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VOLUME 2.02A

VERRADO
(CATERPILLAR PROPERTY)
PLANNING UNIT DRAINAGE PLAN
FOR PORTIONS OF
PLANNING UNITS IV & V (PHASE 1)
AND UPDATE TO
MASTER DRAINAGE PLAN

WOOD/PATEL

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VOLUME 2.02A

VERRADO (CATERPILLAR PROPERTY) PLANNING UNIT DRAINAGE PLAN FOR PORTIONS OF PLANNING UNITS IV & V (PHASE 1) AND UPDATE TO MASTER DRAINAGE PLAN

Prepared for:

DMB White Tank, LLC
c/o DMB Associates, Inc.
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Submitted to:

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Submitted by:

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Registered Professional Engineer (Civil) CERTIFICATE NO. 22208 JACK K. MOODY Date Signed 8/29/2 ARIZONA, U.S.A.

Peer Reviewer

Registered Professional Engineer (Civil) CERTIFICATE NO. 34569 SHERRICK HUDSON CAMPBELL Date Signed 8-29-2 ARIZONA, U.S.A.

Engineer

Reviewed and Accepted
by the Town Engineer
of the Town of Buckeye

Signature_____

Date_____

August 29, 2002
WP #001081

WOOD/PATEL

MEMO

TO: Amir Motamedi
Flood Control District of Maricopa County

FROM: Jack K. Moody, P.E.

DATE: September 26, 2002

RE: Verrado (formerly known as Whitestone) Master Drainage Plan
WP #011479

SUBJECT: Review Comments for the *Planning Unit Drainage Plan for Portions of Planning Unit IV & V (Phase I) and Update to Master Drainage Plan of Whitestone* dated October 17, 2001

The Flood Control District of Maricopa County (FCDMC) completed a review of the *Planning Unit Drainage Plan for Portions of Planning Unit IV & V (Phase I) and Update to Master Drainage Plan of Whitestone* dated October 17, 2001, on May 23, 2002, as prepared by Wood, Patel & Associates, Inc. This memo serves to address the review comments, which are included below.

1. *Pg 3-4 sec. 1.4: Please update this section to reflect the current ADMS model as developed by URS. The current model is dated March 27, 2002.*

   The updated HEC-1 model dated March 27, 2002 was obtained from the FCDMC and used for the existing condition HEC-1 model and as the basis for the developed condition HEC-1 model.

2. *Pg. 5 sec.1.6: Verify and document that project phasing will not create an interim condition that will create adverse flooding conditions.*

   This report addresses ultimate conditions. Interim conditions will be evaluated as work proceeds.

3. *Pg. 11 sec. 2.3: Clarify reference to EDAW. Please provide a source reference.*

   EDAW is the planning consultant retained by DMB for the Verrado project. This is clarified in the report.

4. *Pg. 12 Table 2.3.a: Document selection of percent impervious values; source; adjustments, justifications.*

   Impervious percentage values were taken directly from Table 4.2.a in the FCDMC Drainage Design Manual, Volume I – Hydrology, and assigned to development areas throughout Verrado, based on approximate densities as indicated on the conceptual land plan.

5. *Pg. 12 Table 2.3.a: Justify selection of 0% impervious for Lake Park classification. Artificial lakes are typically lined to prevent/minimize losses.*

   The entire estimated 100-year, 24-hour flood event runoff volume, which is to drain to the Lake Park, will be contained within the Lake Park. Once development of the Lake Park proceeds, final runoff volumes will be quantified and will account for 100% impervious area to reflect a liner.

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6. *Pg. 14 sec. 3.1: List impacts to the White Tanks #3 Structure.*

   The increase in estimated 100-year runoff volume due to development shall not increase the volume draining to White Tanks Flood Retarding Structure #3. The report is revised to reflect this statement.

7. *Pg. 15 sec. 3.1: Issues not addressed; First flush, Safety of dams, low-flow bleed-off.*

   First flush criteria are currently not a requirement in the Town of Buckeye. Two (2) of the existing storage pits (SR21 and SR29) located on the site, may fall under the jurisdiction of Dam Safety, Arizona Department of Water Resources, based on a review of the onsite storage pits located throughout the site in 1998. However, each pit (SR21 and SR29) shall be re-configured in a manner, which will not yield jurisdictional dam classification, as development proceeds. All onsite retention/detention basins shall be required to drain runoff accumulated from a 100-year, 2-hour storm within 36 hours following the rainfall/runoff event in accordance with Maricopa County requirements.

