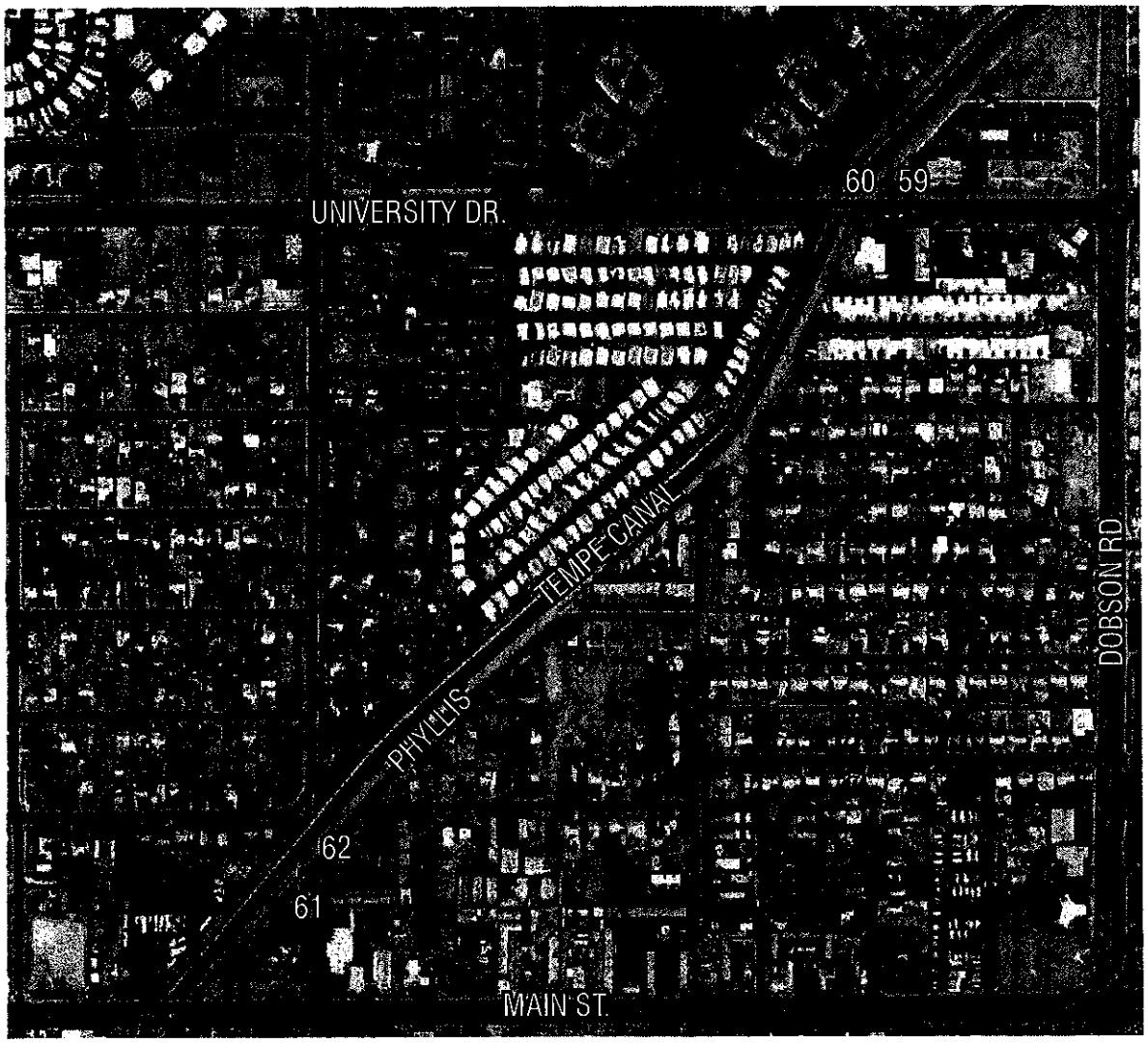

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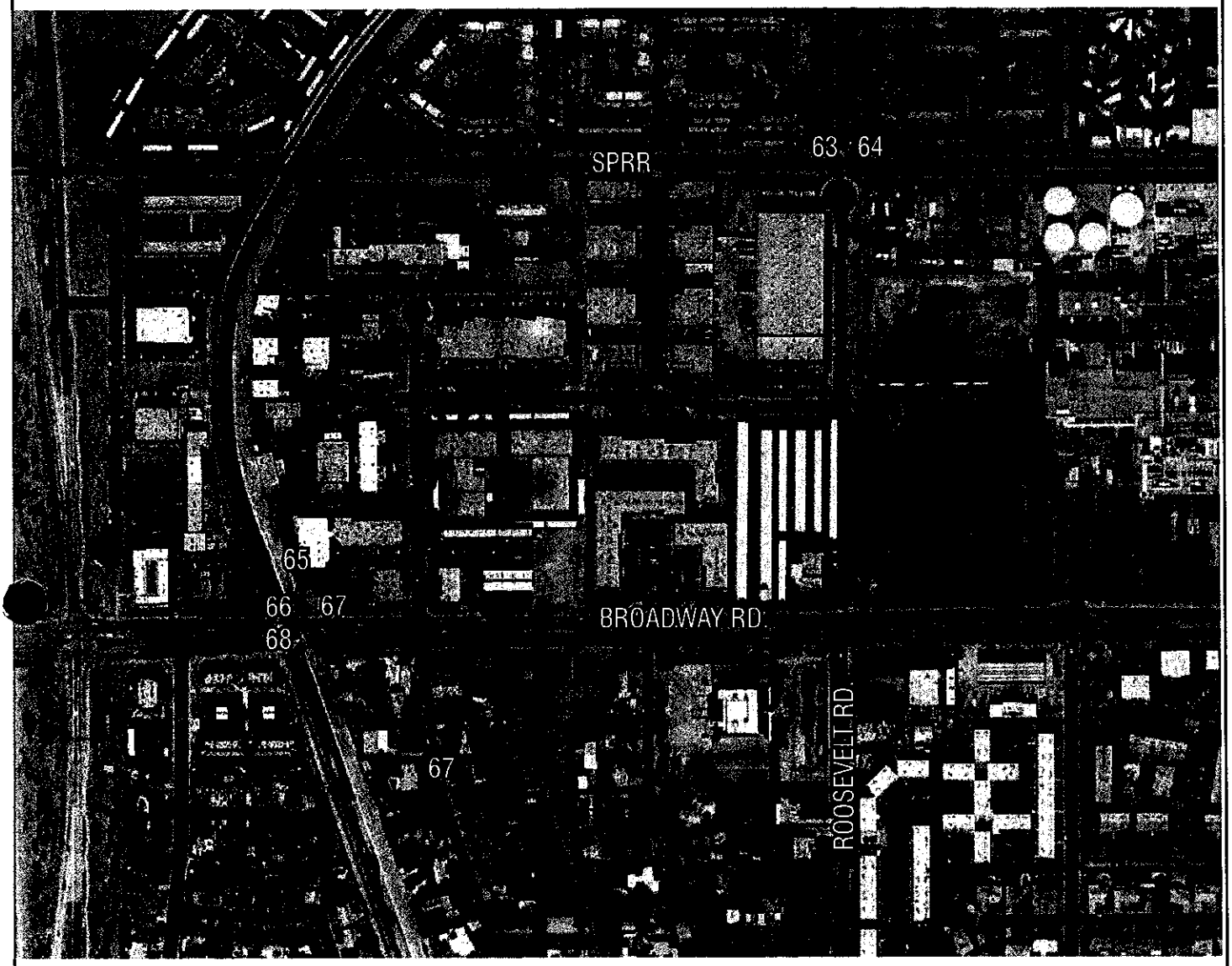
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.6
TEMPE CANAL PHOTO INDEX MAP



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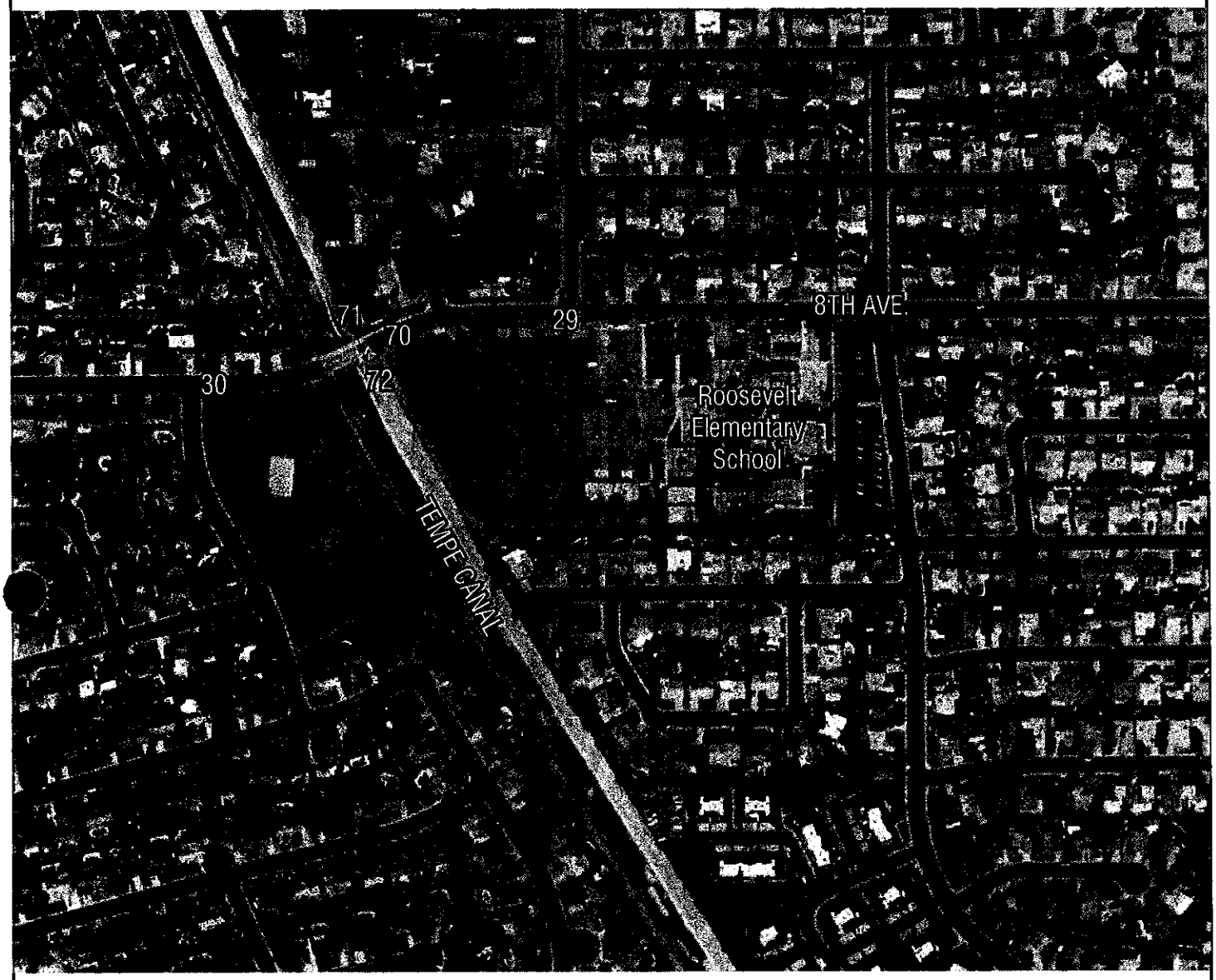
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.7
TEMPE CANAL PHOTO INDEX MAP



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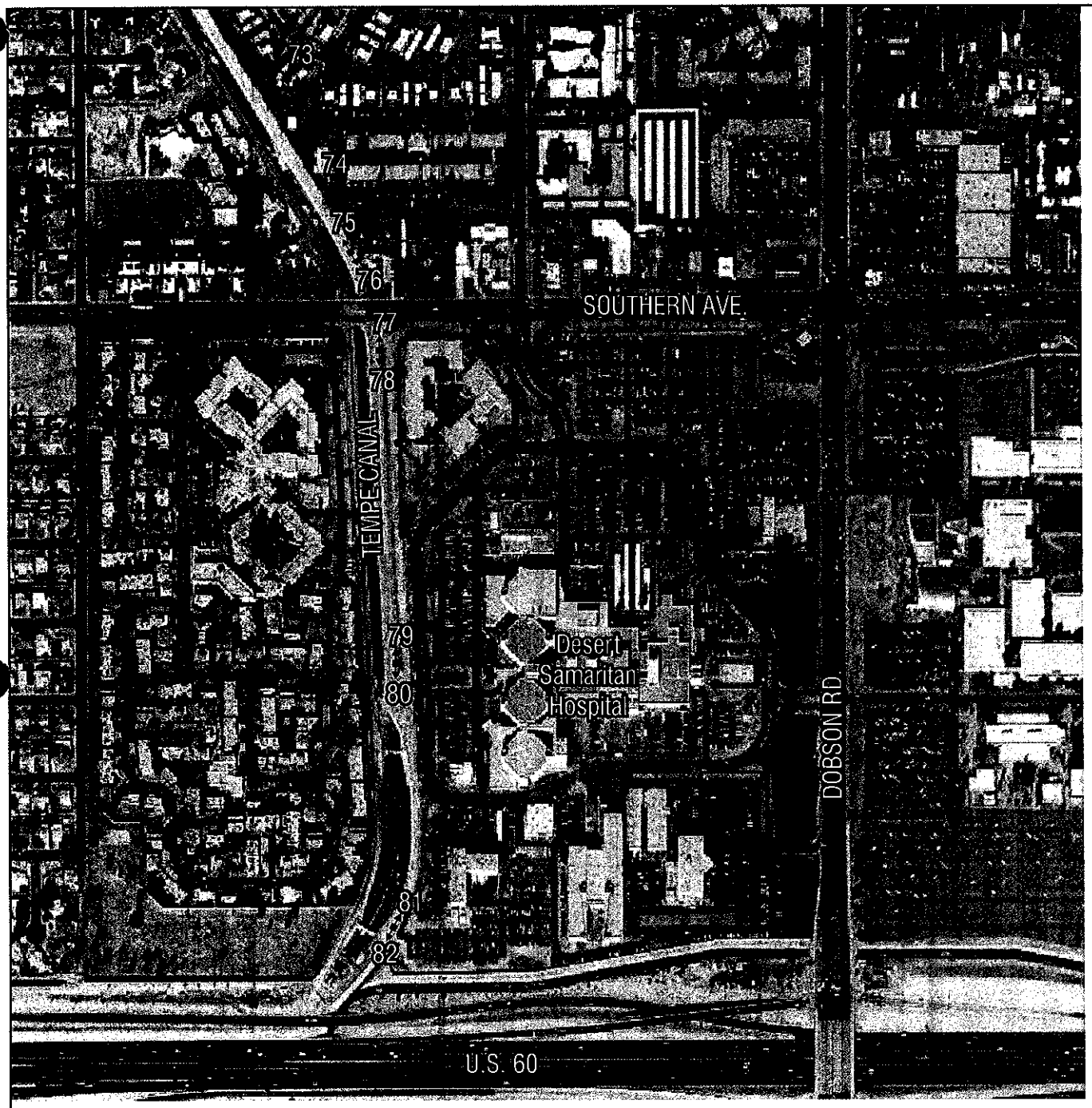
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.8
TEMPE CANAL PHOTO INDEX MAP



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TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.9
DESERT SAMARITAN PHOTO INDEX MAP

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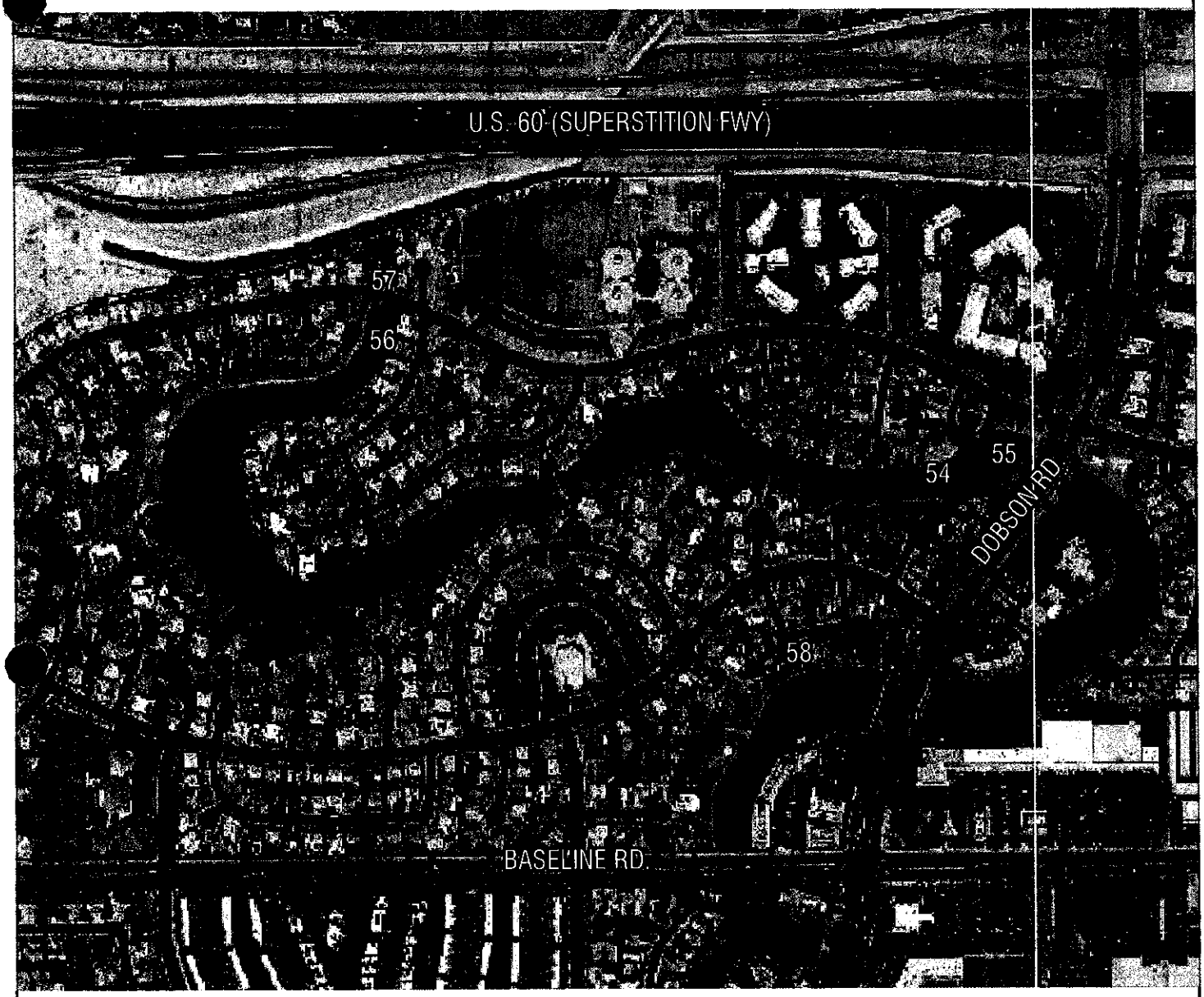

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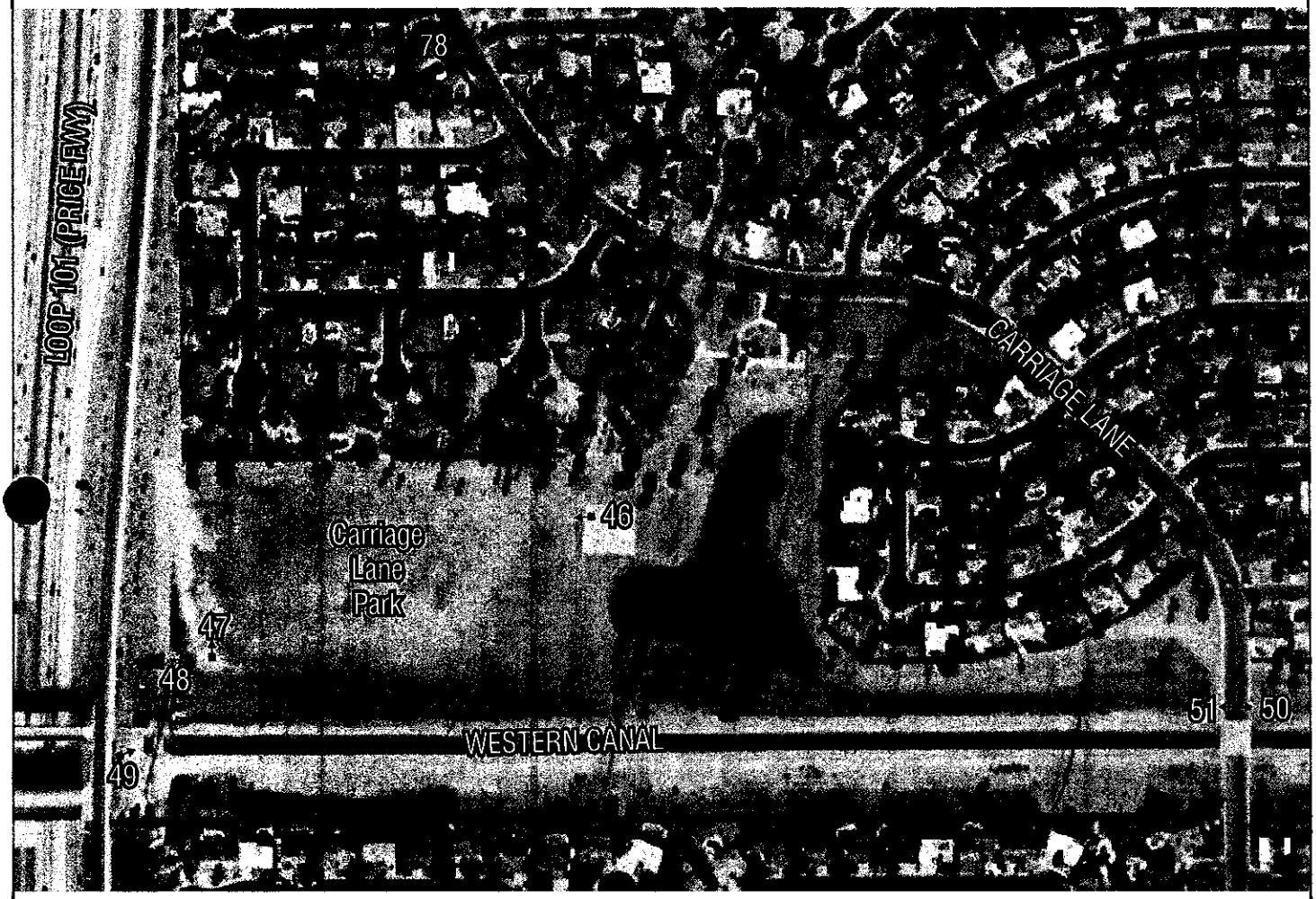
TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.10
DOBSON LAKES PHOTO INDEX MAP



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NTS

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TEMPE CANAL FLOODPLAIN DELINEATION STUDY

D.7.1.11
CARRIAGE LANE PARK PHOTO INDEX MAP

D.7.2 FIELD VISIT PHOTOGRAPHS

TC01 - 8th Avenue and Horne. Collector street intersection. View south.

TC02 - 8th Avenue and Horne. Collector street intersection View west.

TC03 - Center Street north of Broadway Road. View south toward the railroad curve.

TC04- Center Street south of 8th Avenue. View North. Railroad 2+ feet higher than Center Street.

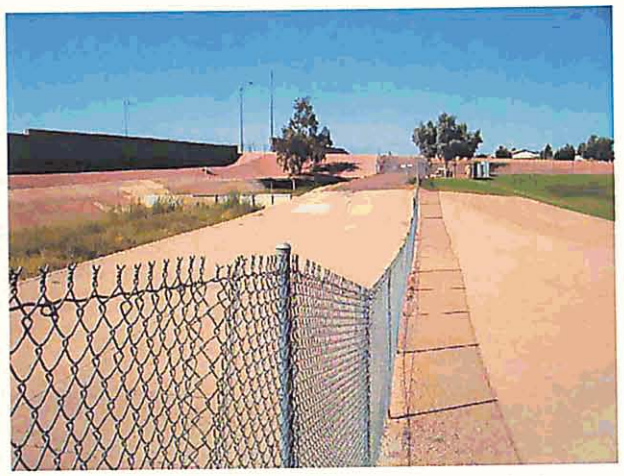
TC05- Kingsborough Park, near 24th Street and US60. View southwest.

TC06 - Emerald Park, near Harris Drive and US60.
View south at the spillway and ADOT channel.

TC07 - Emerald Park, near Harris Drive and US60.
View southwest.

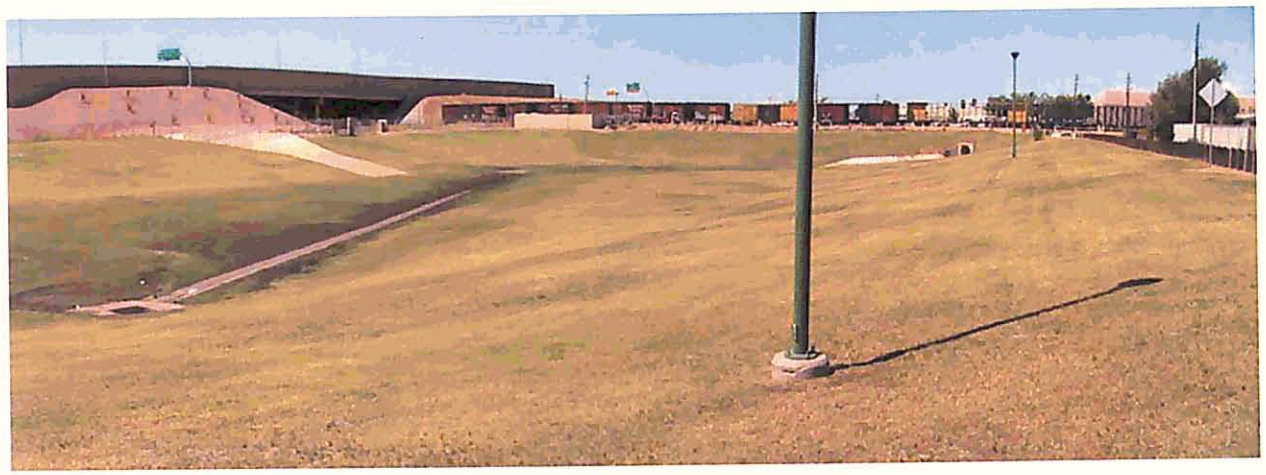
TC08 - Emerald Park, near Harris Drive and US60. ADOT Channel block and gate, spillway.
View west.

TC09 - Sherwood Park, near Horne and US60.
Spillway to ADOT channel. View south.



TC10 - Sherwood Park, near Horne and US60.
ADOT channel block and gate, spillway. View west.

TC11 - Heritage Park, near Railroad and US60. View east.



TC12 - Heritage Park, near Railroad and US60. View southwest.

TC13 - Heritage Park, near Railroad and US60. Spillway to ADOT Channel and box culvert under freeway. View south.

TC14 - Heritage Park, near Railroad and US60. Spillway to ADOT Channel and box culvert under freeway. View south.

TC15 - ADOT Channel at Heritage Park, Spillway north to Heritage Park and south to box culvert under freeway. View south.

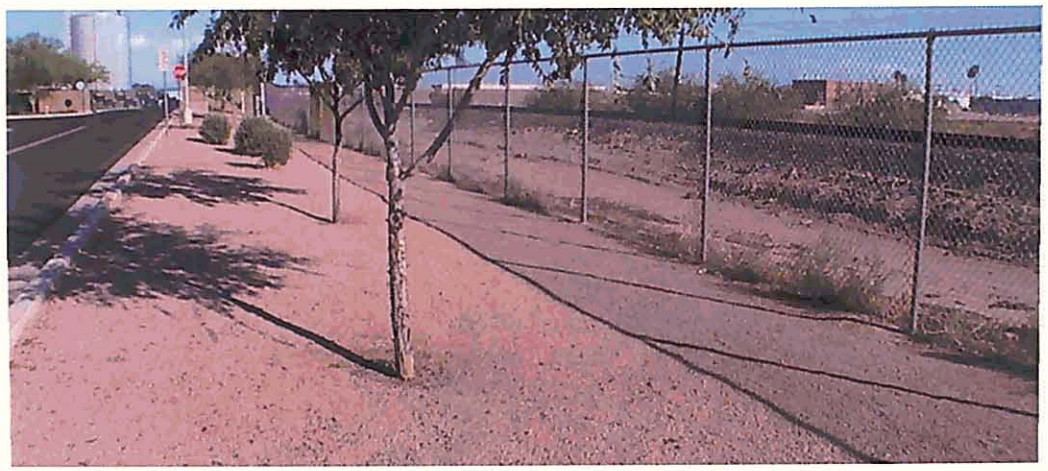
TC16 - ADOT Channel at Heritage Park. Channel narrows and flows west under the railroad through a 54" pipe. View east from railroad crossing.

TC17 - Westwood and Mountain View Drive. Residential area. View west.

TC18 - 8th Street and Longmore. Collector street intersection. View west toward Tempe Canal.

TC19- 8th Street and Longmore. Collector street intersection. View north.

TC20- East Valley Academy, near Main Street and Longmore. Large retention basin at west end of parking lot.



TC21 - Longmore north of the Railroad. View east along railroad.

TC22 - Longmore south of the railroad. Unlined channel continues south to Broadway Road. Culvert does not cross railroad. View north.

TC23- Longmore south of the railroad. Unlined channel continues south to Broadway Road. Culvert does not cross railroad. View north.

TC24 - Boys and Girls Club, 6th Avenue and Robson. Approximatley 2.5' retention depth. View south.

TC25 - Kleinman Park, 8th Avenue and extension Road. Shallow retention. View northwest.

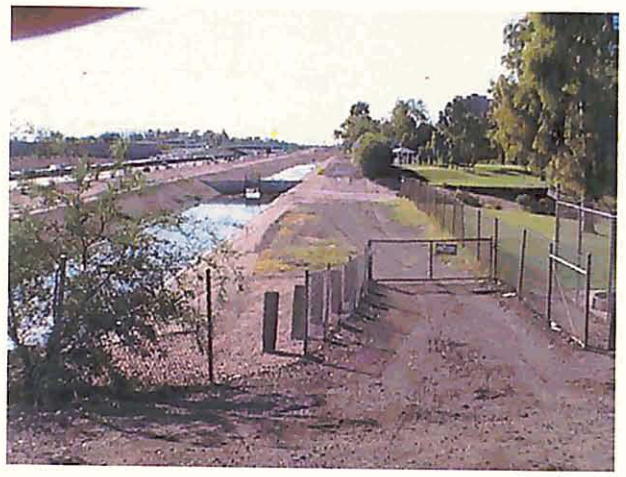
TC26 - Pueblo Avenue and Longmore.
Collector street intersection. View west.

TC27 - Pueblo Avenue and Longmore.
Collector street intersection. View south.

TC28 - Another residential street intersection in the area of Pueblo Avenue and Longmore

TC29 - Roosevelt Elementary School, 8th Avenue east of Tempe Canal. Approximatley 2.5' of retention depth. View west

TC30- Daumler Park, 8th Avenue west of Tempe Canal. View east towards canal.



TC31- ADOT Channel at Extension Road. Channel block and gate and spillway at Fiesta Lakes Golf Club. View west.

TC32 - ADOT Channel at Extension Road. Channel block and gate at Fiesta Lakes Golf Club. View west.

TC33 - ADOT Channel at Extension Road. Spillway to Fiesta Lakes Golf Club. View west.

TC34 -Fiesta Lakes Golf Club, near Westwood and US60. View south.

TC35 - ADOT Channel, west of Fiesta Lakes Golf Course, Shopping cart in bottom of channel.

TC36 - ADOT Channel, west of Fiesta Lakes Golf Club. View east.

TC37 - Fiesta Lakes Golf Course,near Westwood and US60.
View east along south side of golf course.

TC38 - ADOT Channel at Alma School Road.
Three 10' x 5' box culverts. View west.

TC39 - Fiesta Mall retention basin,
near Longmore and US60.

TC40 – Center Street Basin. View north from southeast
corner of basin.

TC41 – Center Street Basin. View east from southeast
corner of basin.

TC42 – Center Street Basin. View south from southeast
corner of basin.

TC43 – Center Street Basin. View west from southeast corner of basin.

TC44 – SPRR at Baseline Road. View north.

TC45 – SPRR at Baseline Road. View south.

TC47 – Carriage Lane Park. View north from grated inlet to 60" storm drain.

TC46 – Carriage Lane Park. View southwest from east side of basin.

TC48 – Carriage Lane Park. View north from southwest corner of basin. Gated inlet structure on the basin slope, and grated inlet at the low point of the basin can be seen.

TC49 – Carriage Lane Park. View northeast from Western Canal at southwest corner of basin.

TC50 – Western Canal at Carriage Ln. View east.

TC51 – Western Canal at Carriage Ln. View west.

TC52 – Dobson Ranch – Naranja Ave at Noche De Paz.
View south.

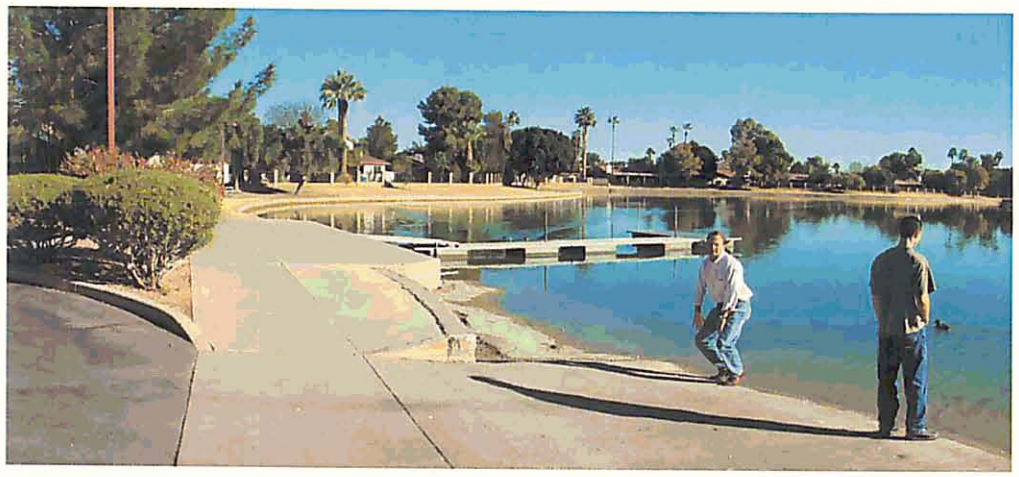
TC53 – Dobson Ranch – Naranja Ave at Noche De Paz.
View northeast.

TC54 – Dobson Ranch – Isabella Ave west of Dobson Rd.
View southwest.

TC55 – Dobson Ranch – Isabella Ave west of Dobson Rd.
View east.

TC56 – Dobson Ranch – Isabella Ave west of Via Rialto Ave. View south.

TC57 – Dobson Ranch – Isabella Ave west of Via Rialto Ave. View northeast.



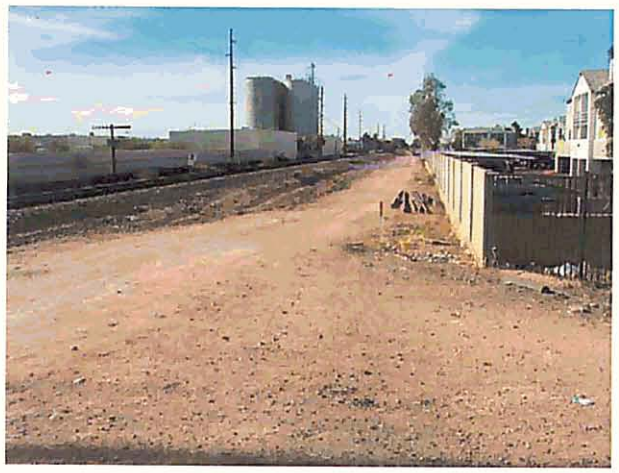
TC58 – Dobson Ranch – Near Javelina Ave and Jibsail Lp. View east.

TC59 – Tempe Canal at University Dr. View east.

TC60 – Tempe Canal at University Dr. View southwest.

TC61 – Tempe Canal at Roosevelt Rd/Phyllis St, north of Main St. View southwest.

TC62 – Tempe Canal at Roosevelt Rd/Phyllis St, north of Main St. View northeast.



TC63 – SPRR at Roosevelt Rd. View west

TC64 – SPRR at Roosevelt Rd. View east.

TC65 – Tempe Canal at Broadway Rd. View north.

TC66 – Tempe Canal at Broadway Rd. View south.

TC67 – Tempe Canal at Broadway Rd. View southeast.

TC68 – Tempe Canal at Broadway Rd. View west.

TC69 – El Dorado Rd south of Broadway Rd. View south along residential street.

TC70 – Tempe Canal at 8th Ave. View east. Roosevelt Elementary retention area is to the right.

TC71 – Tempe Canal at 8th Ave. View north.

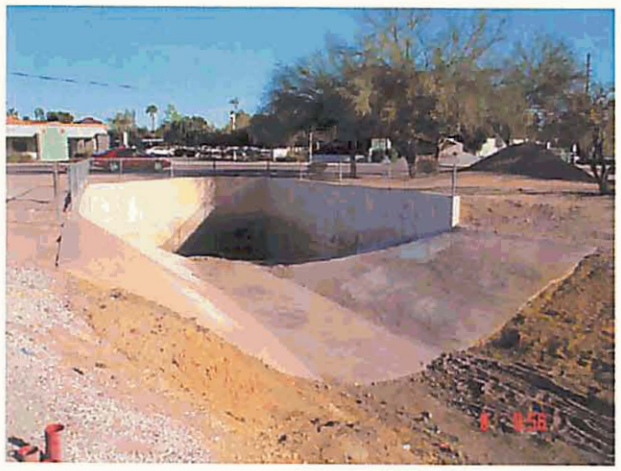
TC72 – Tempe Canal at 8th Ave. View south.

TC73 – Townhouse complex near Tempe Canal and Southern Ave. Approx. Valencia St at Farmdale Ave. Drainage swale to retention along Tempe Canal.

TC74 – Apartment complex between San Jose St and Tempe Canal, north of Southern Ave. Small retention basin along Tempe Canal.

TC75 – Tempe Canal at Southern Ave. View northwest.

TC76 – Tempe Canal at Southern Ave. View south.



TC77 – Desert Samaritan channel at Southern Ave. View north at north headwall structure.

TC78 – Desert Samaritan channel at Southern Ave. View south from north headwall structure.

TC79 – Desert Samaritan channel at box culvert. View north from south headwall structure.

TC80 – Desert Samaritan channel at box culvert. View south at south headwall structure.

TC81 – Desert Samaritan. View north from southwest corner of SB251. Retaining wall lies along Tempe Canal.

TC82 – Desert Samaritan. View southwest from southwest corner of SB251. Retaining wall lies along Tempe Canal.

Appendix E: Hydraulic Analysis Supporting Documentation

E.1 Roughness Coefficient Estimation

E.2 Cross-Section Plots

Note: HEC-RAS cross-section plots are located in Appendix E.5.

E.3 Expansion and Contraction Coefficients

Note: No special data was obtained, nor calibration performed, for estimation of expansion and contraction coefficients.

E.4 Hydraulic Calculations

E.4.1 CP205, CP207, CP213
E.4.2 BS219
E.4.3 BS225
E.4.4 BS230
E.4.5 BS244A, SB251

E.5 HEC-RAS Model "Southern.prj"

E.1 ROUGHNESS COEFFICIENT ESTIMATION

HEC-RAS MANNING'S ROUGHNESS COEFFICIENTS

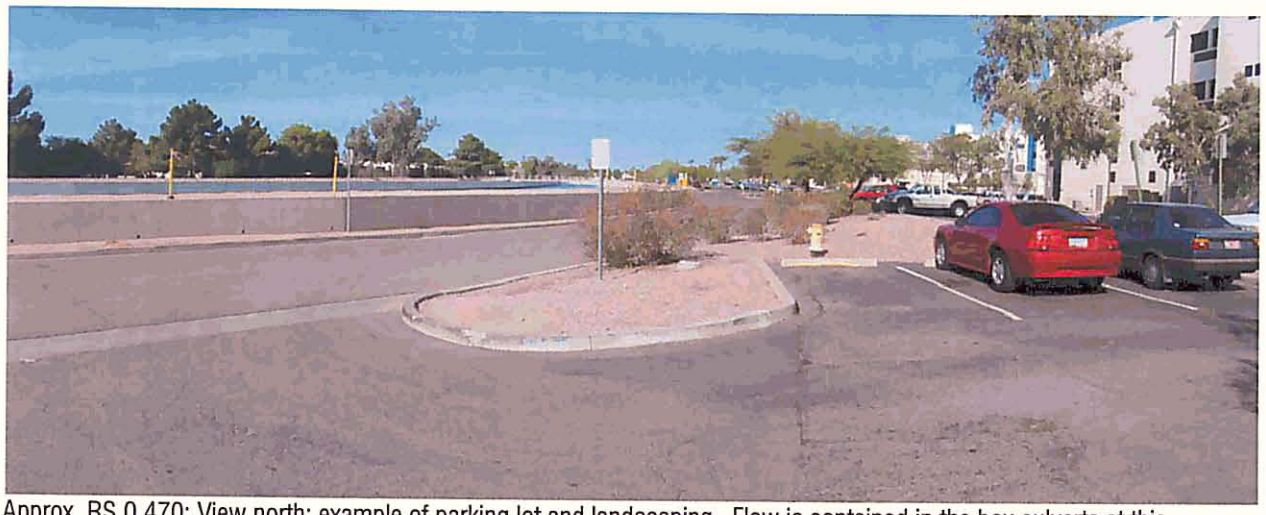
Land Use / Channel Material	Roughness Coefficient
Parking Lot, Driveway	0.016
Earth-Lined Channel	0.020
Concrete-Lined Channel	0.013
Graded Dirt / Bare Landscaping	0.020-0.030

Approx. RS 0.855: View north towards Southern Avenue at upstream end of channel parallel to Tempe Canal. Concrete headwall, earth-lined channel.

Approx. RS 0.855: View south along channel parallel to Tempe Canal. Tempe Canal is to the right. Earth-lined channel, graded dirt or bare landscaping overbanks.

Approx. RS 0.630: View north along channel parallel to Tempe Canal. Tempe Canal is to the left. Earth-lined channel, graded dirt or bare landscaping overbanks.

Approx. RS 0.630: View south along channel parallel to Tempe Canal. Concrete headwall entrance to 2-10' x 6' CBC.



Approx. RS 0.470: View north; example of parking lot and landscaping. Flow is contained in the box culverts at this location. Tempe Canal is to the left.

E.2 CROSS-SECTION PLOTS

Note: HEC-RAS cross-section plots are located in Appendix E.5

E.3 EXPANSION & CONTRACTION COEFFICIENTS

Note: No special data was obtained, nor calibration performed, for estimation of expansion and contraction coefficients.

E.4.1 CP205, CP207, CP213

CP205 – ALMA SCHOOL ROAD AT TEMPE CANAL

Photo: View west from east of Alma School Rd. Tempe Canal to the right.

- Flow concentrates within subdivision streets and flows to Alma School Rd, or flows directly to the Tempe Canal.
- Subdivisions along east and west sides of Alma School Rd are high, with protected embankments.

Peak Flow Event

- Peak Flow = 426 cfs
- Street flow depth in Alma School Rd = 0.91 ft
- Conclusion: flow continues out of study area either within Alma School Rd to the north, or flows to the Tempe Canal

CP207 – 8TH STREET AT TEMPE CANAL

View west from Longmore and 8th St

View north from Longmore and 8th St

- Flow in assumed to concentrate within 8th Street, 80-ft ROW Collector
- Block wall along north side of 8th Street, and properties south of 8th Street are high = flow containment within 8th Street to the Tempe Canal.

Peak Flow Event

- Peak Flow at CP206 = 229 cfs, at CP207 = 367 cfs
- Street flow depth in 8th Street at CP206 = 0.81 ft
- Street flow depth in 8th Street at CP207 = 0.95 ft
- Conclusion: flow continues out of study area either within 8th Street to the west, flows to the Tempe Canal north of 8th Street, or flows into the Tempe Canal at the 8th Street crossing.

CP213 – UNIVERSITY DRIVE AT TEMPE CANAL

View west at University Dr and Tempe Canal

- Properties along north and south sides of University Dr appear to be high (from topo), therefore assumption made that flow contained within University Dr and flowing west at Dobson Rd.

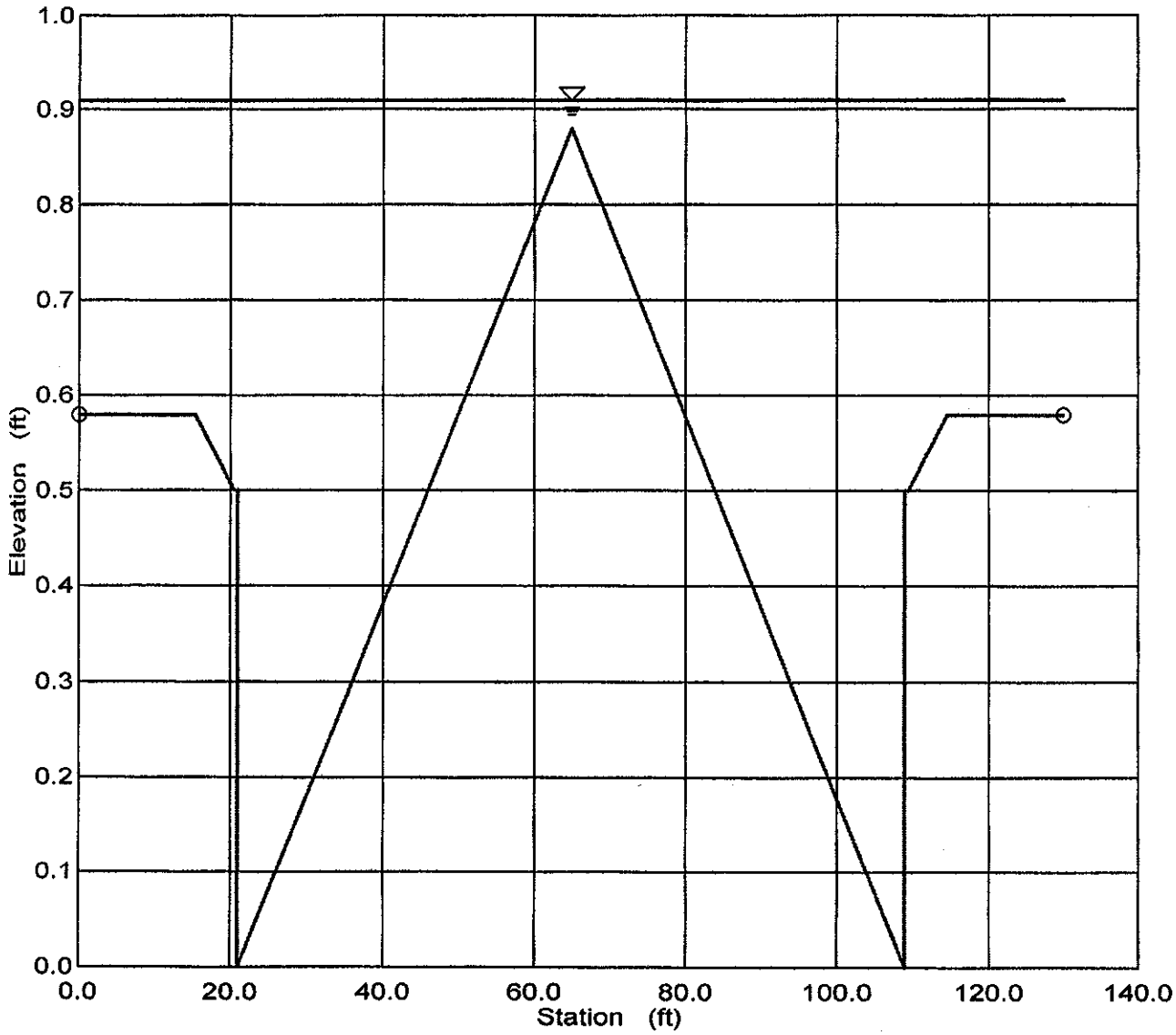
Peak Flow Event

- Peak Flow = 618 cfs
- Street flow depth in University Dr = 1.37 ft
- Conclusion: flow continues out of the study area, either within University Dr to the west, or to the Tempe Canal.