8. *Pg. 16 Table 3.1: Update with current values.*

   Estimated flow values are updated accordingly.

9. *Pg. 19 sec. 3.3: Where are the percolation test sites located with respect to the basins? Is an average value appropriate for the basins? Discuss and document.*

   We prepared an average valued based on the information that we had. Percolation rates will be documented for individual basins.

10. *Pg. 20 sec. 3.3: What is the regulatory authority for alternate drainage methods for basins?*

    The Town of Buckeye is the regulatory authority for basins on Verrado.

11. *The HEC-1 model used for the analysis does not use appropriate point rainfall values as shown on the JD records. The contributing drainage areas lie within isopluvials higher than the general value determined for the ADMP as shown in the District's hydrology manual.*

    Effort was made to exhibit estimated 100-year peak storm flows comparable to those determined in the FCDMC update to the White Tanks Agua Fria Area Drainage Master Study.

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
- 1.1 General Background 1
- 1.2 Location and Topography 1
- 1.3 Drainage Background 2
- 1.4 Regional Drainage Structure Characteristics 3
- 1.5 FEMA Regulated Flood Zones 4
- 1.6 Purpose of Report 5

2.0 HYDROLOGIC & HYDRAULIC ANALYSIS 6
- 2.1 Hydrologic Method Description 6
- 2.2 Existing Drainage Structures 8
- 2.3 Future Land Use Characteristics 11

3.0 PROPOSED DRAINAGE SYSTEM 14
- 3.1 Drainage Design Considerations 14
- 3.2 Proposed Drainage Alternative Designs 17
- 3.3 Retention Dewatering Alternatives 19
- 3.4 Other Drainage Areas 21
- 3.5 Drainage Design Criteria 22
- 3.6 Phase I Drainage System 23
  - 3.6.1 Tractor Wash Improvements 24
  - 3.6.2 Osborn Wash Improvements 25
  - 3.6.3 Tuthill Dike Wash Improvements 26
  - 3.6.4 Phase I Retention Facilities 26

4.0 CONCLUSIONS 28

5.0 REFERENCES 29

APPENDICES

Appendix A	HEC-1 Existing Conditions Computer Output Files
Appendix B	HEC-1 Post-Development Conditions Computer Output Files
Appendix C	Infiltration & Transmission Losses Calculations
Appendix D	Geomorphological Evaluation of Landforms

PLATES

Plate 1	Vicinity Map
Plate 2	FEMA Flood Insurance Rate Maps
Plate 3	HEC-1 Schematic Map
Plate 4	Site Plan
Plate 5	Existing Conditions Drainage Map
Plate 6	Self Retaining Areas
Plate 7	Offline Storage Basins
Plate 8	Online Retention Basins
Plate 9	Developed Conditions Drainage Plan
Plate 10	Phase I Drainage Improvements

TABLES

Table 2.1	Summary of Existing Conditions 100-Year, 24-Hour Storm Peak Flows
Table 2.2.a	Existing Onsite Storage Basins
Table 2.2.b	Interstate 10 Culvert Summary
Table 2.3.a	Site Plan Land Use Classifications
Table 2.3.b	Verrado Site Planning Areas I-VIII Percent Impervious Calculations
Table 3.1	100-Year, 24-Hour Storm Discharge Summary
Table 3.2	Developed Conditions Detention/Retention Basins
Table 3.5	Drainage Design Criteria
Table 3.6	Phase I Peak Discharge Summary
Table 3.6.4	Phase I Retention Basins

Registered Professional Engineer (Civil)
CERTIFICATE NO.
34569
SHERRICK HUDSON
CAMPBELL
Date Signed 8-29-2
ARIZONA, U.S.A.

jmb
Y:\WP\Reports\Public Works Dept\011479 Update to MDP of Verrado (Phase I).doc

BY _____ **DATE** _____

CITY ENGINEER/PUBLIC WORKS DIRECTOR

1.0 INTRODUCTION

1.1 General Background

DMB White Tank, LLC (DMB) is planning the development of the Verrado Master Planned Community, formerly known as Whitestone, (herein referred to as Property). The Caterpillar Foundation, in conjunction with Caterpillar, Inc. (herein referred to as Caterpillar) owned and utilized this Property as a testing facility for heavy equipment. The Property is comprised of approximately 8,800 acres located on the eastern base of the White Tank Mountains.

The development plan is anticipated to include production and custom home sites, multi-family residential, 18-hole championship golf courses, resorts, parks, schools, commercial, and retail land uses.

DMB has retained Wood, Patel & Associates, Inc. to prepare this Master Drainage Plan for the development of the Property.

1.2 Location and Topography

The Property is located immediately east of and partially within the White Tank Mountains in the Town of Buckeye. It is bounded on the west by the summit of the White Tank Mountains and on the east by Tuthill Road, with a half-section extending to Jackrabbit Road. The Property's northern boundary is comprised of Glendale Avenue and the Northern Avenue alignments. The southern-most boundary is south of Interstate 10 (I-10) on the Roosevelt Street alignment. Adjacent neighbors of the Property include White Tank Mountain Regional Park and the Arizona State Land Department to the north, and the Bureau of Land Management Property to the west. The majority of the land to the east and south is privately owned.

More specifically, the Property is located within Sections 7, 18, 19, 20 (south half), 30 and 31, Township 2 North, Range 2 West; and Sections 3, 10, 11, 12, 13, 23, 24 and 25, Township 2 North, Range 3 West; Section 6, Township 1 North, Range 2 West; Section 1, Township 1 North, Range 3 West. The location of the property is graphically illustrated on Plate 1 – *Vicinity Map*, located in the back of this report.

The topography of the Property varies greatly, with elevations ranging from approximately 1,100 feet above sea level at the southeast corner of the Property to 3,671 feet at the highest peak near the northwest corner. From the low point of the Property, the topography rises gently in a northwesterly direction to the White Tank Mountains. Small hill forms are also present within the Property and slopes vary from approximately one (1) percent to greater than thirty (30) percent.

From approximately 1950 until 1988, the Property was used by Caterpillar for heavy equipment testing, product demonstrations, and product development. Most of the grade disturbance existing onsite occurred as a result of Caterpillar operations, which took place during that period. In addition, Caterpillar constructed many elevated roads, as well as large excavated pits, that divert and store stormwater. Approximately 90% of the Property is in its natural state of vegetation, while the remaining 10% of the site has experienced various degrees of topographic disturbance as a result of the former Caterpillar Proving Ground operations.

1.3 Drainage Background

As mentioned, the Property is located within the foothills of the White Tank Mountains. The majority of the Property drains southeasterly through a series of washes (White Granite Wash, Diversion Dike Wash, Tractor Wash, Osborn Road Wash, Bulldozer Wash, and other unnamed washes) to a man-made drainage corridor along the west side of the Tuthill Road alignment (Tuthill Dike Wash). This drainage corridor leads to the southeast corner of the Property where it crosses under I-10, before reaching the White Tanks Flood Retarding Structure (FRS) No. 4. This structure is located along the north side of the Van Buren Street alignment, between Tuthill Road and Jackrabbit Road, and has a total drainage area of approximately 20 square miles.

A portion of the north end of the Property drains easterly to the White Tanks FRS No. 3, generally located east and north of the Jackrabbit Trail and Bethany Home Road alignments. The drainage is typically conveyed in natural washes; however, the levees and channels within the site often divert the flow from its natural watercourse.

The *White Tanks Agua Fria Area Drainage Master Study* (Ref. 3) was originally prepared by The WLB Group, Inc., dated March 1995, and was approved by the Flood

Control District of Maricopa County (FCDMC), as well a [illegible] gency Management Agency (FEMA). Within this report, the exist [illegible] ulics for the Property were determined for both the regional and lo [illegible]

The FCDMC has updated the *White Tanks Agua Fria Area Drainage Master Study* (Ref. 3) and has prepared a draft available for review and comment by the public. This update, denoted as the *Loop 303 Corridor/White Tanks Areas Drainage Master Plan Update* (Ref. 12), is intended to evaluate development that has taken place since the completion of the original study, as well as incorporate current hydrologic modeling standards, as implemented by the FCDMC.