CP205: 100-Year Peak Flow
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP205
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

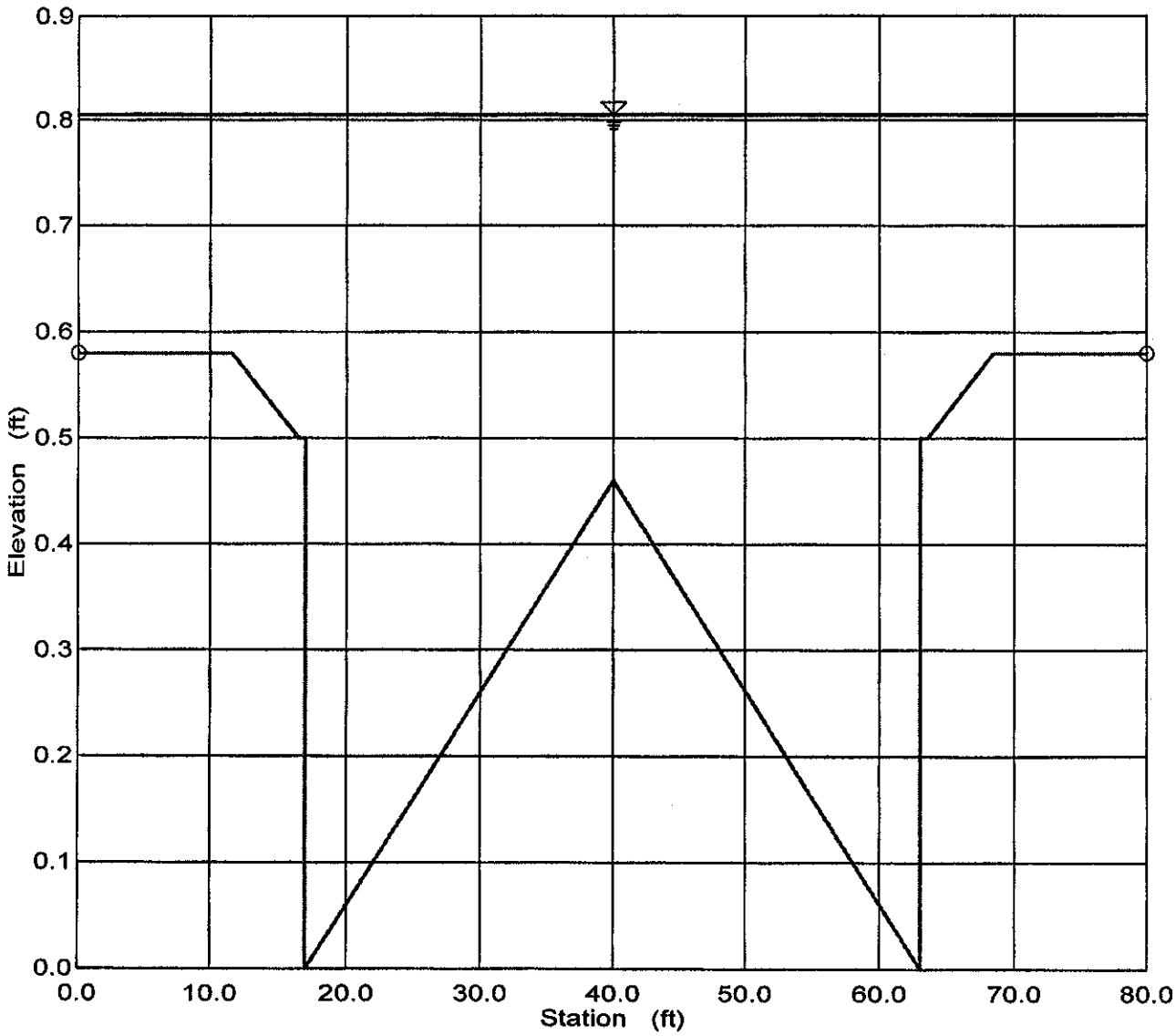
Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.027000	ft/ft
Water Surface Elevation	0.91	ft
Discharge	426.00	cfs



CP206: 100-Year Peak Flow
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP206
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

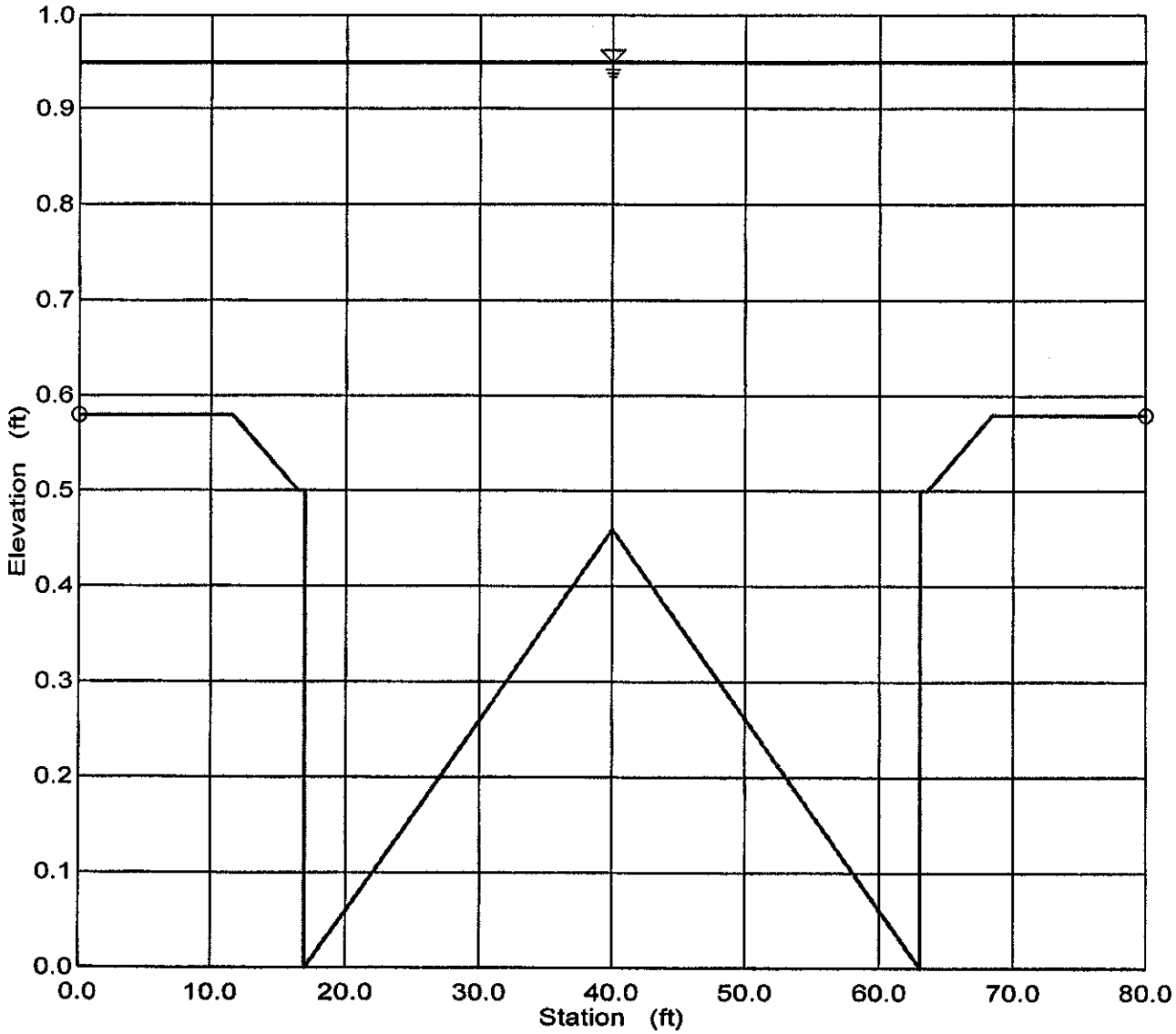
Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	0.81	ft
Discharge	229.00	cfs



CP207: 100-Year Peak Flow
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP207
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

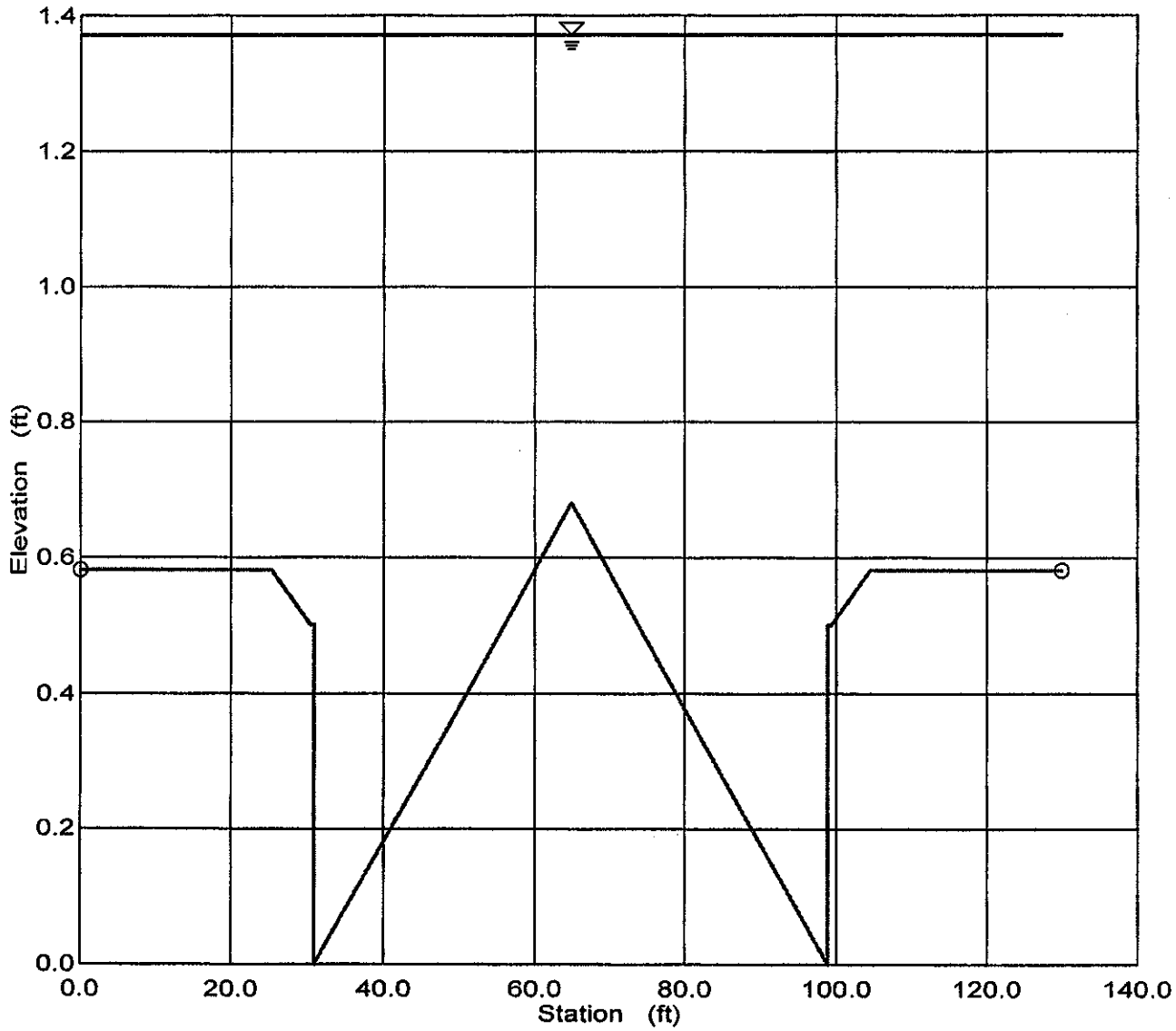
Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.020000	ft/ft
Water Surface Elevation	0.95	ft
Discharge	367.00	cfs



CP213: 100-Year Peak Flow
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	CP213
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.004500	ft/ft
Water Surface Elevation	1.37	ft
Discharge	618.00	cfs



E.4.2 BS219

BS219 – MAIN STREET AT TEMPE CANAL

View south towards Tempe Canal and Main St, taken from Phyllis, north of SRP Substation.

View north along Phyllis and Tempe Canal.

- Flow within SB219 is predominantly street flow to the west and north. Retention storage available north of Main St.

Peak Flow Event

- Peak Flow in Main St at Dobson Rd = 119 cfs. Street flow depth = 0.81 ft.
- Peak Flow at CP219 = 213 cfs
- BS219 Results: Peak flow = 142 cfs
  Peak storage = 5 ac-ft
  Peak stage = 1204.89 ft
- Conclusion: Ponding to 1204.89 along canal, overtopping into canal north of Main St, and potential flow west within Main St to out of study area.

Rating Curve for BS219

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************
    PROJECT:  MAIN ST
    ENGINEER:  KVM
    DATE:   1/ 9/2004
    TIME:  14:53. 3
---------------------------------------------
    INPUT PARAMETERS
---------------------------------------------
    STARTING WSEL:       1204.40
    MAXIMUM WSEL:        1206.20
    STEP SIZE:              0.20
    BREADTH OF WEIR:       50.00

*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  MAIN ST
    DATE:   1/ 9/2004
    TIME:  14:53. 3
*********************************************
```

POINT	ELEVATION	STATION	POINT	ELEVATION	STATION
1	1206.41	0.00	16	1204.87	1384.60
2	1205.97	108.30	17	1204.86	1492.40
3	1205.75	221.50	18	1204.82	1599.30
4	1205.58	298.90	19	1205.17	1708.30
5	1205.38	405.10	20	1205.31	1813.60
6	1205.30	515.60	21	1205.27	1910.10
7	1205.08	623.30	22	1206.03	2020.90
8	1205.45	684.30	23	1206.19	2122.40
9	1205.27	697.70	24	1206.47	2231.00
10	1204.44	788.20			
11	1205.09	894.18			
12	1204.75	980.40			
13	1204.88	1088.30			
14	1204.84	1195.20			
15	1204.99	1302.70			

```
*********************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  MAIN ST
    DATE:   1/ 9/2004
    TIME:  14:53. 3
*********************************************
    INPUT COEFFICENT VALUES.
```

POINT	HEAD	COEFFICIENT
1	0.00	2.6000
2	5.00	2.6000

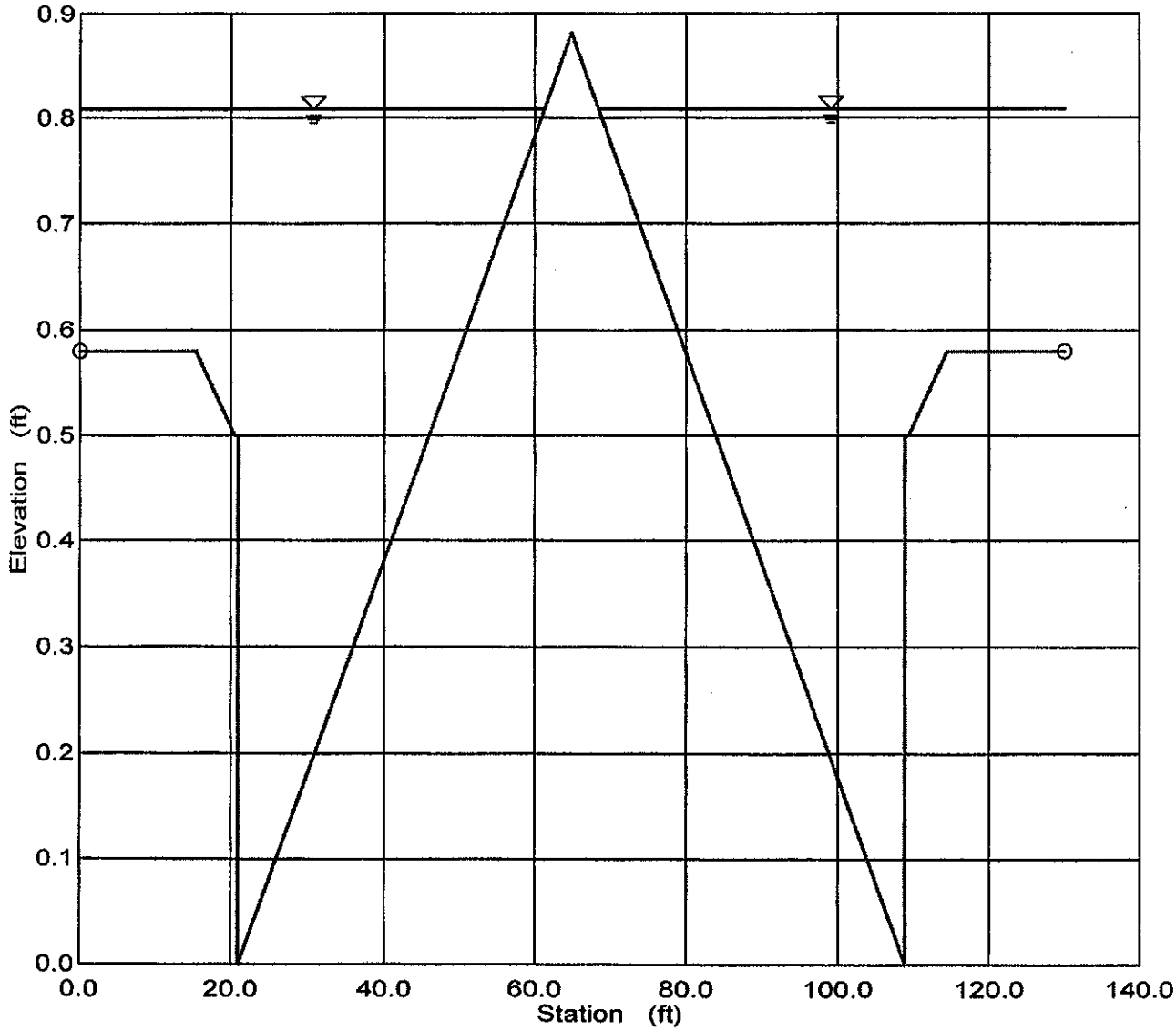
```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  MAIN ST
    DATE:   1/ 9/2004
    TIME:  14:53. 3
*********************************************
```

ELEVATION	DISCHARGE (CFS)
1204.40	0.00
1204.60	2.90
1204.80	22.63
1205.00	159.91
1205.20	518.26
1205.40	1091.98
1205.60	1913.59
1205.80	2949.20
1206.00	4187.57

S218: 100-Year Peak Flow
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	S218
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.004700	ft/ft
Water Surface Elevation	0.81	ft
Discharge	119.00	cfs



E.4.3 BS225

BS225 – SPRR AT TEMPE CANAL

View west along SPRR from Roosevelt Rd.

View east along SPRR from Roosevelt Rd.

Peak Flow Event

- Peak Flow along north side of railroad, west of Dobson Rd = 612 CFS. Flow depth approx. 4.5 ft; contained to the south by the railroad elevation.
- Flow within SB225 is predominantly to the west. Retention storage available north of the railroad.
- Peak Flow at CP225 = 700 cfs
- BS225 Results: Peak flow = 696 cfs
  Peak storage = 10 ac-ft
  Peak stage = 1204.10 ft
- Conclusion: Ponding to 1204.10 along canal, overtopping to Tempe Canal, no flow south across the railroad, ponding mainly contained west of Roosevelt Rd.

Rating Curve for BS225

```
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************
    PROJECT:  SPRR
    ENGINEER:  KVM
    DATE:   1/11/2004
    TIME:  13:28.58

---------------------------------------------
    INPUT PARAMETERS
---------------------------------------------
    STARTING WSEL:       1203.00
    MAXIMUM WSEL:        1205.20
    STEP SIZE:              0.20
    BREADTH OF WEIR:       50.00

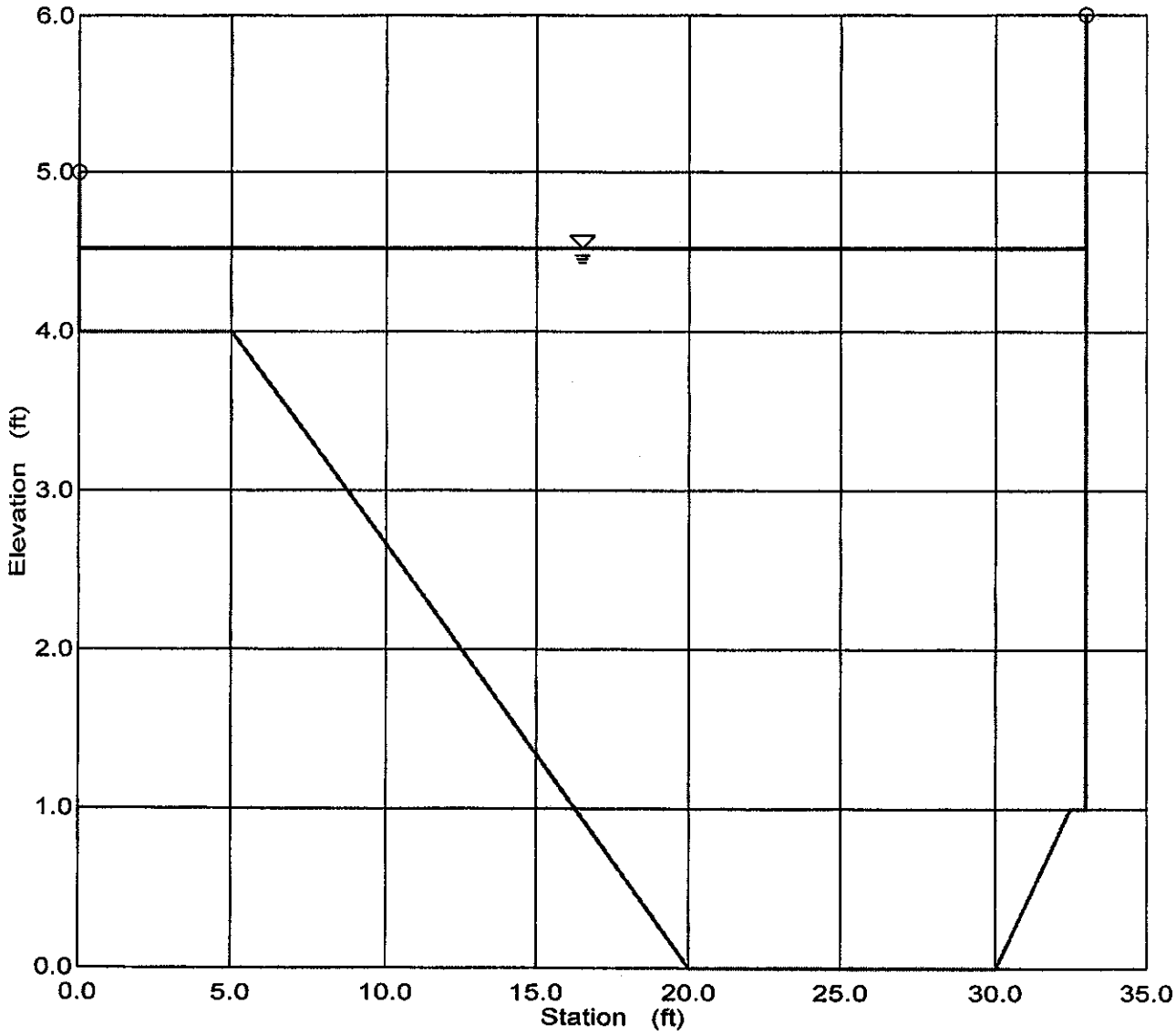
*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  SPRR
    DATE:   1/11/2004
    TIME:  13:28.58
*********************************************
    POINT     ELEVATION     STATION
    -----     ---------     -------
    POINT     ELEVATION     STATION          POINT     ELEVATION     STATION
    -----     ---------     -------          -----     ---------     -------
        1       1206.32        0.00             16       1204.61     1157.00
        2       1204.62       26.00             17       1204.36     1243.00
        3       1204.27       35.00             18       1204.63     1342.00
        4       1203.48       92.00             19       1204.28     1453.00
        5       1203.54      202.00             20       1204.48     1540.00
        6       1203.86      284.00             21       1204.44     1631.00
        7       1203.60      330.00             22       1205.52     1657.00
        8       1203.63      393.00
        9       1203.62      442.00
       10       1203.74      535.00
       11       1203.88      633.00
       12       1203.89      744.00
       13       1203.92      837.00
       14       1203.94      947.00
       15       1204.37     1050.00

*********************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  SPRR
    DATE:   1/11/2004
    TIME:  13:28.58
*********************************************
    INPUT COEFFICENT VALUES.
POINT     HEAD     COEFFICIENT
-----     ----     -----------
    1     0.00          2.6000
    2     5.00          2.6000
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  SPRR
    DATE:   1/11/2004
    TIME:  13:28.58
*********************************************
    ELEVATION     DISCHARGE (CFS)
    ---------     ---------------
      1203.00                0.00
      1203.20                0.00
      1203.40                0.00
      1203.60                8.42
      1203.80               94.79
      1204.00              323.64
      1204.20              731.99
      1204.40             1278.65
      1204.60             2017.49
      1204.80             2982.61
      1205.00             4115.94
```

RC224: 100-Year Peak Flow
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\hec-1\200\miscchnl.fm2
Worksheet	RC224
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.030	
Channel Slope	0.004500	ft/ft
Water Surface Elevation	4.53	ft
Discharge	612.00	cfs



E.4.4 BS230

BS230 – BROADWAY ROAD AT TEMPE CANAL

View North along Tempe Canal from Broadway Rd.

View west along Broadway Rd from Tempe Canal

View west at Broadway Rd crossing of Tempe Canal.

Peak Flow Event

- Peak Flow in Broadway Rd at Dobson Rd = 101 cfs. Street flow depth = 0.88 ft.
- Flow within SB230 is predominantly street flow to the west. Retention storage available north of Broadway Rd.
- 2-48" RCP within Broadway Rd carry a total of 84 cfs west and cross/go under Tempe Canal. Remaining flow for storage routing is S230.
- Peak Flow at S230 = 150 cfs
- BS230 Results: Peak flow = 145 cfs
  Peak storage = 1 ac-ft
  Peak stage = 1202.20 ft
- Conclusion: Ponding to 1202.20 along canal, mainly in westernmost commercial area, flow south across Broadway Rd at residential street/low point, minor flow to Tempe Canal, no flow in Broadway Rd across Tempe Canal – high point.

- RC230: Approx. flow depth from quick FlowMaster calc along neighborhood street is 1.09 ft.

View south across intersection of Broadway Rd and El Dorado Circle. (RC230)

View south along El Dorado Circle. (RC230)

Rating Curve for BS230