Major elements of the regional drainage system analyzed that directly impact the development of the Property include White Tanks FRS No. 3, White Tanks FRS No. 4, Tuthill Dike Wash, and Jackrabbit Trail Wash.

The major elements of the local drainage system analyzed that directly impact the development of the Property include existing onsite storage pits that act as retention basins, onsite major washes and diversion structures, and onsite and offsite drainage conveyance systems.

1.4 Regional Drainage Structure Characteristics

White Tanks FRS No. 3 has a watershed area of 20.5 square miles, which consists of mountainous and foothill areas within the White Tank Mountains.

Stormwater runoff is collected in natural washes that flow east and southeasterly out of the mountains, either to the White Tanks FRS No. 3 or to the Beardsley Canal Wash, which diverts the flow south along the Beardsley Canal to White Tanks FRS No. 3. It has been concluded that the White Tanks FRS No. 3 contains the entire 100-year flood volume within the reservoir with the 100-year water surface elevation approximately 11 feet below the spillway crest. The Property contains two areas planned for development within this watershed.

White Tanks FRS No. 4 has a watershed area of 19.8 square miles, which consists of mountainous and foothill areas within the White Tank Mountains. Stormwater runoff

Control District of Maricopa County (FCDMC), as well as by the Federal Emergency Management Agency (FEMA). Within this report, the existing hydrology and hydraulics for the Property were determined for both the regional and local drainage conditions.

The FCDMC has updated the *White Tanks Agua Fria Area Drainage Master Study* (Ref. 3) and has prepared a draft available for review and comment by the public. This update, denoted as the *Loop 303 Corridor/White Tanks Areas Drainage Master Plan Update* (Ref. 12), is intended to evaluate development that has taken place since the completion of the original study, as well as incorporate current hydrologic modeling standards, as implemented by the FCDMC.

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White Tanks FRS No. 4 has a watershed area of 19.8 square miles, which consists of mountainous and foothill areas within the White Tank Mountains. Stormwater runoff

concentrates in desert washes that flow easterly out of the mountains into two diversion channels, Tuthill Dike Wash and Jackrabbit Trail Wash, which collect and convey the runoff to White Tanks FRS No. 4.

Approximately 12 square miles of the Property are located within the White Tanks FRS No. 4 watershed. The roads, large excavated basins, and dikes constructed by Caterpillar have significantly altered the natural drainage patterns on the Property and some provide a considerable amount of flood control.

It has been concluded that the White Tanks FRS No. 4 contains the entire estimated upstream 100-year runoff volume of 767 acre-feet with the 100-year water surface elevation approximately 6.2 feet below the spillway crest. The estimated volume storage capacity at the spillway crest is 1,269 acre-feet. Much of White Tanks FRS No. 4 is below natural grade and, therefore, there is no low flow outlet.

1.5 FEMA Regulated Flood Zones

The Property is located within the Flood Insurance Rate Maps (FIRMs) for Maricopa County, Arizona and Incorporated Areas, Map Numbers: 04013C1570F, 04013C1590G, 04013C2035G, and 04013C2055F, all dated July 19, 2001, as published by FEMA. As shown on these FIRM panels, reproduced and shown on Plates 2.1, 2.2, 2.3, and 2.4, there exist significant major washes and channels, which have been delineated by FEMA as Special Flood Hazard Areas. These include portions or all of the following washes: the North Fork White Granite Wash, White Granite Wash, Diversion Dike Wash (formerly Caterpillar Dike Wash), Tractor Wash, Tuthill Dike Wash, Osborn Road Wash (formerly Caterpillar Wash), Bulldozer Wash, and Jackrabbit Trail Wash.

Based on the FEMA Flood Insurance Rate Maps, there are no alluvial fan zones indicated within the Property. The flood zones identified, specific to this property, are Zone *AE*, Zone *A*, Zone *X* (shaded), and Zone *D*, which are defined by FEMA as:

Zone AE - Special Flood Hazard Areas inundated by 100-year flood, base flood elevations determined.

Zone A - Special Flood Hazard Areas inundated by 100-year flood, no base flood elevations determined.

Zone X (shaded) - Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

Zone D - Areas in which flood hazards are undetermined.

A review of the major drainage corridors entering the Property was conducted by a subconsultant, JE Fuller/Hydrology & Geomorphology, Inc., for the purposes of identifying active alluvial fans. One area of braided or distributary flow was identified at the west Property boundary in Section 25, Township 2 North, Range 3 West. It was concluded that structural solutions would be necessary to protect the downstream areas from this potential breakout flow. Refer to Appendix D – *Geomorphological Evaluation of Landforms* for the results of this investigation.

Onsite distributary flow areas will be identified as part of each Planning Unit Drainage Plan. Structural solutions will be developed as part of the design phase, as necessary, for these distributary flow areas.

1.6 Purpose of Report

The purpose of this report is to study the project site and establish drainage requirements for the proposed development of the Property. Post-development condition peak discharges were estimated at all basin concentration points and Property boundary locations. The hydrologic study results are presented in Sections 2.0 and 3.0.

The proposed drainage facilities for the Property are based on the post-development condition hydrologic analysis. The results of the drainage design are presented in Section 3.0. This report will be updated to include an analysis of the drainage system for each Planning Unit. Each Planning Unit Drainage Plan will address any increase or decrease in runoff from upstream Planning Units or within the current Planning Unit that may occur as development progresses and densities change. Detailed drainage design reports are to be prepared with the design of the drainage elements within the project.

2.0 HYDROLOGIC & HYDRAULIC ANALYSIS

2.1 Hydrologic Method Description

This section documents the engineering procedures and methodologies used to generate the existing and post-development condition hydrologic models for this project. The results of the hydrologic models will be used in the conceptual design of the drainage facilities. Rainfall runoff models were developed for the entire watershed using the U.S. Army Corps of Engineers' HEC-1 computer program, version 4.1, dated June 1998.

In 1993/1994, as part of regional (countywide) flood control planning, the WLB Group, Inc. was contracted by the Flood Control District of Maricopa County to study this watershed. The *White Tanks Agua Fria Area Drainage Master Study* (Ref. 3) was prepared by The WLB Group, Inc. in March 1995. This study included topographic mapping, hydrology and hydraulics for the watershed. An existing condition 100-year frequency, 24-hour duration HEC-1 model was also prepared as part of the White Tanks Agua Fria ADMS. As mentioned, the FCDMC has prepared a draft update to the aforementioned document, denoted the *Loop 303 Corridor/White Tanks Area Drainage Master Plan Update* (Ref. 12), to reflect development that has taken place since the completion of the original study.

This most current draft of the updated HEC-1 hydrologic model was used in estimating the existing peak discharges for both onsite and offsite locations that may be affected by the proposed project development. The existing FCDMC HEC-1 hydrologic model utilized the Depth-Area Reduction factors used within NWS HYDRO-40. The Green & Ampt infiltration equation was used for rainfall losses and S-graphs were used for the unit hydrograph generation. The existing conditions FCDMC HEC-1 hydrologic model was used as the base model for the post-development HEC-1 model. To provide an overview of the hydrologic results, estimated 100-year peak flows at all basin concentration points are summarized in Table 2.1 – *Summary of Existing Conditions 100-Year, 24-Hour Storm Peak Flows*.

Table 2.1

Summary of Existing Conditions 100-Year, 24-Hour Storm Peak Flows

HEC-1 ID	DRAINAGE AREA (sq. miles)	PEAK DISCHARGE (cfs)	HEC-1 ID	DRAINAGE AREA (sq. miles)	PEAK DISCHARGE (cfs)
4	0.30	396	38	0.76	911
5	0.72	927	39	0.77	628
6	0.45	746	40	0.52	586
7	0.31	494	41	0.58	536
9	1.40	1402	41A1	0.02	47
14	1.47	1548	41A2	0.03	64
15	1.26	1272	41A3	0.03	61
16	1.13	1206	41A	0.05	92
18	0.81	1179	41-1	0.15	223
19	0.79	819	41-2	0.10	150
20	1.07	1218	42	1.18	1055
21	0.79	913	43	0.01	23
22	0.57	730	43-1	0.04	73
22A	0.50	733	43-2	0.01	19
23	0.16	310	43-3	0.05	106
24	0.14	193	43-4	0.03	64
25	0.46	560	43-5	0.02	44
26	1.16	1333	43-6	0.02	44
27	1.00	1153	43-7	0.02	46
28	0.86	734	43-8	0.01	23
29	0.22	262	44	0.22	287
30	0.28	338	45	0.38	845
31	0.71	580	45-1	0.08	137
32	1.29	1154	46	0.85	525
33	0.65	811	46-1	0.15	151
34	0.36	457	303A	0.42	486
35	0.39	510	WT#4	0.77	919
36	0.24	301	303	0.91	626
37	0.95	909			