```
*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*********************************************
    PROJECT:  BROADWAY
    ENGINEER:  KVM
    DATE:   1/30/2004
    TIME:  14:31.26
---------------------------------------------
    INPUT PARAMETERS
---------------------------------------------
    STARTING WSEL:       1202.00
    MAXIMUM WSEL:        1206.20
    STEP SIZE:              0.20
    BREADTH OF WEIR:       50.00

*********************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  BROADWAY
    DATE:   1/30/2004
    TIME:  14:31.26
*********************************************
    POINT     ELEVATION     STATION
    -----     ---------     -------
    POINT     ELEVATION     STATION          POINT     ELEVATION     STATION
    -----     ---------     -------          -----     ---------     -------
        1       1206.00        0.00             16       1203.36     1893.00
        2       1203.92      633.00             17       1203.76     2000.00
        3       1203.69      746.00             18       1203.60     2105.00
        4       1203.32      853.00             19       1203.45     2210.00
        5       1202.71      959.00             20       1203.29     2316.00
        6       1202.40     1064.00             21       1203.18     2425.00
        7       1201.89     1173.00             22       1203.73     2528.00
        8       1202.07     1283.00             23       1203.41     2574.00
        9       1202.60     1342.00             24       1203.77     2680.00
       10       1203.79     1445.00             25       1203.68     2819.00
       11       1204.26     1548.00             26       1203.65     2908.00
       12       1204.34     1650.00             27       1203.60     2946.00
       13       1204.44     1693.00             28       1206.32     3027.00
       14       1203.29     1720.00
       15       1202.95     1816.00

*********************************************
    WEIR COEFFICIENT TABLE

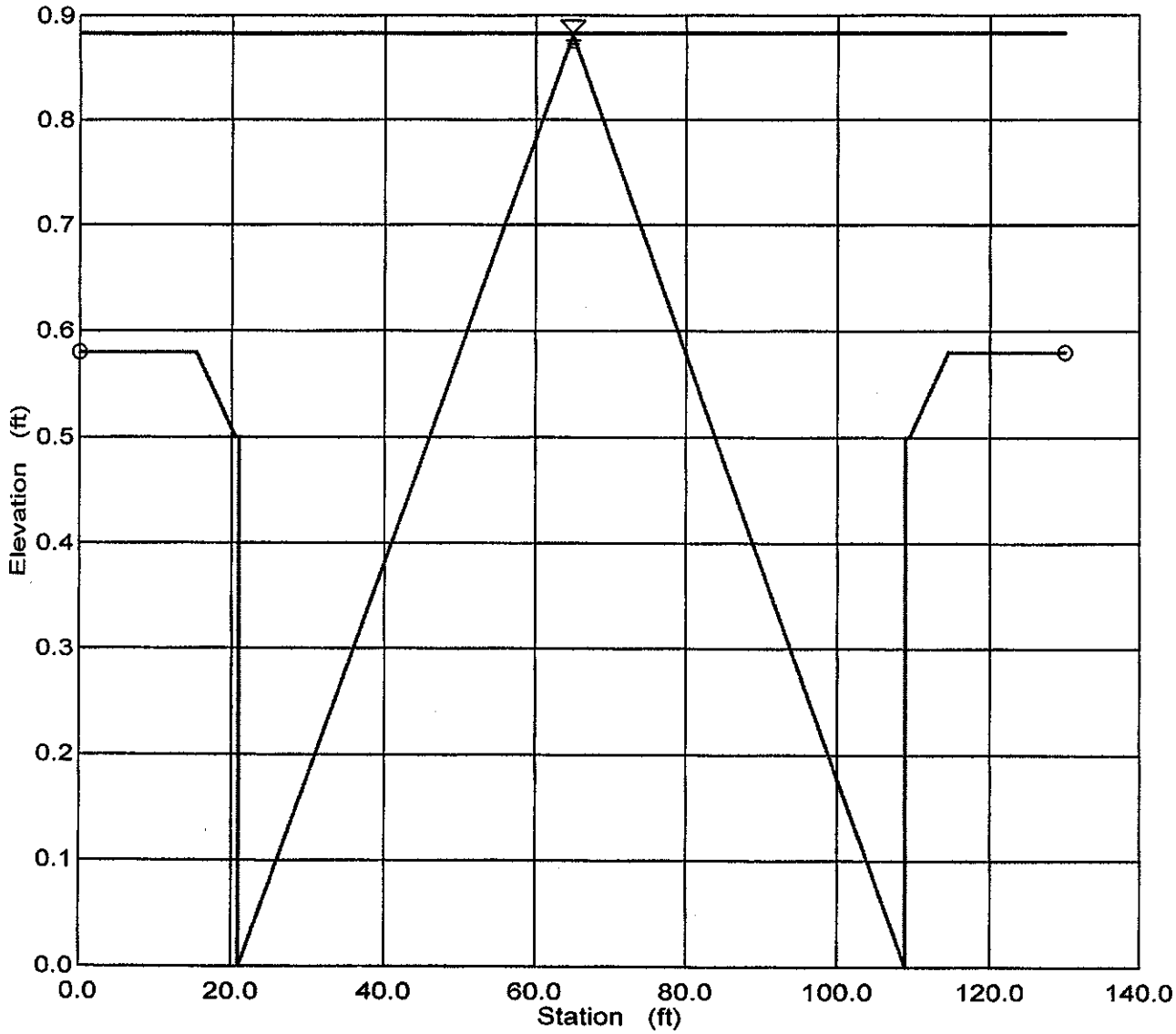
    PROJECT:  BROADWAY
    DATE:   1/30/2004
    TIME:  14:31.26
*********************************************
    INPUT COEFFICENT VALUES.
POINT     HEAD      COEFFICIENT
-----     ----      -----------
    1     0.00          2.6000
    2     8.00          2.6000

*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  BROADWAY
    DATE:   1/30/2004
    TIME:  14:31.26
*********************************************
    ELEVATION     DISCHARGE (CFS)          ELEVATION     DISCHARGE (CFS)
    ---------     ---------------          ---------     ---------------
      1202.00               3.44            1205.00           13899.87
      1202.20              42.72            1205.20           16488.25
      1202.40             126.78            1205.40           19273.76
      1202.60             260.29            1205.60           22252.93
      1202.80             453.05            1205.80           25423.29
      1203.00             705.82            1206.00           28783.12
      1203.20            1032.61
      1203.40            1481.69
      1203.60            2113.55
      1203.80            3009.90
      1204.00            4218.30
      1204.20            5681.02
      1204.40            7384.33
      1204.60            9337.19
      1204.80           11513.64
```

S229W: 100-Year Peak Event
Cross Section for Irregular Channel

Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	S229W
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

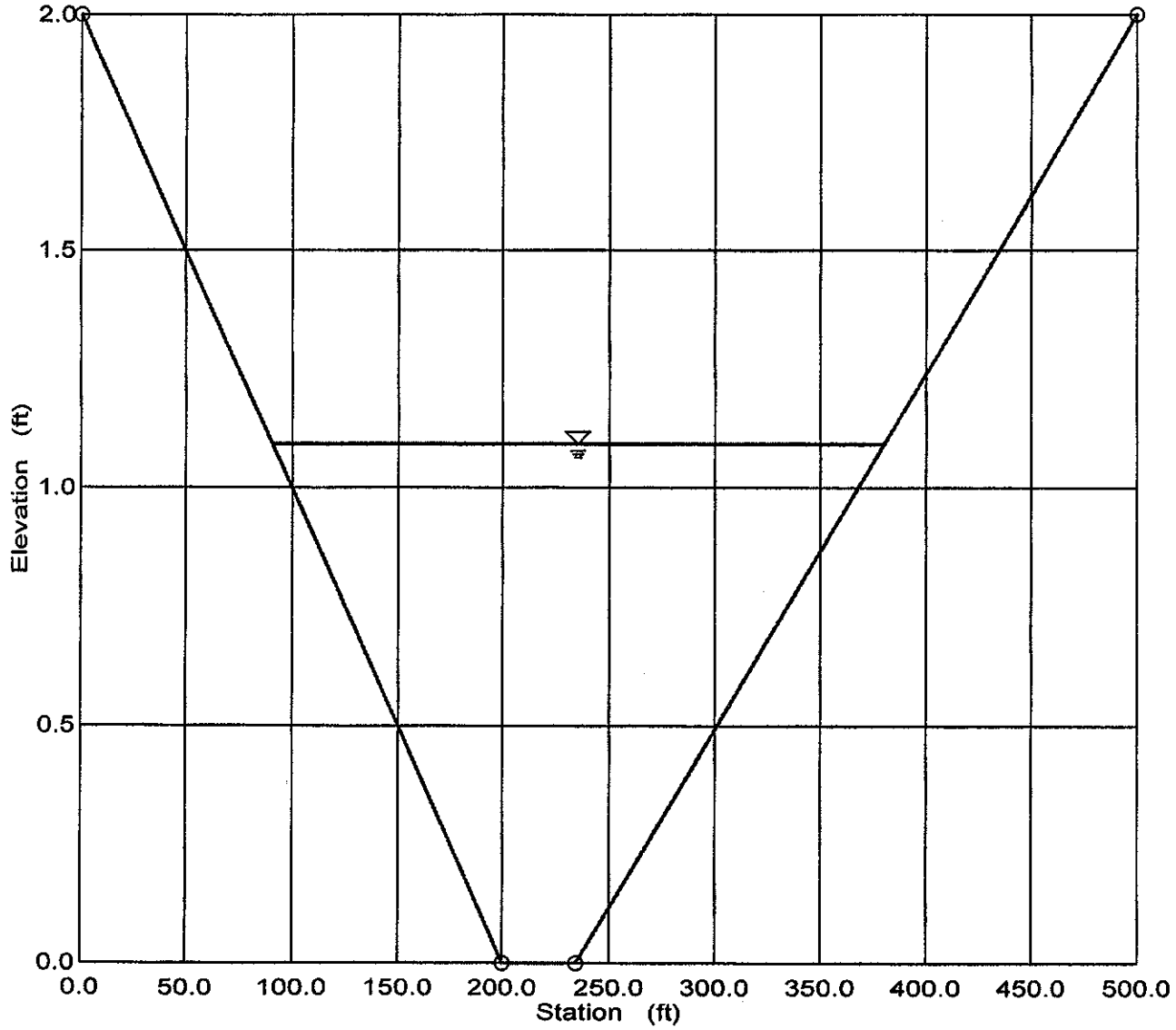
Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.001900	ft/ft
Water Surface Elevation	0.88	ft
Discharge	101.00	cfs



RC230: 100-Year Peak Flow
Cross Section for Irregular Channel

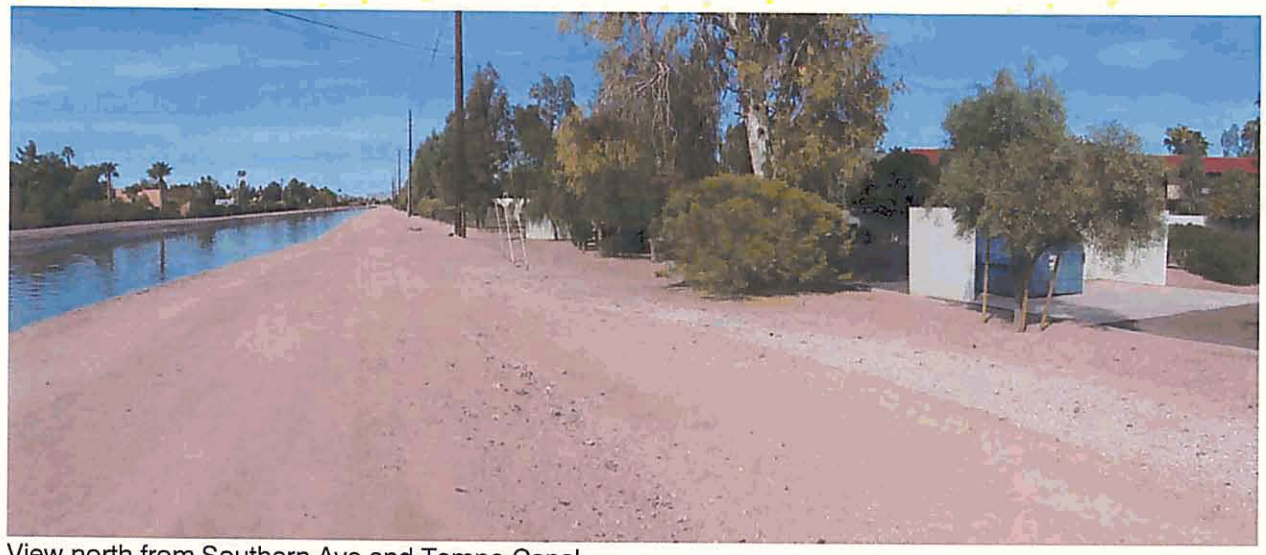
Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	RC230
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.051	
Channel Slope	0.001500	ft/ft
Water Surface Elevation	1.09	ft
Discharge	145.00	cfs



E.4.5 BS244A, SB251

BS244A – SOUTHERN AVENUE AT TEMPE CANAL



View north from Southern Ave and Tempe Canal.

View south toward intersection of Southern Ave and Tempe Canal

Peak Flow Event

- Peak Flow in Southern Ave at Dobson Rd= 289 cfs. Street flow depth = 1.10 ft.
- Peak Flow at CP244A = 872 cfs
- BS244A Results: Peak flow = 731 cfs
  Peak storage = 40 ac-ft
  Peak stage = 1200.12 ft
- Conclusion: Ponding to 1200.12 along Tempe Canal, flow south across Southern Ave near San Jose St.

Rating Curve for BS244A

```
*******************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
*******************************************
    PROJECT:  BS244A
    ENGINEER:  KVM
    DATE:   1/25/2004
    TIME:  15:27. 8
-------------------------------------------
    INPUT PARAMETERS
-------------------------------------------
    STARTING WSEL:       1199.00
    MAXIMUM WSEL:        1202.20
    STEP SIZE:              0.20
    BREADTH OF WEIR:       50.00

*******************************************
    INPUT ELEVATION/STATION TABLE.
    PROJECT:  BS244A
    DATE:   1/25/2004
    TIME:  15:27. 8
*******************************************
```

POINT	ELEVATION	STATION	POINT	ELEVATION	STATION
1	1202.00	0.00	16	1200.67	1557.00
2	1201.12	226.00	17	1200.74	1660.00
3	1200.78	335.00	18	1201.07	1715.00
4	1200.52	442.00	19	1200.68	1816.00
5	1200.20	550.00	20	1200.73	1922.00
6	1199.79	662.00	21	1200.64	2024.00
7	1199.46	777.00	22	1200.68	2130.00
8	1199.43	859.00	23	1201.42	2239.00
9	1199.34	967.00	24	1201.83	2290.00
10	1199.72	1074.00	25	1201.81	2395.00
11	1200.25	1184.00	26	1201.54	2504.00
12	1200.83	1294.00	27	1201.29	2611.00
13	1201.10	1401.00	28	1200.95	2723.00
14	1201.17	1450.00	29	1201.13	2829.00
15	1200.29	1468.00	30	1201.12	2938.00
POINT	ELEVATION	STATION	POINT	ELEVATION	STATION
31	1201.07	2996.00	46	1203.08	4351.00
32	1201.62	3100.00	47	1203.29	4377.00
33	1200.69	3200.00	48	1201.69	4433.00
34	1201.42	3305.00	49	1201.85	4487.00
35	1201.17	3408.00	50	1201.22	4585.00
36	1201.28	3513.00	51	1201.48	4690.00
37	1201.25	3600.00	52	1201.69	4796.00
38	1201.37	3704.00	53	1201.88	4898.00
39	1201.54	3808.00	54	1202.01	5001.00
40	1201.64	3910.00	55	1202.16	5102.00
41	1201.56	4016.00	56	1201.90	5199.00
42	1201.34	4087.00	57	1201.89	5304.00
43	1201.13	4177.00	58	1201.92	5399.00
44	1201.40	4284.00	59	1201.53	5505.00
45	1203.26	4320.00	60	1201.84	5611.00
POINT	ELEVATION	STATION	POINT	ELEVATION	STATION
61	1202.14	5719.00	76	1203.57	7200.00
62	1202.10	5828.00	77	1204.14	7215.00
63	1201.76	5909.00			
64	1201.99	5978.00			
65	1201.83	6085.00			
66	1202.09	6195.00			
67	1202.26	6261.00			
68	1202.22	6370.00			
69	1202.11	6477.00			
70	1201.98	6586.00			
71	1202.02	6695.00			
72	1202.10	6814.00			
73	1201.80	6924.00			
74	1201.93	7031.00			
75	1202.52	7139.00			

```
*********************************************
    WEIR COEFFICIENT TABLE
    PROJECT:  BS244A
    DATE:   1/25/2004
    TIME:  15:27. 8
*********************************************
    INPUT COEFFICENT VALUES.
POINT     HEAD     COEFFICIENT
-----     ----     -----------
    1     0.00          2.6000
    2     5.00          2.6000

*********************************************
    UNEVEN WEIR FLOW PROGRAM
    FORTRAN VERSION 1.0
    PROJECT:  BS244A
    DATE:   1/25/2004
    TIME:  15:27. 8
*********************************************
    ELEVATION     DISCHARGE (CFS)          ELEVATION     DISCHARGE (CFS)
    ---------     ---------------          ---------     ---------------
      1199.00                0.00            1202.00           14704.15
      1199.20                0.00
      1199.40                1.35
      1199.60               53.86
      1199.80              186.44
      1200.00              399.89
      1200.20              696.92
      1200.40             1084.68
      1200.60             1582.01
      1200.80             2250.96
      1201.00             3197.61
      1201.20             4457.14
      1201.40             6167.71
      1201.60             8413.69
      1201.80            11232.87
```

2-10' x 6' CBC Connecting Channel to ADOT Channel

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

June 9, 2004

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Span (ft)	10.0
Culvert Rise (ft)	6.0
FHWA Chart Number	8
FHWA Scale Number (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.013
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	967.0
Invert Elevation at Downstream end of Culvert (ft)	1,187.61
Invert Elevation at Upstream end of Culvert (ft)	1,188.11
Culvert Slope (ft/ft)	0.0005
Starting Flow Rate (cfs)	428.0
Incremental Flow Rate (cfs)	0.0
Ending Flow Rate (cfs)	428.0
Starting Tailwater Depth (ft)	6.0
Incremental Tailwater Depth (ft)	0.0
Ending Tailwater Depth (ft)	6.0

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
428.0	6.0	6.22	8.32	6.0	3.85	6.0	7.13

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Phone:(281)440-3787, Fax:(281)440-4742, Email:software@dodson-hydro.com
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INLET CONTROL:
INLET ELEVATION = 1188.11
+ HEADWATER DEPTH = 6.22
HEADWATER ELEV = 1194.33

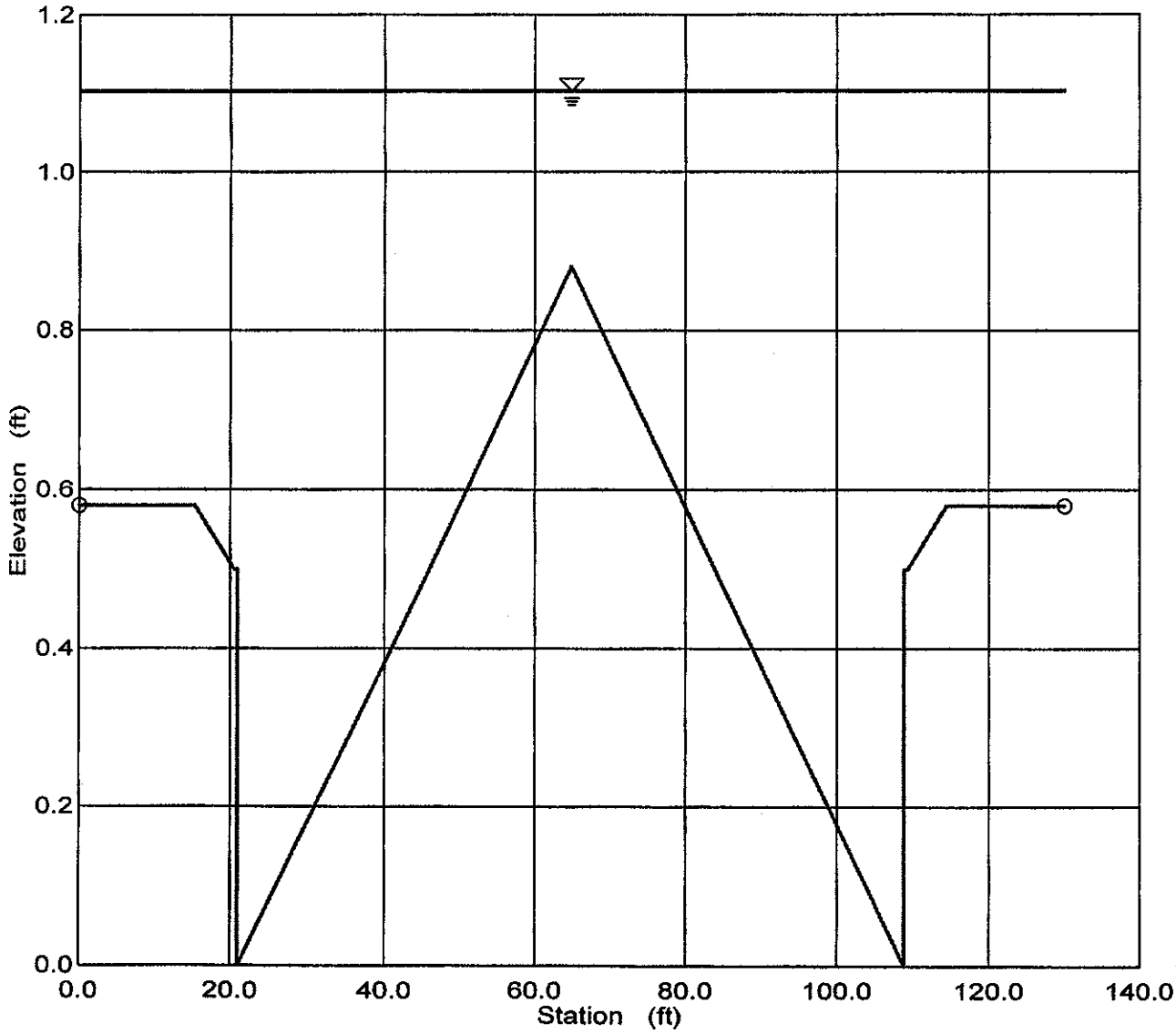
OUTLET CONTROL:
INLET ELEVATION = 1188.11
+ HEADWATER DEPTH = 8.32
HEADWATER ELEV = 1196.43

HEADWALL ELEVATION AT UPSTREAM END OF CULVERTS = 1199.74 MINIMUM

S243W: 100-Year Peak Flow
Cross Section for Irregular Channel

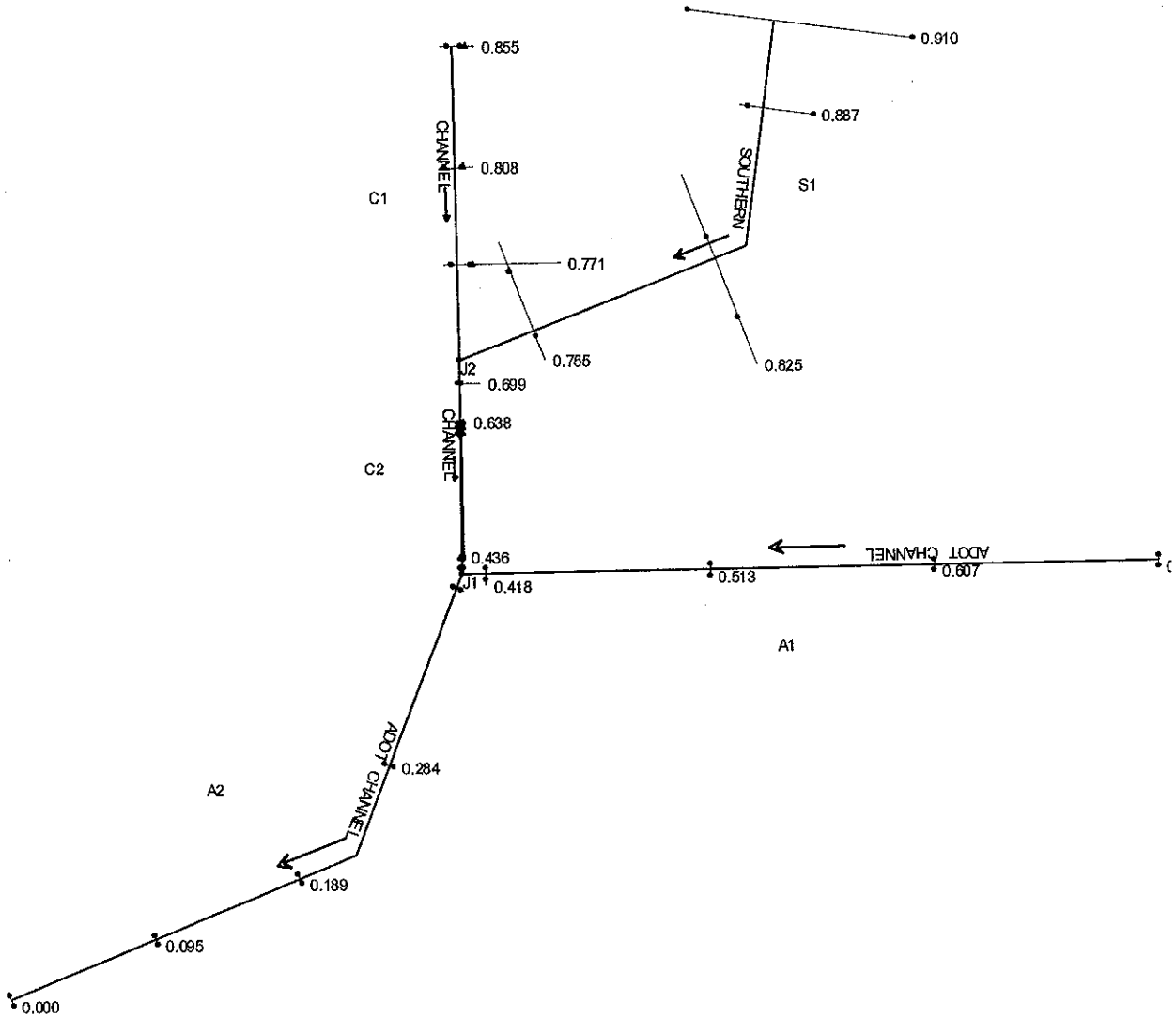
Project Description	
Project File	g:\projects\03-023 tempe canal fp\hydro\streets\flosplit.fm2
Worksheet	S243W: Southern Ave at Dobson Rd
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.018	
Channel Slope	0.003600	ft/ft
Water Surface Elevation	1.10	ft
Discharge	289.00	cfs



E.5 HEC-RAS MODEL "SOUTHERN.PRJ"

HEC-RAS SCHEMATIC



OUTPUT TABLE – Plan: EXIST Profile: 100-YR

River	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)	
CHANNEL	C1	0.855	100-YR	125.00	1193.00	1199.76		1199.77	0.000017	0.71	175.87	47.31	0.06
CHANNEL	C1	0.808	100-YR	125.00	1193.00	1199.76		1199.76	0.000011	0.54	231.79	86.88	0.05
CHANNEL	C1	0.771	100-YR	856.00	1193.00	1199.76		1199.76	0.000005	0.40	324.82	422.36	0.03
CHANNEL	C2	0.699	100-YR	856.00	1193.00	1199.65		1199.73	0.000179	2.76	488.11	315.23	0.22
CHANNEL	C2	0.638	100-YR	856.00	1191.85	1199.32		1199.61	0.000553	4.39	199.87	96.49	0.38
CHANNEL	C2	0.630	100-YR	856.00	1191.30	1199.35		1199.58	0.000150	3.96	238.07	100.38	0.31
CHANNEL	C2	0.623	100-YR	856.00	1190.00	1199.44		1199.54	0.000046	2.62	340.40	80.11	0.18
CHANNEL	C2	0.619	100-YR	856.00	1188.11	1199.32	1191.82	1199.53	0.000106	3.63	235.50	21.00	0.19
CHANNEL	C2	0.5275		Culvert									
CHANNEL	C2	0.436	100-YR	856.00	1187.61	1196.80		1197.10	0.000181	4.44	192.94	21.00	0.26
CHANNEL	C2	0.431	100-YR	856.00	1188.50	1196.75		1197.09	0.000208	4.74	183.73	42.70	0.36
CHANNEL	C2	0.418	100-YR	856.00	1190.00	1196.70		1197.08	0.000243	4.90	175.73	38.05	0.39
ADOT CHANNEL	A1	0.702	100-YR	1617.00	1192.10	1197.53	1197.53	1199.39	0.001714	10.94	147.79	39.77	1.00
ADOT CHANNEL	A1	0.607	100-YR	1617.00	1191.40	1197.07	1196.58	1198.50	0.001217	9.60	168.38	42.79	0.85
ADOT CHANNEL	A1	0.513	100-YR	1617.00	1190.70	1195.94	1195.93	1197.75	0.001718	10.78	150.05	41.72	1.00
ADOT CHANNEL	A1	0.418	100-YR	1617.00	1189.83	1196.43		1197.05	0.000366	6.35	256.06	54.33	0.49
ADOT CHANNEL	A2	0.399	100-YR	2506.00	1189.00	1195.38		1196.90	0.000998	9.87	253.90	53.38	0.80
ADOT CHANNEL	A2	0.284	100-YR	2506.00	1188.43	1194.88		1196.29	0.000907	9.52	263.27	54.25	0.76
ADOT CHANNEL	A2	0.189	100-YR	2506.00	1187.95	1194.49		1195.83	0.000857	9.29	269.88	55.44	0.74
ADOT CHANNEL	A2	0.095	100-YR	2506.00	1187.47	1193.62	1193.04	1195.30	0.001139	10.40	240.89	51.47	0.85
ADOT CHANNEL	A2	0.000	100-YR	2506.00	1187.00	1192.64	1192.48	1194.63	0.001460	11.31	221.66	50.57	0.95
SOUTHERN	S1	0.910	100-YR	731.00	1199.34	1200.13		1200.22	0.001665	2.52	289.81	587.93	0.63
SOUTHERN	S1	0.887	100-YR	731.00	1198.00	1199.92		1200.01	0.001009	2.33	313.50	249.77	0.37
SOUTHERN	S1	0.825	100-YR	731.00	1198.00	1199.84		1199.88	0.000179	1.48	536.45	527.20	0.22
SOUTHERN	S1	0.755	100-YR	731.00	1198.00	1199.75		1199.80	0.000276	1.73	437.55	421.59	0.24