Plate 3 – *HEC-1 Schematic Map* shows the project area drainage map with delineated HEC-1 basins, and concentration points corresponding to the HEC-1 program output and Table 2.1. Hard copies of the HEC-1 output files are provided in Appendix A – *HEC-1 Existing Conditions Computer Output Files* for the existing condition model.

2.2 Existing Drainage Structures

The existing drainage system of the Property consists of several drainage structures, which will require specific attention in the proposed development design. These structures include the existing onsite storage basins; the existing roadway network, which serve to control and divert storm runoff; the existing culvert network, which crosses I-10; and the White Tanks FRS No. 4. Plate 5 – *Existing Conditions Drainage Map* details the existing storage basins within the project boundaries.

There are ten separate excavated borrow pits within the Property that act as stormwater storage basins. These storage basins have capacities that range from 11 acre-feet to 1,388 acre-feet. Some of the storage basins do not have the capacity to contain the entire 100-year runoff volume produced by the contributing watershed, while other storage basins have capacities in excess of the contributing 100-year runoff volume. Table 2.2.a - *Existing Onsite Storage Basins* summarizes the existing onsite storage basin data, as presented in the *Loop 303 Corridor/White Tanks Area Drainage Master Plan Update* (Ref. 12).

Table 2.2.a

Existing Onsite Storage Basins (1)

Storage Basin ID	Basin Invert [ft]	Spillway Crest [ft]	Storage Capacity at Spillway Crest (2) [acre-feet]	Estimated 100-Year Volumes		Estimated 100-Year Peak Flows	
				Inflow Volume (2) [acre-feet]	Outflow Volume [acre-feet]	Inflow [cfs]	Outflow [cfs]
SR16	1174	1210	1388	***81***	0	1206	0
SR20	1443	1469	176	***73***	0	1218	0
SR21	1319	1347	***96***	159	63	2606	973
SR23	1272	1305	645	***76***	0	909	0
SR24	1210	1243	283	***8***	0	193	0
SR25	1204	1213	***13***	101	88	1670	1609
SR27	1203	1213	***11***	189	177	2166	2164
SR29	1164.5	1177.5	55	***11***	0	262	0
SR38	1275	1297.5	***39***	287	248	4305	4259
SR42	1071.5	1095	***70***	626	556	8776	8651

1) Existing storage basin data is based on the *Loop 303 Corridor/White Tanks Area Drainage Master Plan Update* HEC-1 model, L303M3K.DAT.

2) The smaller of the storage capacity at Spillway Crest or Inflow Volume is the controlling 100-year volume held in that basin. That number is indicated in bold italics. This volume totals 478 acre-feet held onsite in the existing 100-year event.

There are numerous roadway embankments and channels constructed by Caterpillar that have altered the natural condition drainage patterns. It is important to note that, based on field observations, the existing elevated roadways along Tuthill Dike Wash are not engineered and may experience potential damage during flow events. As a result, it is anticipated that in post-development conditions, these embankments will be upgraded to engineered drainage structures, thus eliminating any possible damage to these structures during post-development flow events.

As stormwater runoff leaves the Property, it is directed south toward I-10. Numerous culverts, including concrete box culverts and pipe culverts, have been constructed to convey under I-10, per Arizona Department of Transportation (ADOT) freeway design plans. Many of these culverts have been designed to convey the 50-year rainfall event, and therefore numerous flow breakouts occur during the 100-year rainfall event. Summary Table 2.2.b is a listing of the I-10 culverts, their locations according to ADOT highway plans (Ref. 5), and their existing 100-year discharge values.