```
                    HEC-RAS Version 3.1.1 May 2003
                     U.S. Army Corp of Engineers
                    Hydrologic Engineering Center
                      609 Second Street, Suite D
                     Davis, California 95616-4687
                            (916) 756-1104

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: Southern Avenue Overtopping
Project File : Southern.prj
Run Date and Time: 10/30/2006 4:56:25 PM

Project in English units

Project Description:
Tempe Canal Floodplain Delineation Study FCD 2002-22
FCD Project Contact: Mike Duncan, PE, CFM

Model Name: Southern.prj

Prepared by Hoskin-Ryan Consultants, Inc.
HRC Project No. 03-023

Model Description: Models the 100-year flow overtopping Southern Avenue between Tempe Canal and Dobson Road. Flow continues south through the Desert Samaritan Hospital site, to a channel parallel with the Tempe Canal. The channel then merges with the ADOT US60 channel, which outlets to the Price drainage tunnel along Loop 101.

Geometry Data Source: Detailed two-foot contour interval topographic mapping for the study area along the Tempe Canal was produced by Cooper Aerial Surveys Co. (Project No. 7038-110902). Supplemental survey along Tempe Canal, Southern Avenue, and through the Desert Samaritan site was provided by Hoskin-Ryan Consultants. Vertical Datum for the project is NAVD 1988.

Flow Data Source: 100-year peak flow values = greater of the 100-year, 6-hour or 100-year, 24-hour flow results from the HEC-1 models named TC-6HR and TC-2HR, prepared by Hoskin-Ryan Consultants, Inc.

Hoskin-Ryan Consultants, Inc.
201 W. Indian School Road
Phoenix, AZ 85013
(602)252-8384

PLAN DATA

Plan Title: Existing Conditions
Plan File : g:\Projects\03\03-023 Tempe Canal FP\Hydro\HEC-RAS\Southern.p01

Geometry Title: Existing Geometry
Geometry File : g:\Projects\03\03-023 Tempe Canal FP\Hydro\HEC-RAS\Southern.g01

Flow Title : Existing 100-Year Peak Flow
Flow File : g:\Projects\03\03-023 Tempe Canal FP\Hydro\HEC-RAS\Southern.f01

Plan Description:
100-year peak flow profile for the existing conditions hydrology and topography; upstream boundary condition is known water surface elevation from overtopping of Southern Avenue

Plan Summary Information:

Number of:	Cross Sections =	24	Mulitple Openings =	0
	Culverts =	1	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 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

FLOW DATA

Flow Title: Existing 100-Year Peak Flow
Flow File : g:\Projects\03\03-023 Tempe Canal FP\Hydro\HEC-RAS\Southern.f01

Flow Data (cfs)

River	Reach	RS	100-YR
SOUTHERN	S1	0.910	731
ADOT CHANNEL	A1	0.702	1617
ADOT CHANNEL	A2	0.399	2506
CHANNEL	C1	0.855	125
CHANNEL	C2	0.699	856

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
SOUTHERN	S1	100-YR	Known WS = 1200.12	
ADOT CHANNEL	A1	100-YR	Normal S = 0.002	
ADOT CHANNEL	A2	100-YR		Normal S = 0.00146
CHANNEL	C1	100-YR	Normal S = 0.01	

GEOMETRY DATA

Geometry Title: Existing Geometry
Geometry File : g:\Projects\03\03-023 Tempe Canal FP\Hydro\HEC-RAS\Southern.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
SOUTHERN	S1		J2
ADOT CHANNEL	A1		J1
ADOT CHANNEL	A2	J1	
CHANNEL	C1		J2
CHANNEL	C2	J2	J1

JUNCTION INFORMATION

Name: J1
Description:
Energy computation Method

Length across Junction

River	Reach	Tributary River	Reach	Length	Angle
ADOT CHANNEL	A1	to ADOT CHANNEL	A2	103	
CHANNEL	C2	to ADOT CHANNEL	A2	105	

```
Name: J2
Description:
Energy computation Method

    Length across Junction              Tributary
     River          Reach                River          Reach        Length   Angle
CHANNEL         C1                to CHANNEL         C2                 381
SOUTHERN        S1                to CHANNEL         C2                 297

CROSS SECTION


RIVER: SOUTHERN
REACH: S1                  RS: 0.910

INPUT
Description:
Station Elevation Data     num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9476.26 1200.52 9584.26  1200.2 9696.26 1199.79 9810.26 1199.46 9893.26 1199.43
10001.26 1199.3410108.26 1199.7210218.26 1200.2510327.26 1200.83

Manning's n Values         num=       1
     Sta   n Val
 9476.26    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9476.2610327.26              160     165     140             .1       .3

CROSS SECTION


RIVER: SOUTHERN
REACH: S1                  RS: 0.887

INPUT
Description:
Station Elevation Data     num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9836.68 1200.04 9836.68 1199.54 9881.68 1199.31 9881.68 1198.83 9913.68 1199.07
 9913.68 1199.59 9915.68 1199.59 9915.68 1199.07 9939.68 1198.83 9939.68 1199.31
 9972.68    1198 9996.68    119910011.68    119810080.68    119810086.68    1200
10119.68    1202

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9836.68     .03 9881.68    .016 9939.68     .0310011.68    .01610080.68     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9836.6810086.68              370     327     290             .1       .3

CROSS SECTION


RIVER: SOUTHERN
REACH: S1                  RS: 0.825

INPUT
Description:
Station Elevation Data     num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9568    1200    9598 1199.64    9622 1199.59    9651 1199.49    9710 1199.39
    9758 1199.27    9758 1198.73    9840  1198.6    9929  1198.3    9964    1198
   10028    1198   10082 1199.25   10115    1200   10288    1200   10338  1201.1

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9568    .016    9929     .03    9964    .016   10082     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9758   10082             390     367     330             .1       .3
```

```
CROSS SECTION


RIVER: SOUTHERN
REACH: S1                    RS: 0.755

INPUT
Description:
Station Elevation Data     num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9830.25    1200 9922.25    1199 9933.25    1198 9946.25    1196 9972.25  1197.5
 9977.25    119810002.25  1198.510032.25    119810034.25    119810043.25  1198.5
10161.25  1198.510161.25    119810182.25  1198.910191.25    119810208.25    1197
10225.25    119610235.25    119410253.25    119410259.25    119610265.25    1198
10276.25    120010296.25 1200.0410297.25    1200

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9830.25    .016 9922.25     .03 9972.25    .01610043.25    .01610161.25     .03
10225.25     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9922.2510182.25              280     297     320              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
10182.2510297.25               T

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A1                    RS: 0.702

INPUT
Description: ADOT Channel west of Dobson Road
Station Elevation Data     num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9978.33    1198 9982.83    1196 9987.33    1194 9991.61  1192.110006.55  1192.1
10010.83    119410015.33    119610020.33    1198

Manning's n Values         num=       1
     Sta   n Val
 9978.33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9978.3310020.33              500     500     500              .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A1                    RS: 0.607

INPUT
Description: ADOT Channel
Station Elevation Data     num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9976.43    1198 9980.43    1196 9984.93    1194 9992.18  1191.410007.18  1191.4
10014.43    119410018.43    119610023.43    1198

Manning's n Values         num=       1
     Sta   n Val
 9976.43    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9976.4310023.43              500     500     500              .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A1                    RS: 0.513
```

```
INPUT
Description: ADOT Channel
Station Elevation Data     num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9974.18    1198 9979.18    1196 9984.18    1194 9992.43  1190.710007.93  1190.7
10016.18    119410021.18    119610025.18    1198

Manning's n Values         num=       1
     Sta   n Val
 9974.18    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.1810025.18              500     500     500             .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A1                  RS: 0.418

INPUT
Description: ADOT Channel
Station Elevation Data     num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9947.23    1198 9974.23    1196 9977.73    1194 9981.23    1192 9984.73    1190
 9985.03 1189.8310012.97 1189.8310013.23    119010016.23    119210019.23    1194
10022.23    1196 10023.6    1197

Manning's n Values         num=       2
     Sta   n Val     Sta   n Val
 9947.23     .02 9974.23    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.2310022.23              103     103     103             .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A2                  RS: 0.399

INPUT
Description: ADOT Channel confluence with channel along Tempe Canal
Station Elevation Data     num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9951.84    1200 9963.84    1198 9972.84    1196 9977.34    1194 9981.84    1192
 9986.34    1190 9989.09    118910014.84    118910016.84    119010020.84    1192
10024.84    119410028.84    119610032.84    119810032.84    1202

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9951.84     .02 9972.84    .01310028.84     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9972.8410028.84              605     605     605             .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A2                  RS: 0.284

INPUT
Description: ADOT Channel
Station Elevation Data     num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9973.03    1196 9976.53    1194 9980.03    1192 9983.53    1190 9986.291188.425
10013.991188.42510017.53    119010022.03    119210027.03    119410032.03    1196

Manning's n Values         num=       1
     Sta   n Val
 9973.03    .013
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.0310032.03              500     500     500             .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A2                 RS: 0.189

INPUT
Description: ADOT Channel
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9966.72    1196 9971.72    1194 9975.72    1192 9979.72    1190 9983.72    1188
 9983.82 1187.9510011.62 1187.9510011.72    118810015.72    119010020.22    1192
10024.72    119410029.72    1196

Manning's n Values        num=       1
     Sta   n Val
 9966.72    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.7210029.72              500     500     500             .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A2                 RS: 0.095

INPUT
Description: ADOT Channel
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9967.35    1196 9972.35    1194 9976.35    1192 9980.35    1190 9984.35    1188
 9985.41 1187.4710012.29 1187.4710013.35    118810017.35    119010021.35    1192
10025.35    119410030.35    1196

Manning's n Values        num=       1
     Sta   n Val
 9967.35    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9967.3510030.35              500     500     500             .1       .3

CROSS SECTION


RIVER: ADOT CHANNEL
REACH: A2                 RS: 0.000

INPUT
Description: ADOT Channel section at Price Tunnel box culverts entrance
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9965.63    1196 9971.63    1194 9975.63    1192 9979.63    1190 9983.63    1188
 9985.63    118710013.63    118710015.63    118810019.63    119010023.63    1192
10027.63    119410033.63    1196

Manning's n Values        num=       1
     Sta   n Val
 9965.63    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.6310033.63                0       0       0             .1       .3

CROSS SECTION


RIVER: CHANNEL
REACH: C1                 RS: 0.855
```

```
INPUT
Description: Channel parallel to the Tempe Canal, through the Desert Samaritan
             Hospital grounds.  Upstream end of channel, start of unlined
             portion of channel.
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9913.27    1204 9913.27    1202 9930.27  1201.5 9930.27    1201 9951.27    1201
 9951.27  1201.5 9962.27  1201.2 9970.27    1200 9979.27    1198 9987.27    1196
 9994.27    1194 9996.27    119310005.27    119310006.27    119410010.27    1196
10014.27    119810019.27    120010048.27 1200.1610051.27    1200

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9913.27     .03 9930.27    .016 9951.27     .03 9970.27     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.2710019.27              247     247     247             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9913.27 9951.27               F

CROSS SECTION


RIVER: CHANNEL
REACH: C1                 RS: 0.808

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9928.39    1204 9928.39    1202 9945.39    1200 9945.39  1199.5 9964.39  1199.5
 9964.39    1200 9968.39  1199.5 9973.39    1198 9982.39    1196 9990.39    1194
 9994.39    119310003.39    119310006.39    119410012.39    119610018.39    1198
10036.39    120010046.39  1200.110047.39    1200

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9928.39     .03 9945.39    .016 9964.39     .03 9973.39     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9968.3910036.39              198     198     198             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9928.39 9964.39               F

CROSS SECTION


RIVER: CHANNEL
REACH: C1                 RS: 0.771

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9586.02    1200 9678.02    1199 9689.02    1198 9702.02    1196 9728.02  1197.5
 9733.02    1198 9758.02  1198.5 9788.02    1198 9790.02    1198 9799.02  1198.5
 9917.02  1198.5 9917.02    1198 9938.02  1198.9 9947.02    1198 9964.02    1197
 9981.02    1196 9991.02    1194 9995.02    119310006.02    119310009.02    1194
10015.02    119610021.02    119810032.02    120010052.02 1200.0410053.02    1200

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9586.02    .016 9678.02     .03 9728.02    .016 9799.02    .016 9917.02     .03
 9981.02     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.0210021.02              381     381     381             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9586.02 9938.02               T
```

```
CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.699

INPUT
Description: Unlined portion of channel
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9673.95    1200 9710.95  1199.7 9839.95  1198.4 9884.95    1198 9888.95    1198
 9894.95    1198 9919.95    1198 9956.95    1198 9980.95    1198 9986.95    1196
 9992.95    1194 9995.95    119310005.95    119310007.95    119410012.95    1196
10016.95    119810033.95    120010049.95  1200.610051.95    1200

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9673.95    .016 9839.95     .03 9888.95    .016 9956.95     .03 9980.95     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9980.9510016.95              315     315     315              .1       .3

CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.638

INPUT
Description: Wall along driveway located at sta 42; unlined portion of channel
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9915.4  1199.5  9957.4 1198.46  9957.4 1201.46  9958.1 1201.46  9958.1 1198.96
  9973.4 1198.96  9979.4    1198  9986.4    1196  9990.4    1194  9998.4 1191.88
 10005.4 1191.85 10008.9    1194 10013.4    1196 10017.4    1198 10019.4    1199
 10021.4    1200 10024.4 1200.47 10048.4 1200.54 10051.4    1200

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9915.4    .016  9958.1     .03  9973.4     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9973.4 10019.4                44      44      44              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  9915.4  9958.1                F

CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.630

INPUT
Description: Wall along driveway located at sta 50; end of lined portion of
             channel, upstream is unlined
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9908.25    1200 9958.25  1197.5 9958.25    1201 9958.95    1201 9958.95    1198
 9977.25    1198 9978.75  1197.6 9984.25    1196 9989.75    1194    9995    1192
 9999.25  1191.310004.25    119210009.95    119410014.25    119610019.25    1198
10023.95    120010050.25  1200.610052.85    1200

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9908.25    .016 9958.95     .03 9977.25    .01310019.25     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9977.2510019.25                40      40      40              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9908.25 9958.95                F
```

```
CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.623

INPUT
Description: Section at channel flare to headwall; obstruction blocks out flow
             below drop into box culvert entrance; 24" pipe outlets at this
             location, at elevation 1188.11
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9946.79    1200 9965.79 1197.89 9965.79 1201.39 9966.49 1201.39 9966.49 1198.39
 9971.79 1198.39 9975.79    1198 9979.79    1196 9983.79    1194 9987.79    1192
 9991.79    1190 9996.79    118810002.79    118810007.79    119010011.79    1192
10015.79    119410019.79    119610023.79 1198.2110036.79    120010060.39 1200.51
10064.49    1200

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9946.79    .016 9966.49     .03 9975.79    .01310023.79     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9975.7910023.79               21      21      21              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9946.79 9966.49                F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 9991.7910007.79    1190

CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.619

INPUT
Description: Upstream end of 2-10'x6' CBC; Top of Headwall Elevation = 1199.76
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9989.5  1199.8  9989.5 1188.11   10000 1188.11 10010.5 1188.11 10010.5  1199.8

Manning's n Values        num=       1
     Sta   n Val
  9989.5    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.5 10010.5               967     967     967              .1       .3

CULVERT


RIVER: CHANNEL
REACH: C2                    RS: 0.5275

INPUT
Description:
Distance from Upstream XS =       .5
Deck/Roadway Width        =      966
Weir Coefficient          =      2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9989.5    1200    1186 9989.54    1200    1186 9989.54    1200 1194.11
 9999.54    1200 1194.11 9999.54    1200    118610000.46    1200    1186
10000.46    1200 1194.1110010.46    1200 1194.1110010.46    1200    1186
 10010.5    1200    1186

Upstream Bridge Cross Section Data
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9989.5  1199.8  9989.5 1188.11   10000 1188.11 10010.5 1188.11 10010.5  1199.8
```

```
Manning's n Values        num=       1
     Sta   n Val
  9989.5    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9989.5 10010.5             .1       .3

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9989.5    1198    1186 9989.54    1198    1186 9989.54    1198 1193.61
 9999.54    1198 1193.61 9999.54    1198    118610000.46    1198    1186
10000.46    1198 1193.6110010.46    1198 1193.6110010.46    1198    1186
 10010.5    1198    1186

Downstream Bridge Cross Section Data
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9989.5  1199.8  9989.5 1187.61   10000 1187.61 10010.5 1187.61 10010.5  1199.8

Manning's n Values        num=       1
     Sta   n Val
  9989.5    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9989.5 10010.5             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       6      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss
Coef
                .5     966     .013     .013        0                  .4                1
Number of Barrels =  2
Upstream   Elevation =  1188.11
Centerline Stations
    Sta.    Sta.
 9994.5410005.46
Downstream Elevation =  1187.61
Centerline Stations
    Sta.    Sta.
 9994.5410005.46

CROSS SECTION


RIVER: CHANNEL
REACH: C2                 RS: 0.436

INPUT
Description: Downstream end of 2-10'x6' CBC
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9989.5  1199.8  9989.5 1187.61   10000 1187.61 10010.5 1187.61 10010.5  1199.8

Manning's n Values        num=       1
     Sta   n Val
  9989.5    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.5 10010.5               26      26      26             .1       .3
```

```
CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.431

INPUT
Description: Channel along Tempe Canal - downstream of box culverts, upstream
             of confluence
Station Elevation Data     num=      17
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9958.64     1202 9958.64     1198 9970.64     1197 9981.64     1196 9984.64     1194
 9987.64     1192 9990.64     1190 9993.64     1189 9996.64  1188.5 9998.64  1188.5
10001.64     118910004.64     119010008.14     119210011.64     119410014.64     1196
10018.64     119810018.64     1202

Manning's n Values         num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
 9958.64      .02 9981.64     .01310018.64      .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.6410014.64               68      68      68             .1       .3

CROSS SECTION


RIVER: CHANNEL
REACH: C2                    RS: 0.418

INPUT
Description: Channel along Tempe Canal - downstream of box culverts, upstream
             of confluence
Station Elevation Data     num=      11
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
  9980.7     1197 9982.53     1196 9986.03     1194 9989.53     1192 9992.53     1190
10007.53     119010011.03     119210014.53     119410017.53     119610022.53     1198
10022.53     1202

Manning's n Values         num=       2
     Sta    n Val     Sta    n Val
  9980.7    .01310022.53      .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9982.5310017.53              105     105     105             .1       .3


SUMMARY OF MANNING'S N VALUES

River:SOUTHERN

      Reach          River Sta.       n1        n2        n3        n4        n5        n6

 S1                   0.910           .015
 S1                   0.887            .03      .016       .03      .016       .03
 S1                   0.825           .016       .03      .016       .03
 S1                   0.755           .016       .03      .016      .016       .03       .02


River:ADOT CHANNEL

      Reach          River Sta.       n1        n2        n3

 A1                   0.702           .013
 A1                   0.607           .013
 A1                   0.513           .013
 A1                   0.418            .02      .013
 A2                   0.399            .02      .013       .02
 A2                   0.284           .013
 A2                   0.189           .013
 A2                   0.095           .013
 A2                   0.000           .013
```

River:CHANNEL

Reach	River Sta.	n1	n2	n3	n4	n5	n6
C1	0.855	.03	.016	.03	.02		
C1	0.808	.03	.016	.03	.02		
C1	0.771	.016	.03	.016	.016	.03	.02
C2	0.699	.016	.03	.016	.03	.02	
C2	0.638	.016	.03	.02			
C2	0.630	.016	.03	.013	.02		
C2	0.623	.016	.03	.013	.02		
C2	0.619	.013					
C2	0.5275	Culvert					
C2	0.436	.013					
C2	0.431	.02	.013	.02			
C2	0.418	.013	.02				

SUMMARY OF REACH LENGTHS

River: SOUTHERN

Reach	River Sta.	Left	Channel	Right
S1	0.910	160	165	140
S1	0.887	370	327	290
S1	0.825	390	367	330
S1	0.755	280	297	320

River: ADOT CHANNEL

Reach	River Sta.	Left	Channel	Right
A1	0.702	500	500	500
A1	0.607	500	500	500
A1	0.513	500	500	500
A1	0.418	103	103	103
A2	0.399	605	605	605
A2	0.284	500	500	500
A2	0.189	500	500	500
A2	0.095	500	500	500
A2	0.000	0	0	0

River: CHANNEL

Reach	River Sta.	Left	Channel	Right
C1	0.855	247	247	247
C1	0.808	198	198	198
C1	0.771	381	381	381
C2	0.699	315	315	315
C2	0.638	44	44	44
C2	0.630	40	40	40
C2	0.623	21	21	21
C2	0.619	967	967	967
C2	0.5275	Culvert		
C2	0.436	26	26	26
C2	0.431	68	68	68
C2	0.418	105	105	105

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: SOUTHERN

Reach	River Sta.	Contr.	Expan.
S1	0.910	.1	.3
S1	0.887	.1	.3
S1	0.825	.1	.3
S1	0.755	.1	.3

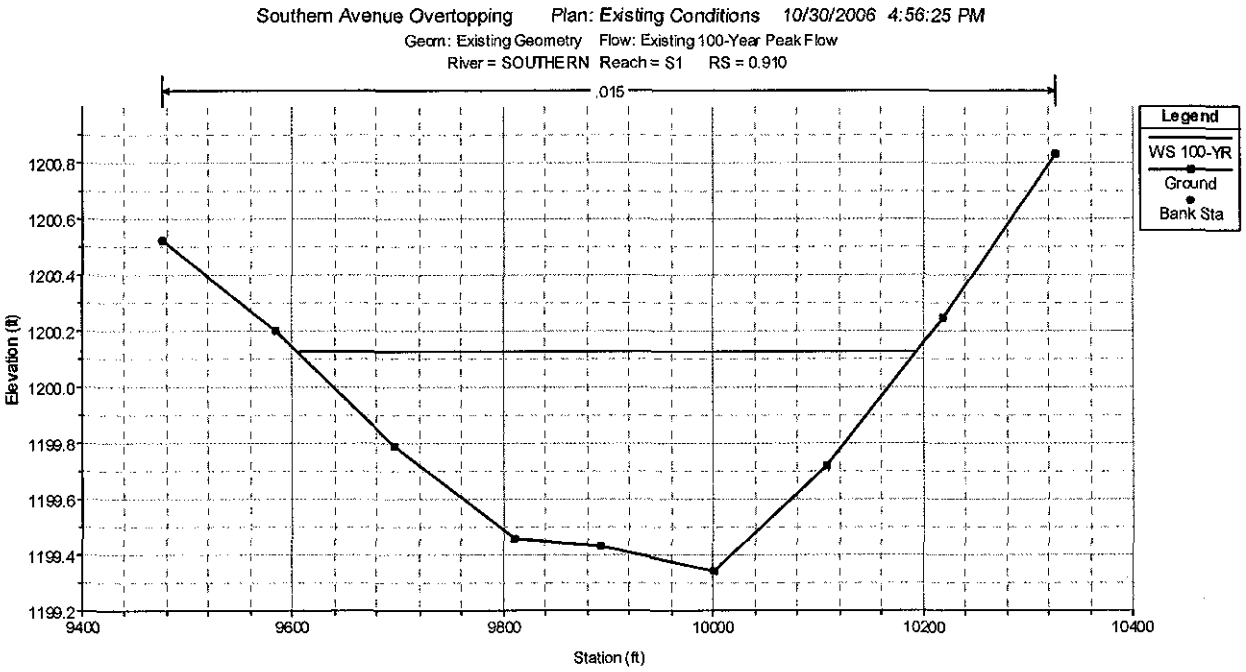
River: ADOT CHANNEL

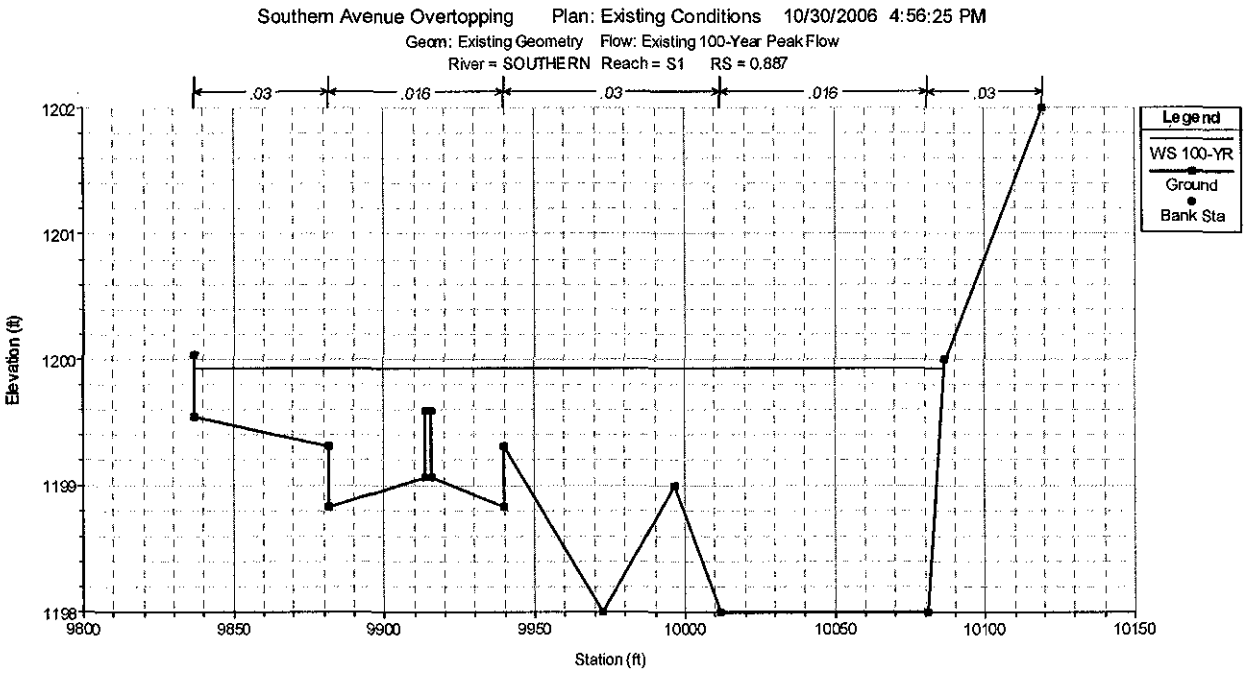
Reach	River Sta.	Contr.	Expan.
A1	0.702	.1	.3
A1	0.607	.1	.3
A1	0.513	.1	.3
A1	0.418	.1	.3
A2	0.399	.1	.3
A2	0.284	.1	.3
A2	0.189	.1	.3
A2	0.095	.1	.3
A2	0.000	.1	.3

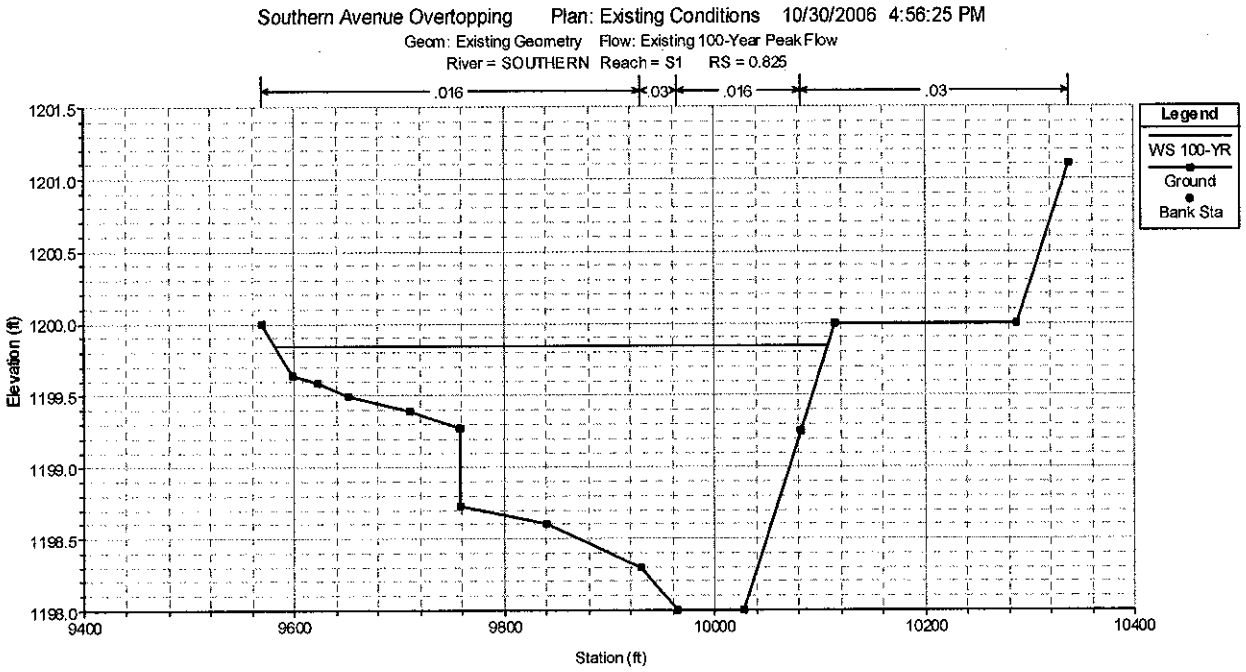
River: CHANNEL

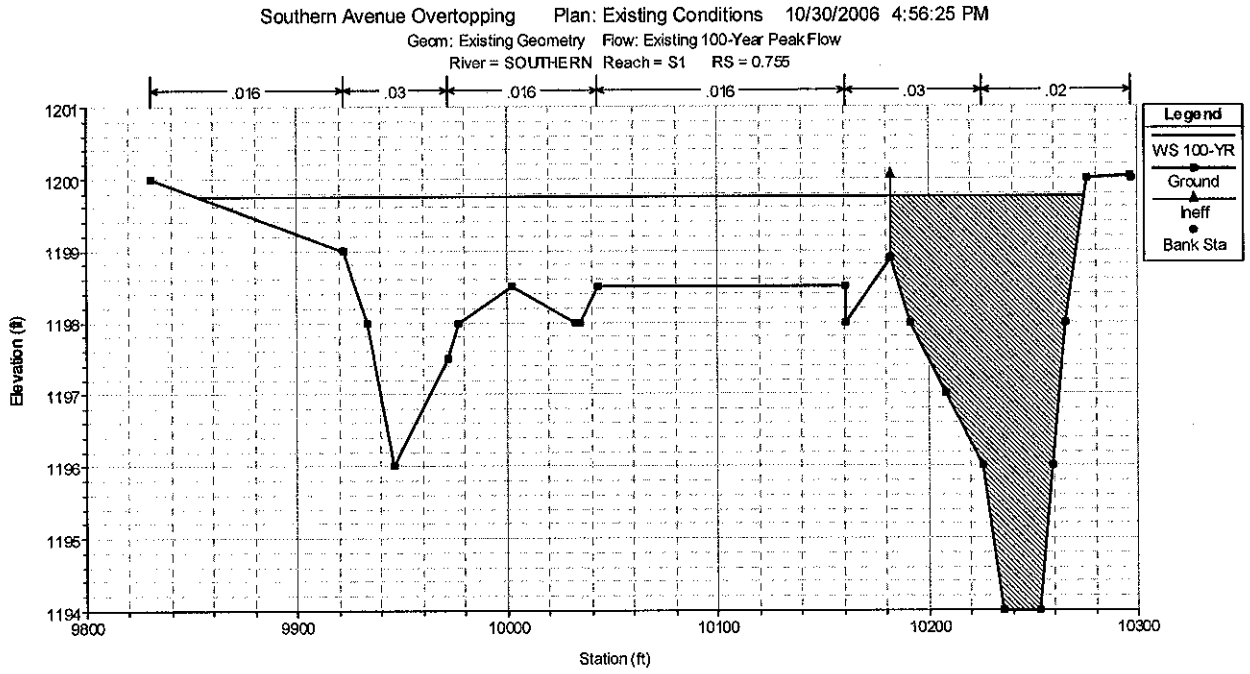
Reach	River Sta.	Contr.	Expan.
C1	0.855	.1	.3
C1	0.808	.1	.3
C1	0.771	.1	.3
C2	0.699	.1	.3
C2	0.638	.1	.3
C2	0.630	.1	.3
C2	0.623	.1	.3
C2	0.619	.1	.3
C2	0.5275	Culvert	
C2	0.436	.1	.3
C2	0.431	.1	.3
C2	0.418	.1	.3

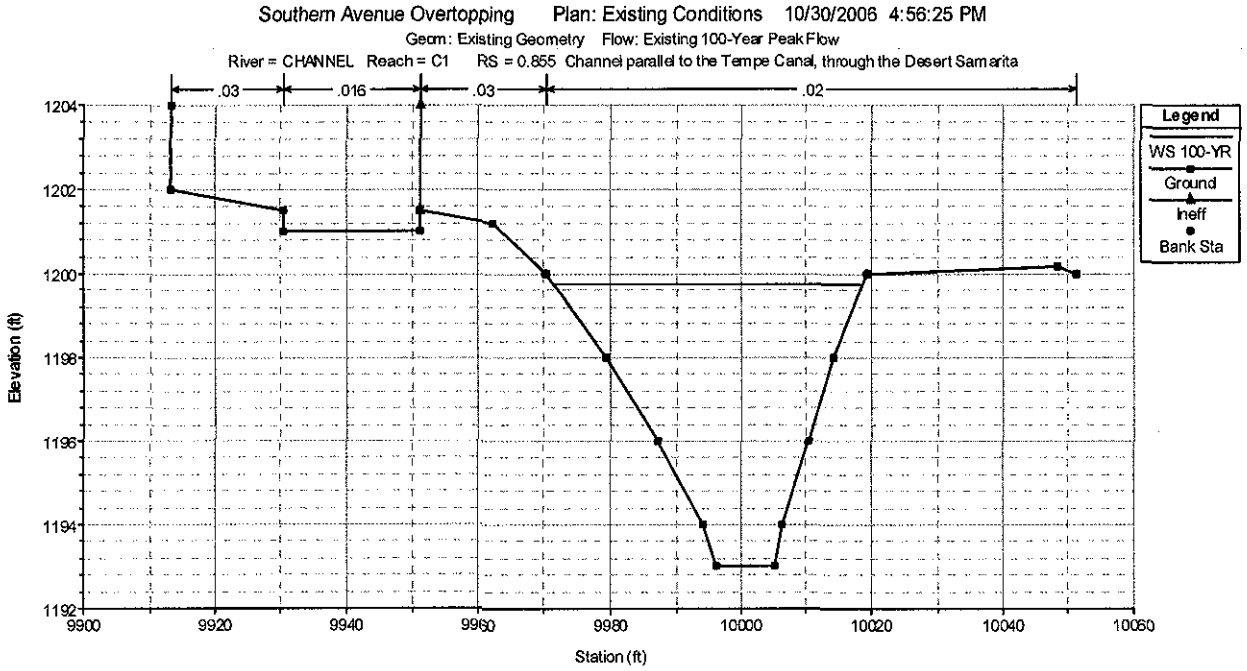
HEC-RAS CROSS-SECTION OUTPUT

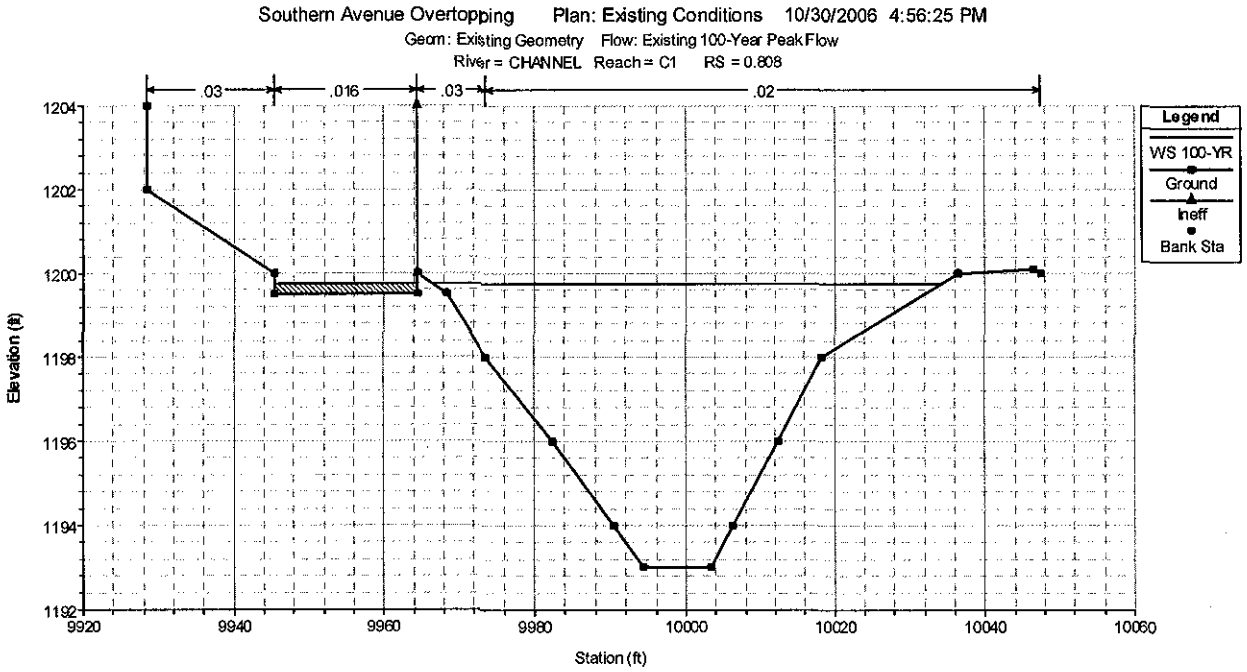


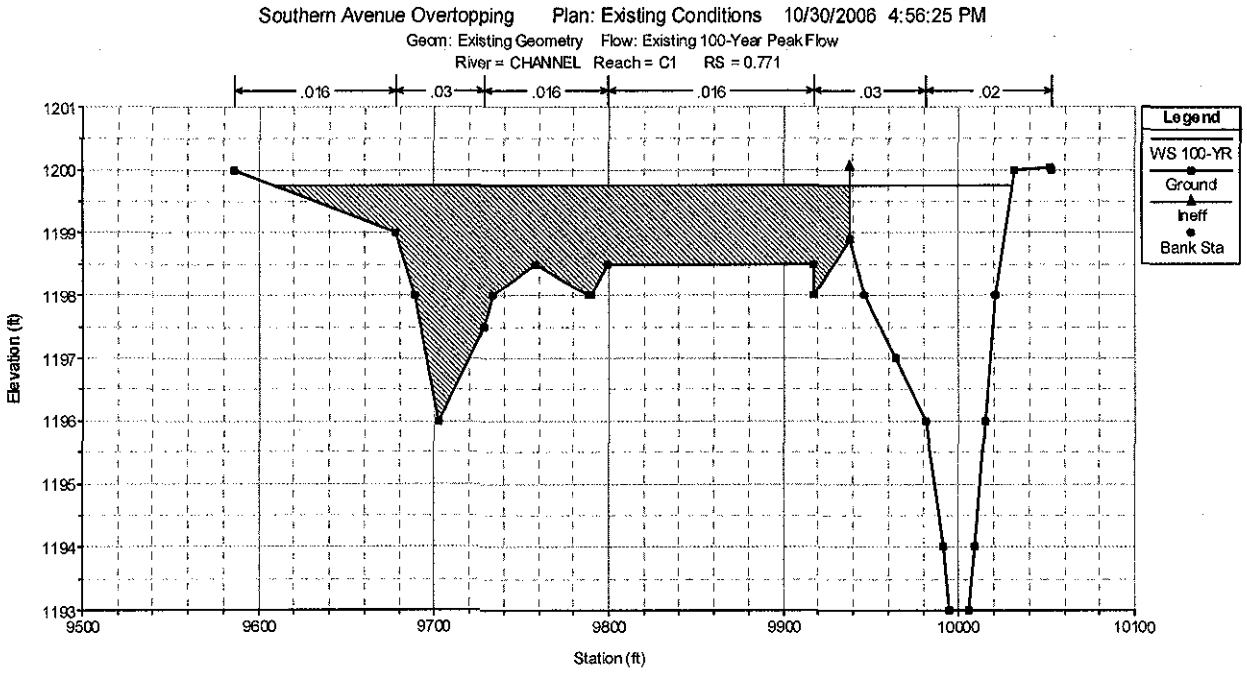


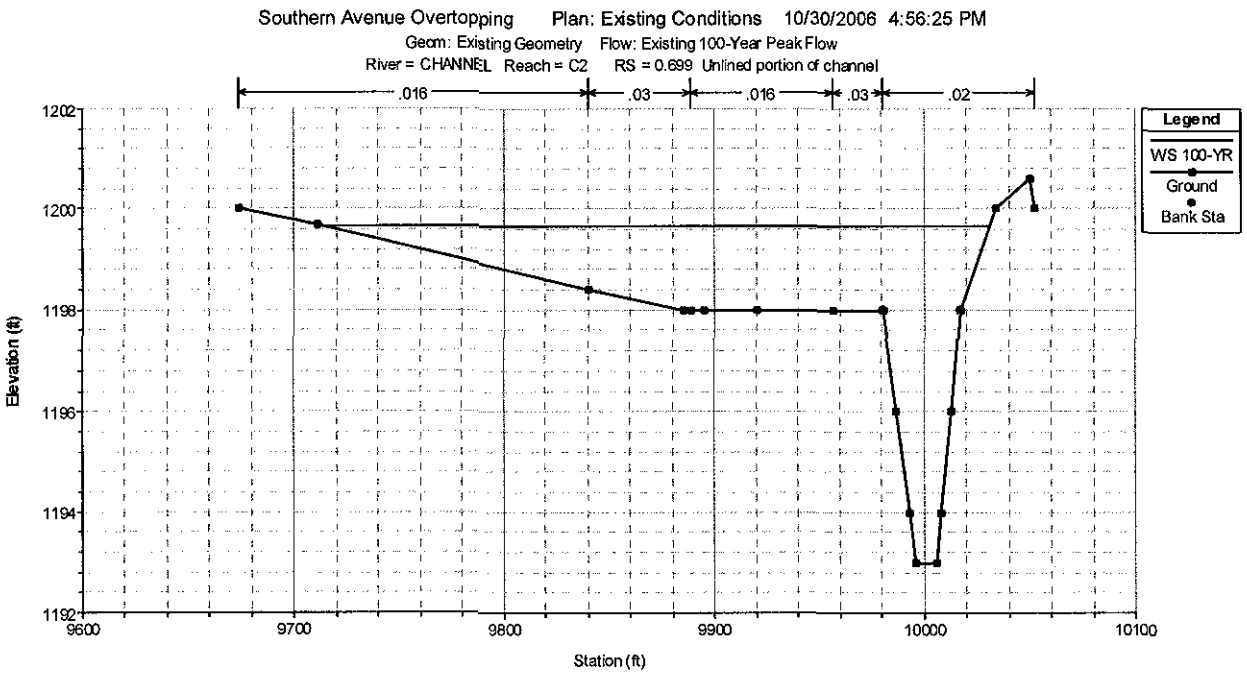

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = SOUTHERN Reach = S1 RS = 0.825
.016
.03
.016
.03
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

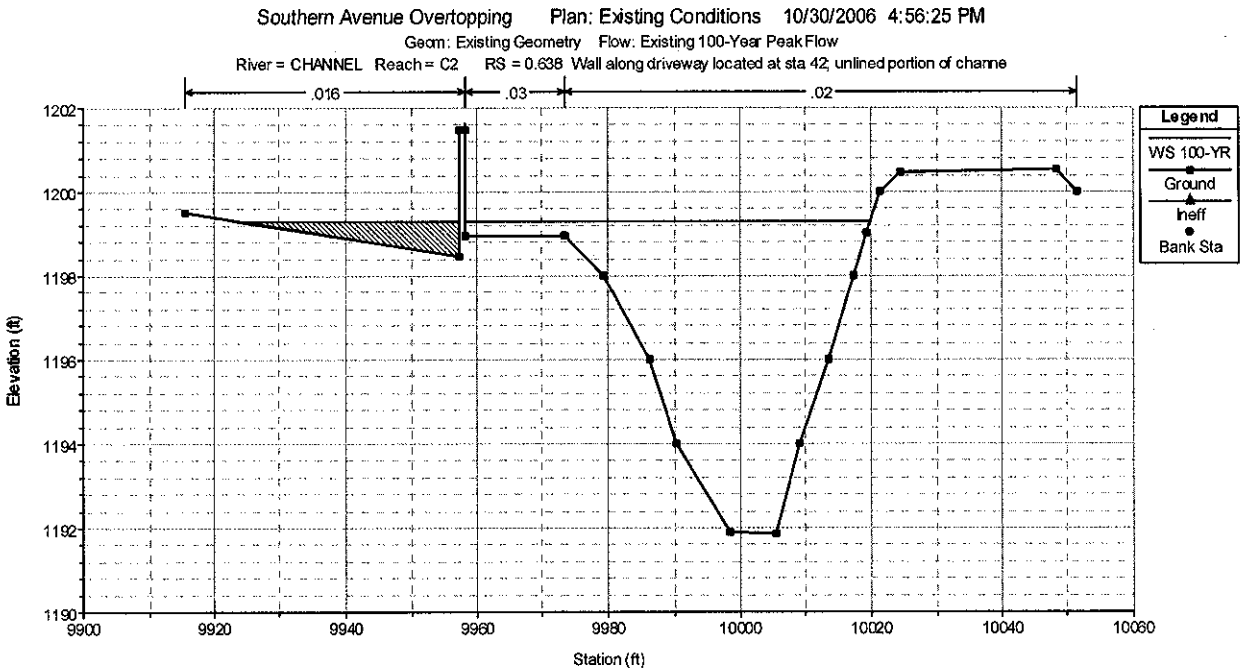

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = SOUTHERN Reach = S1 RS = 0.755
.016
.03
.016
.016
.03
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

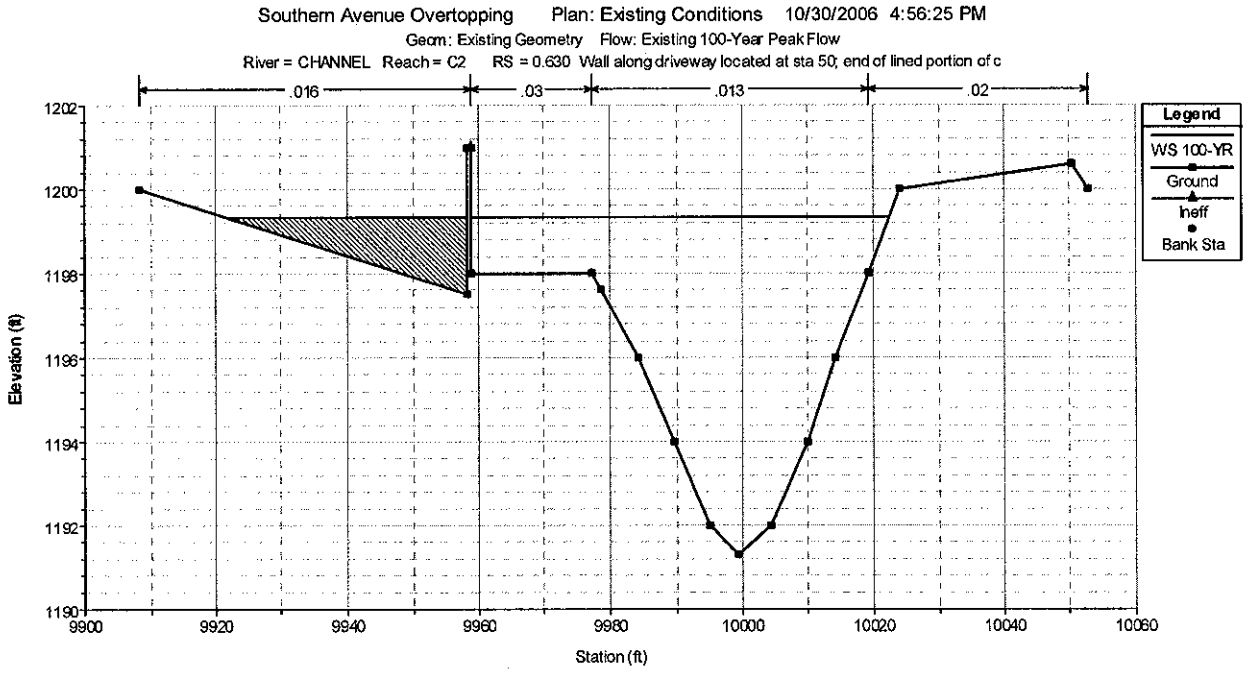

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C1 RS = 0.855 Channel parallel to the Tempe Canal, through the Desert Samarita
.03
.016
.03
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

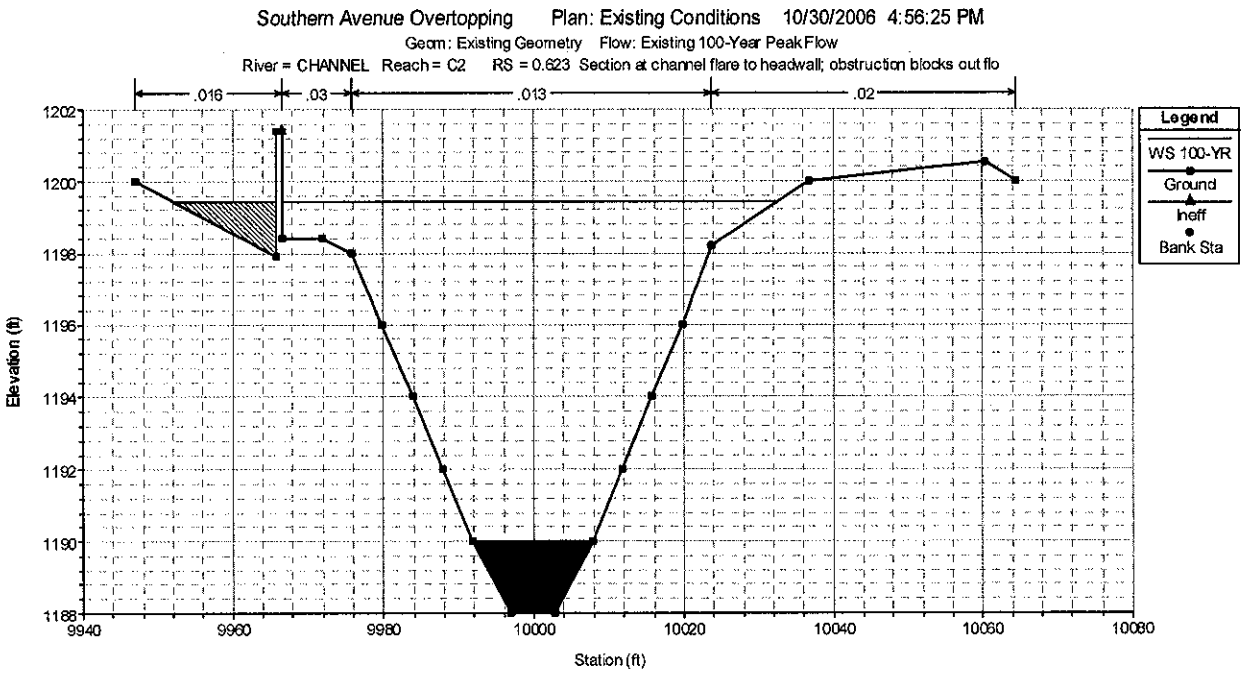

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C1 RS = 0.808
.03
.016
.03
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

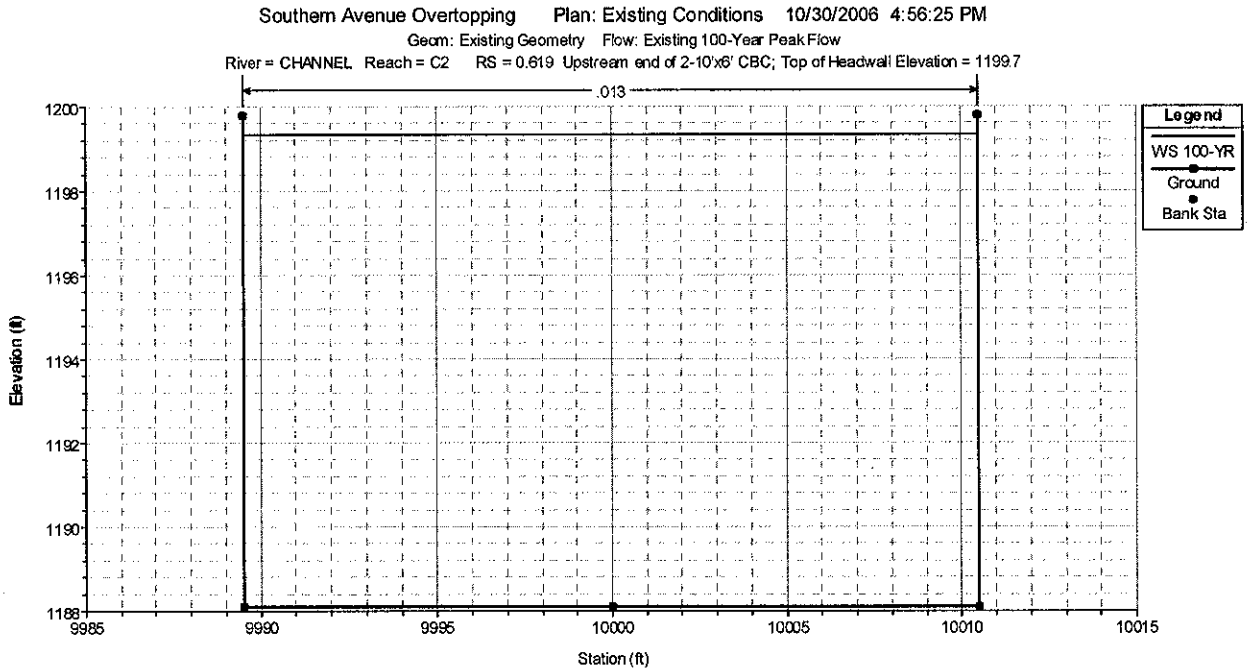

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C1 RS = 0.771
.016
.03
.016
.016
.03
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

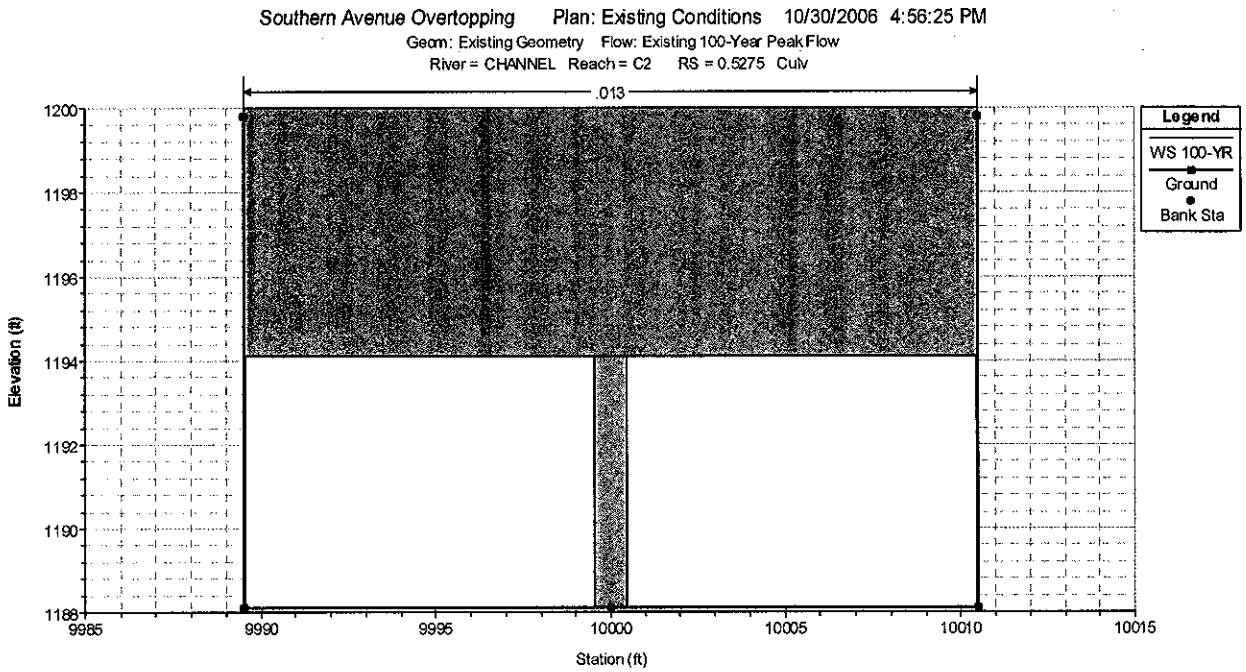

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.699 Unlined portion of channel
.016
.03
.016
.03
.02
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

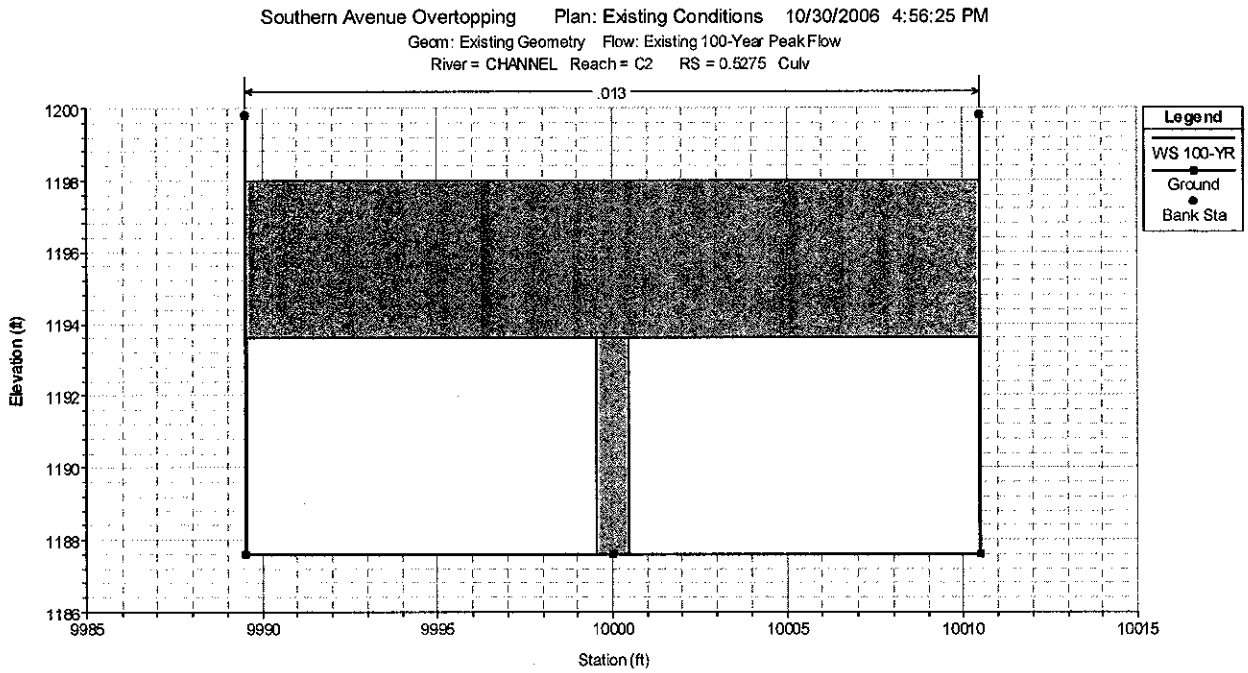

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.638 Wall along driveway located at sta 42; unlined portion of channe
.016
.03
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

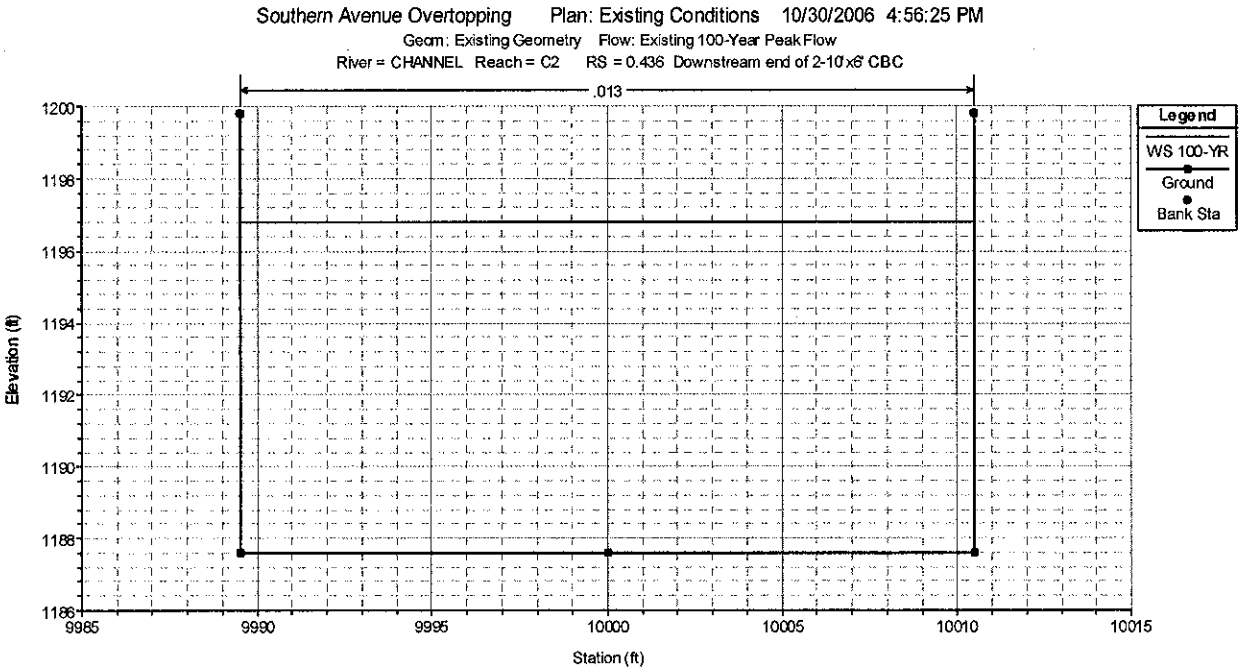

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.630 Wall along driveway located at sta 50; end of lined portion of c
.016
.03
.013
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

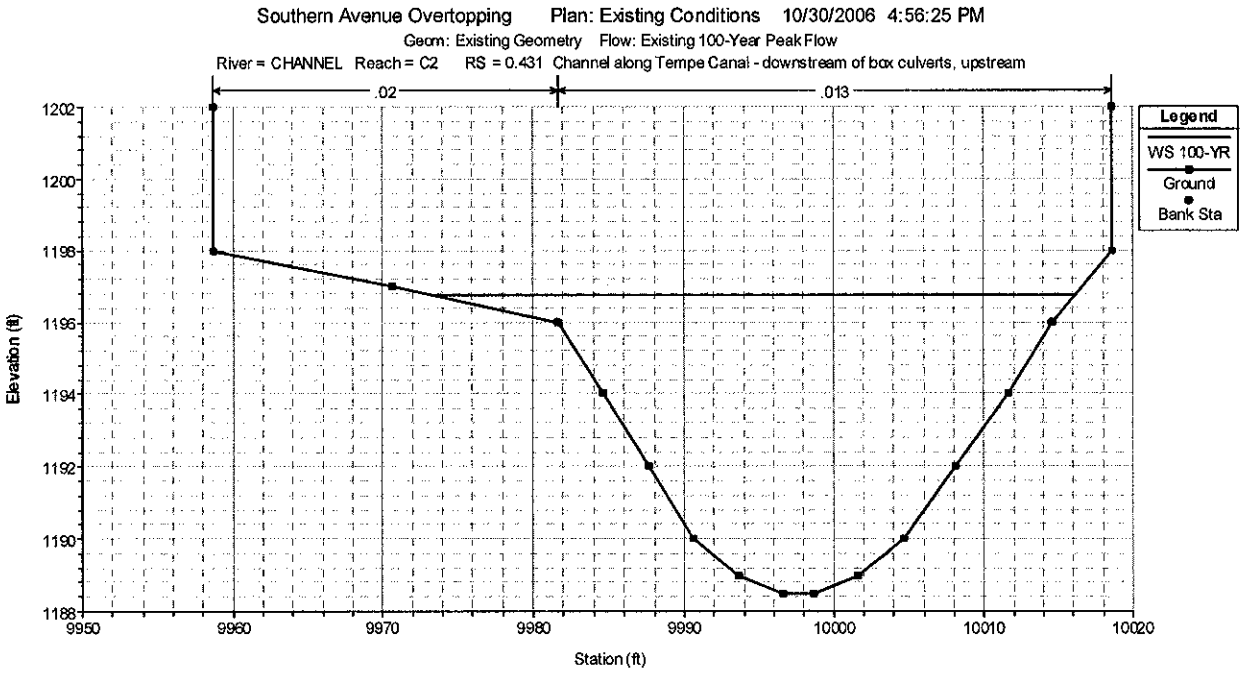

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.623 Section at channel flare to headwall; obstruction blocks out flo
.016
.03
.013
.02
Legend
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

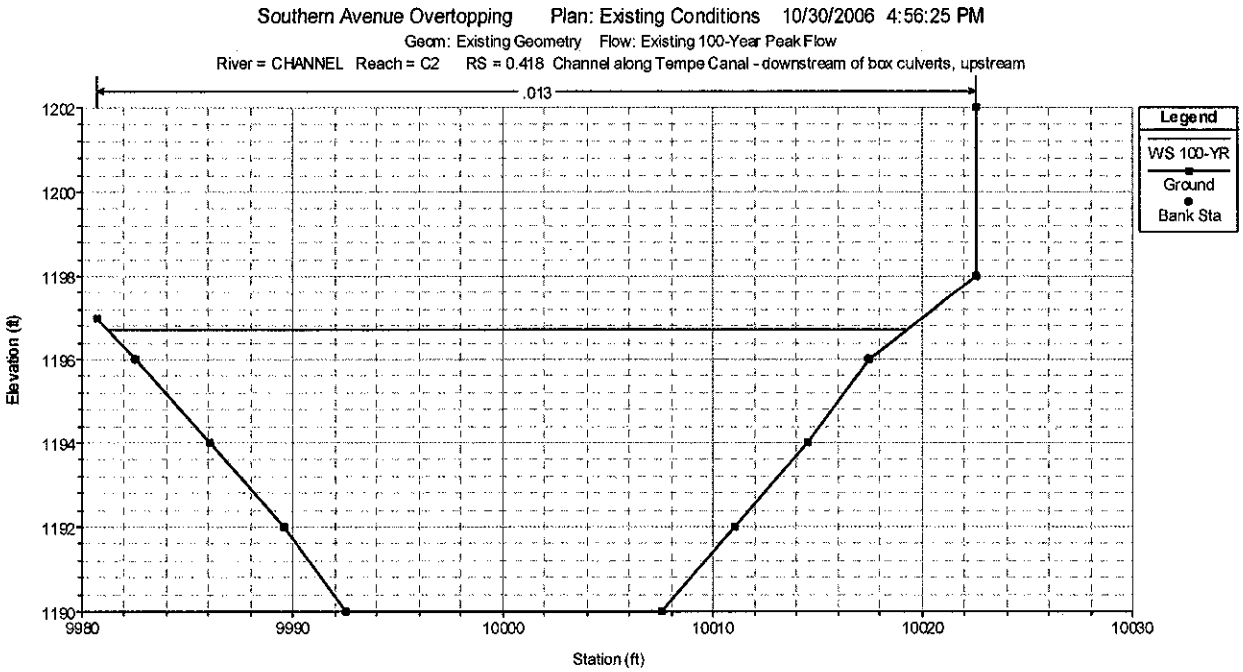

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.619 Upstream end of 2-10'x6' CBC; Top of Headwall Elevation = 1199.7
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

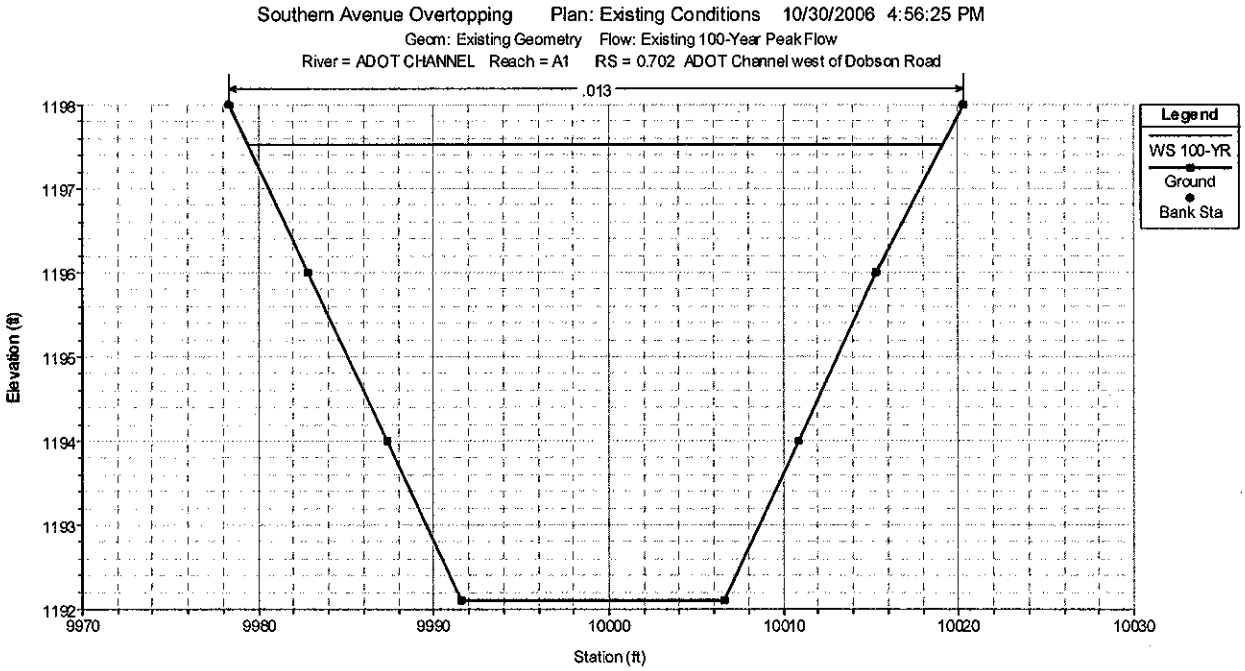

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.5275 Culv
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
1200
1198
1196
1194
1192
1190
1188
9985
9990
9995
10000
10005
10010
10015
Station (ft)

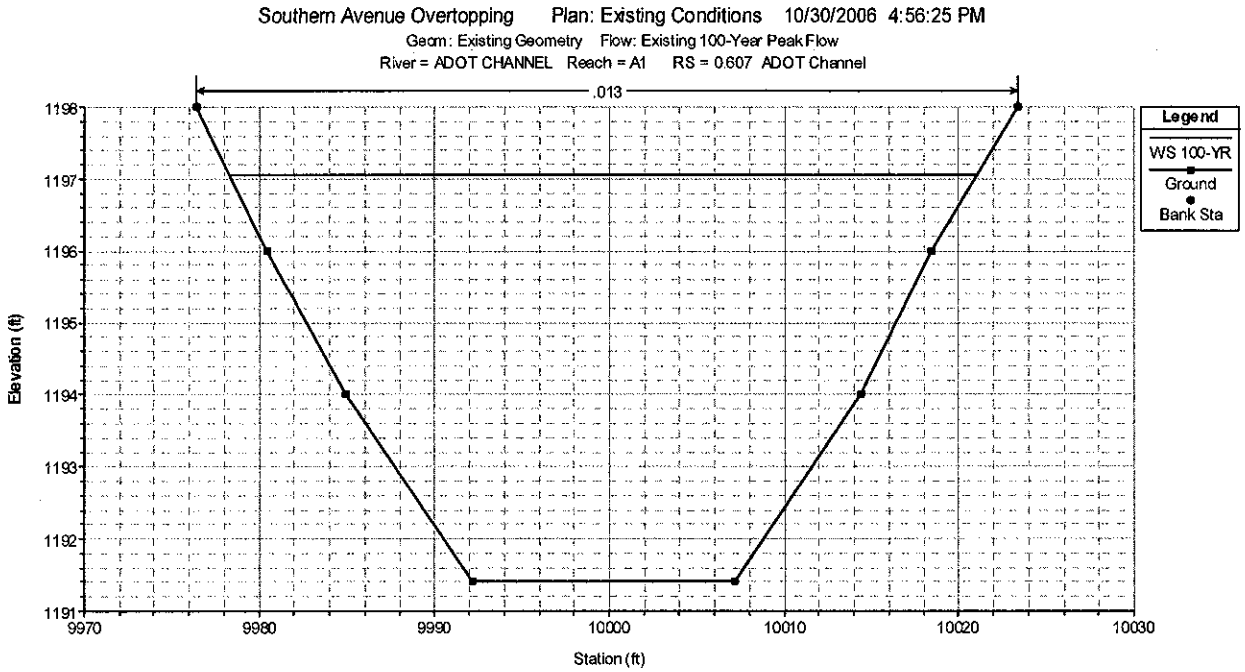

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.5275 Culv
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
1200
1198
1196
1194
1192
1190
1188
1186
9985
9990
9995
10000
10005
10010
10015
Station (ft)

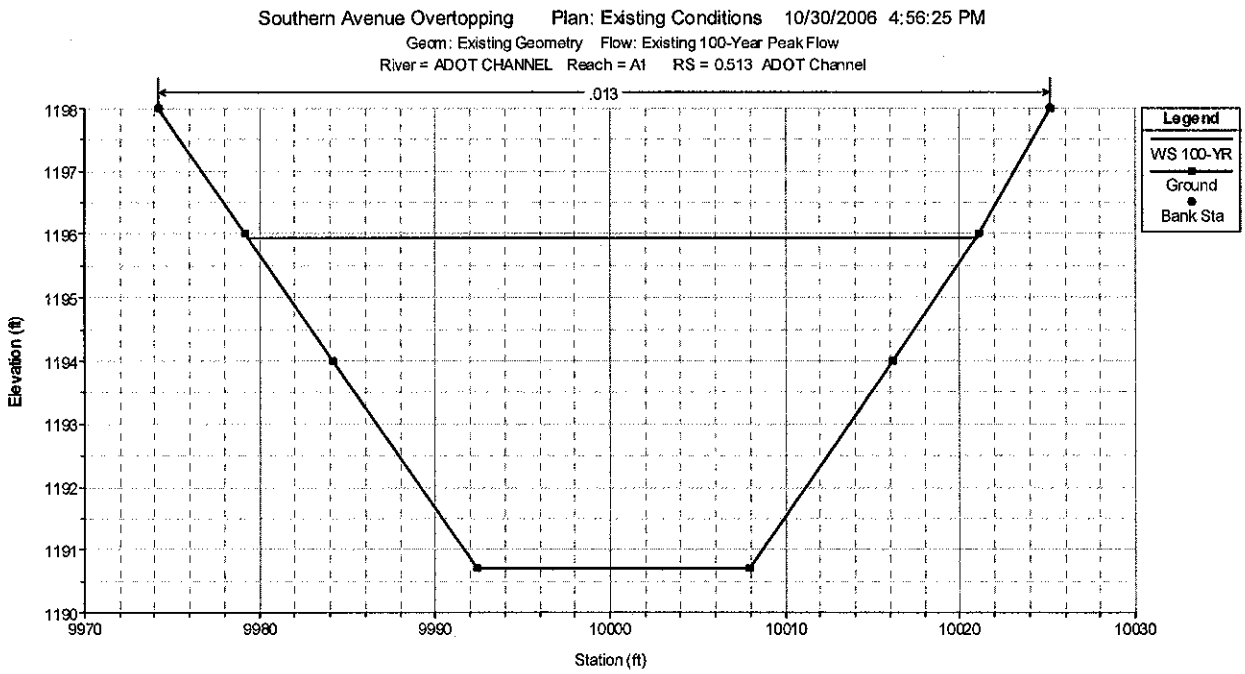

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.436 Downstream end of 2-10'x6' CBC
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

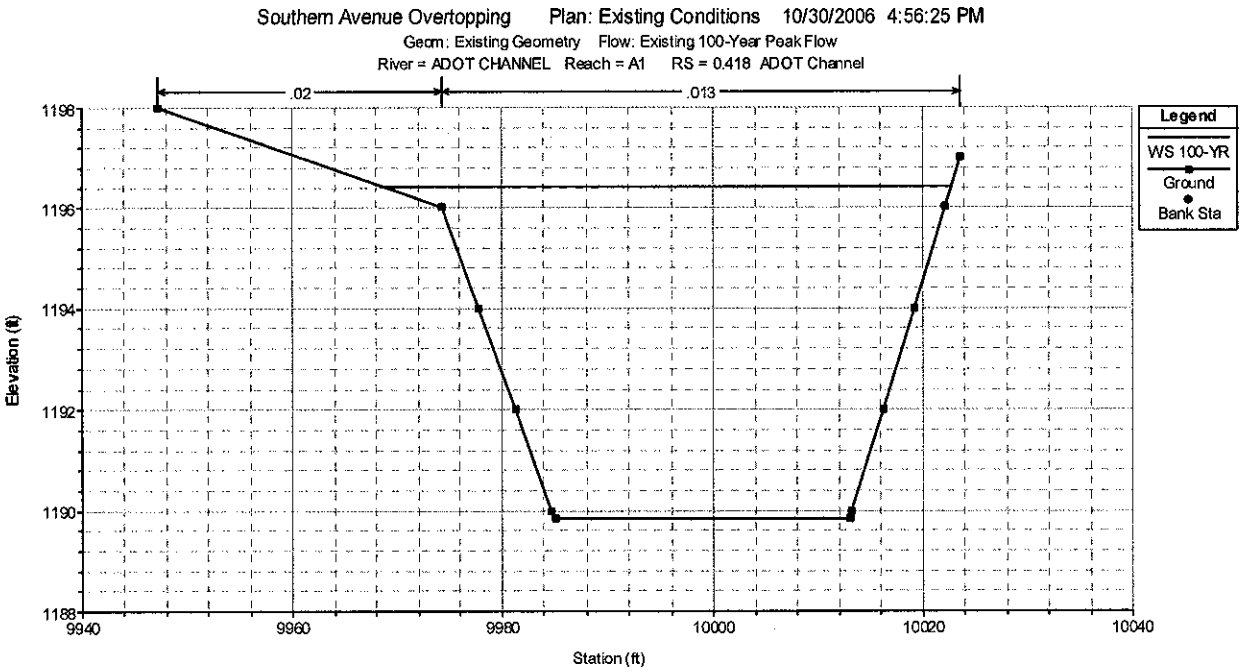

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.431 Channel along Tempe Canal - downstream of box culverts, upstream
.02
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

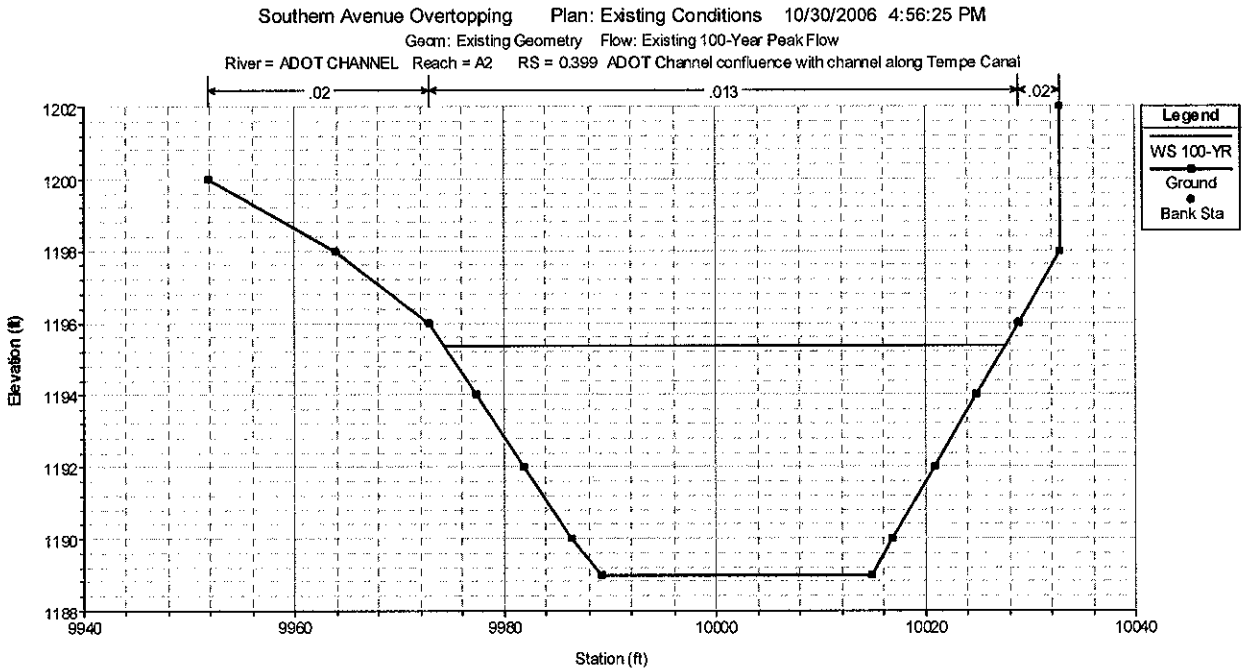

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = CHANNEL Reach = C2 RS = 0.418 Channel along Tempe Canal - downstream of box culverts, upstream
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

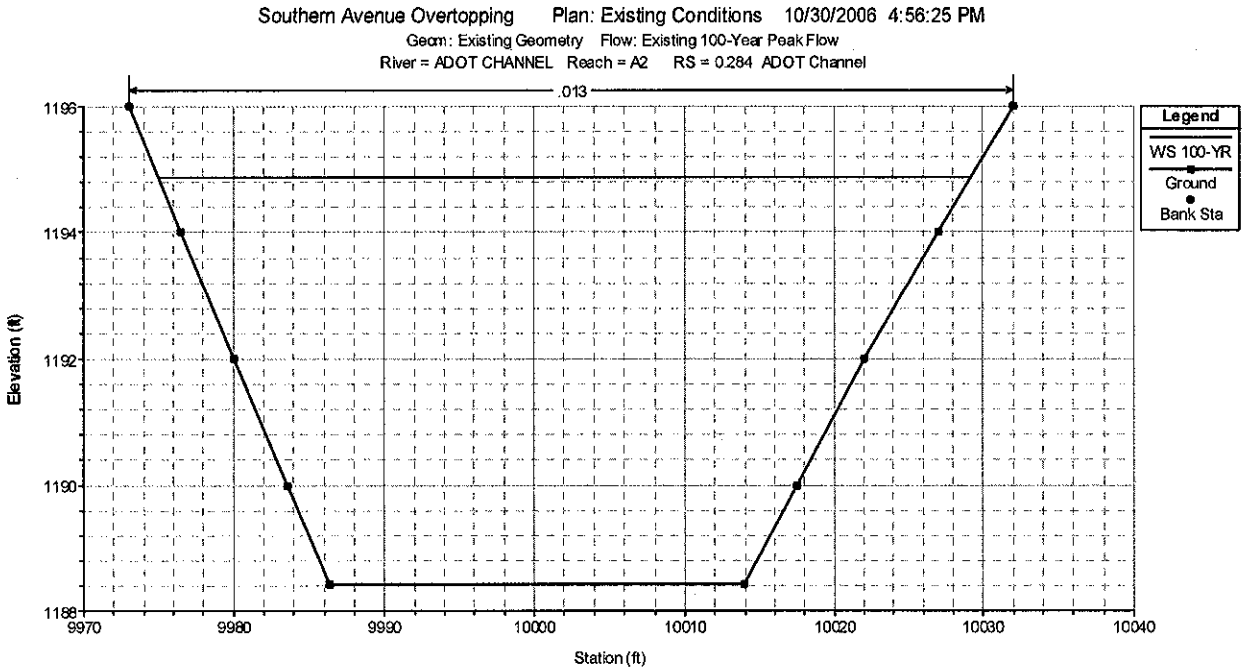

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A1 RS = 0.702 ADOT Channel west of Dobson Road
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

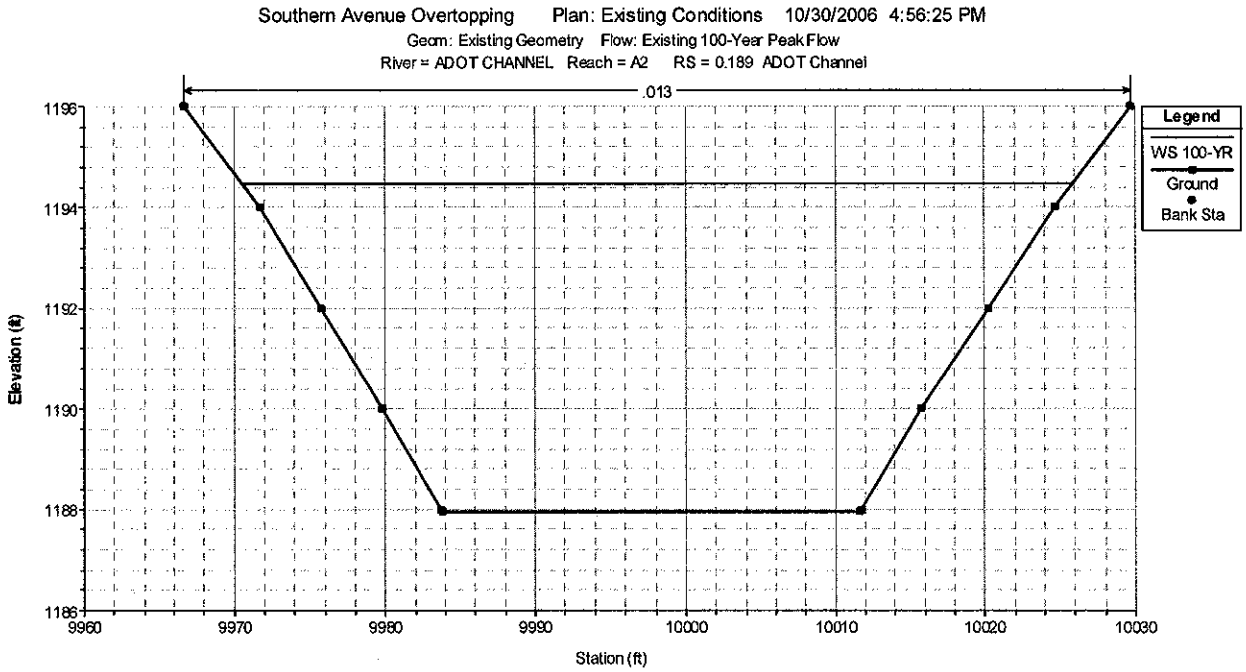

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A1 RS = 0.607 ADOT Channel
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
1198
1197
1196
1195
1194
1193
1192
1191
9970
9980
9990
10000
10010
10020
10030
Station (ft)

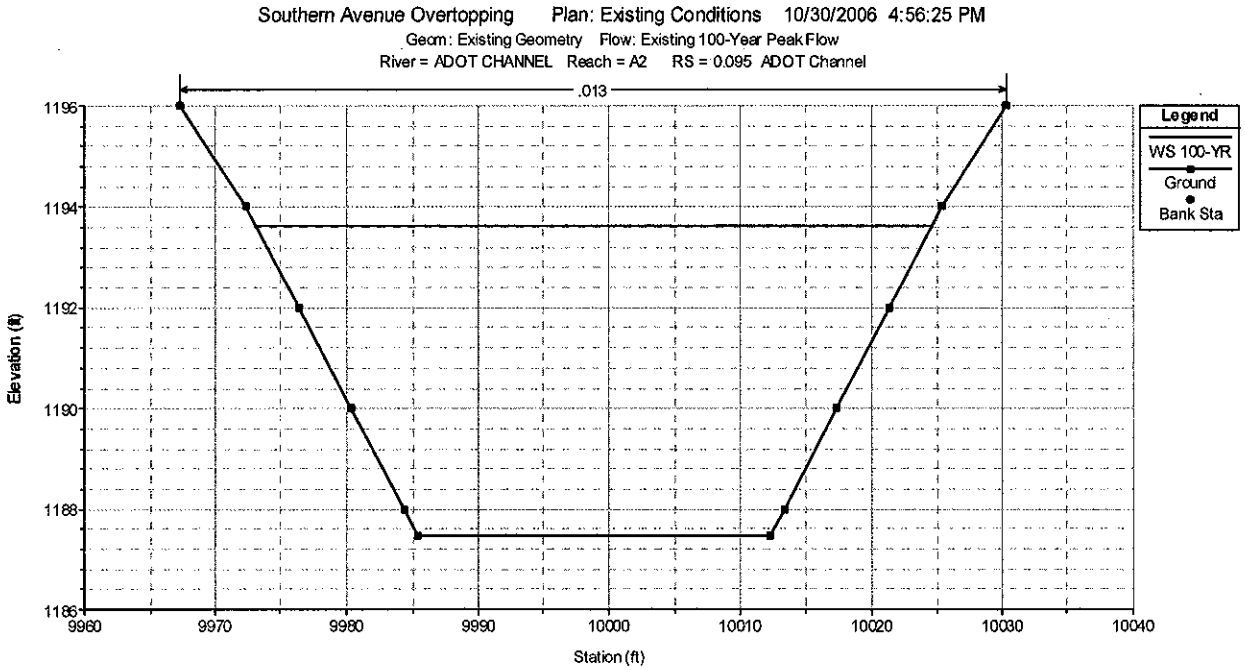

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A1 RS = 0.513 ADOT Channel
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
1198
1197
1196
1195
1194
1193
1192
1191
1190
9970
9980
9990
10000
10010
10020
10030
Station (ft)

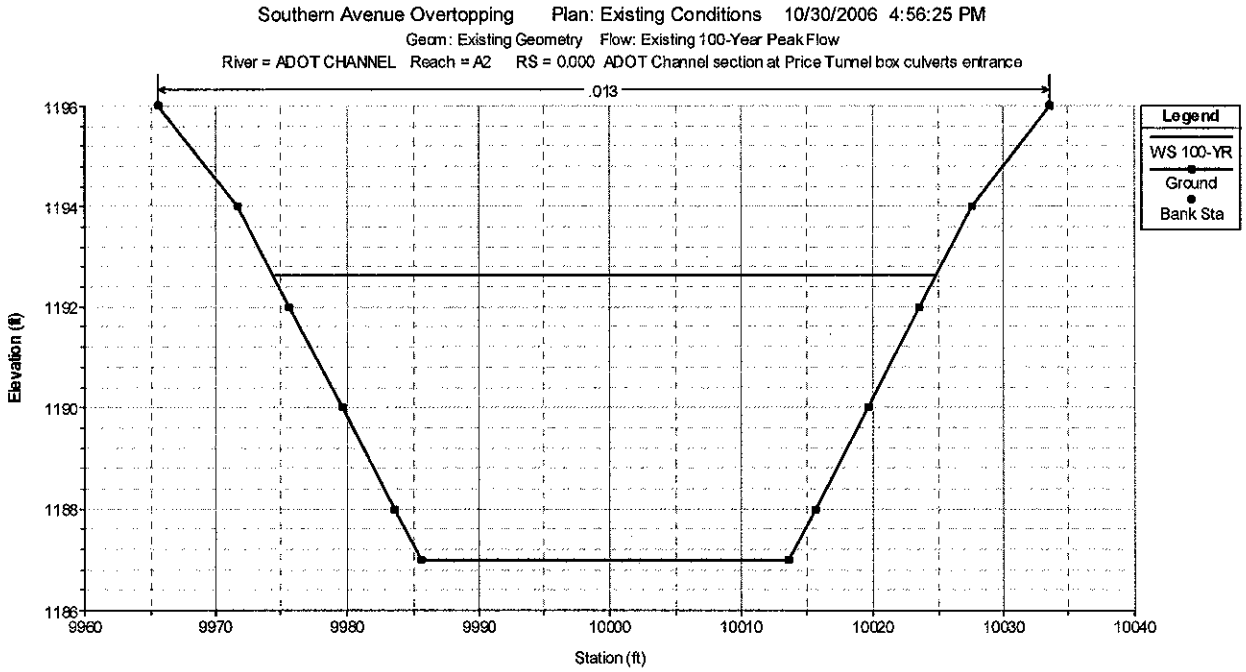

Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A1 RS = 0.418 ADOT Channel
.02
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)
1188
1190
1192
1194
1196
1198
9940
9960
9980
10000
10020
10040


Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A2 RS = 0.399 ADOT Channel confluence with channel along Tempe Canal
.02
.013
.02
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)
1188
1190
1192
1194
1196
1198
1200
1202
9940
9960
9980
10000
10020
10040


Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A2 RS = 0.284 ADOT Channel
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
1196
1194
1192
1190
1188
9970
9980
9990
10000
10010
10020
10030
10040
Station (ft)


Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A2 RS = 0.189 ADOT Channel
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
1196
1194
1192
1190
1188
1186
9960
9970
9980
9990
10000
10010
10020
10030
Station (ft)


Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A2 RS = 0.095 ADOT Channel
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)
1196
1194
1192
1190
1188
1186
9960
9970
9980
9990
10000
10010
10020
10030
10040


Southern Avenue Overtopping Plan: Existing Conditions 10/30/2006 4:56:25 PM
Geom: Existing Geometry Flow: Existing 100-Year Peak Flow
River = ADOT CHANNEL Reach = A2 RS = 0.000 ADOT Channel section at Price Tunnel box culverts entrance
.013
Legend
WS 100-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)
1196
1194
1192
1190
1188
1186
9960
9970
9980
9990
10000
10010
10020
10030
10040