Table 2.2.b

Interstate 10 Culvert Summary

HEC-1 BASIN ID	CULVERT SIZE	LOCATION	EXISTING Q100 (cfs)
1D303	1-30" CMP	6255+85	23
2D303	1-30" CMP	6261+65	24
3D303	1-30" CMP	6267+60	23
4D303	1-36" CMP	6273+88	24
5D303	2-36" CMPs	6288+25	45
6D303	2-42" CMPs	6305+22	38
7D303	2-36" CMPs	6315+00	46
1D303A	5-48" CMPs	6319+32 - 6324+32	262
2D303A	1-36" CMP	6326+40	10
3D303A	3-36" CMPs	6330+50 - 6340+10	22
1DWT#4	2-36" CMPs	6343+25 - 6345+65	21
2DWT#4	1-36" CMP	6349+45	19
3DWT#4	1-36" CMP	6354+00	5
4DWT#4	1-36" CMP	6357+00	20
5DWT#4	1-36" CMP	6360+80	12
D43	4-10'x8' RCBCs	6366+85	4932
7DWT#4	1-12'x12' RCBC	6368+00 - 6375+20	477
	2-42" CMPs		--
	3-36" CMPs		--
8DWT#4	9-36" CMPs	6379+84 - 6390+50	370
9DWT#4	5-36" CMPs	6395+75 - 6400+60	217
SR46	5-10'x4' RCBCs	6419+30	1651

The majority of the discharge is conveyed to the White Tanks FRS No. 4 after crossing under I-10. As previously discussed, the White Tanks FRS No. 4 is believed to contain the entire 100-year flood runoff volume within the reservoir.

2.3 Future Land Use Characteristics

The post-development condition land use information was prepared by EDAW, the planning consultant for the property retained by DMB. The hydrologic significance of each of the proposed seven (7) planning units was determined. Each drainage basin was then analyzed with respect to hydrologic significance of the proposed planning unit. A tabulation of the land use classification from the site plan and their associated impervious area percentage is included in Table 2.3.a – *Site Plan Land Use Classifications*. The results have been detailed on Table 2.3.b – *Sub-Basin Impervious Area Percentages*, located on the following pages. The site plan with land use classifications is shown on Plate 4 – *Site Plan*.

The increase in the impervious area on the Property resulted in an increase in both the peak flow and runoff volume. Numerous options were evaluated to mitigate the effects of the proposed development. The most feasible option has been presented in Section 3.0.

This option has been incorporated into the post-development condition hydrologic model, with hard copies of the HEC-1 output files provided in Appendix B – *HEC-1 Post-Development Conditions Computer Output Files*.

Table 2.3.a

Site Plan Land Use Classifications

SITE PLAN LAND USE CLASSIFICATION	DESCRIPTION	FCDMC LAND USE CATEGORY	IMPERVIOUS AREA PERCENTAGE [%]
RLE	Residential Large Estate	VLDR	5
RE	Residential Estate	LDR	15
RVL	Residential Very Low		
RL	Residential Low	MDR	30
RLM	Residential Low/Medium		
HS	High School		
ES/MS	Elementary/Middle School		
ES	Elementary School		
RSRT	Resort		
RM	Residential Medium	MFR	45
RH	Residential High		
RVH	Residential Very High		
MU/RVH	Mixed Use/Res. Very High		
MU/Ofc	Mixed Use/Office	COMM	80
MU/Ret	Mixed Use/Retail		
BP	Business Park		
RET	Retail		
OFC	Office		
DC	District Club		
CH	Community Church		
NCH	Neighborhood Church		
CC	Child Care		
LIB	Library		
F/P	Fire/Police		
HFC	Home Finding Center		
CBH	Clubhouse		
DP	District Park	OPEN SPACE	0
NP	Neighborhood Park		
LP	Linear Park		
COMM	District Commons		
LK-P	Lake Park		
SP	Sports Park		
GC	Golf Course		
OS	Open Space		
AOS	Arroyo Open Space		
MTN(1)	Special Planning Area(1)	NA	VARIES

1) Mountain regions are not developed and, therefore, existing percent impervious area for these regions is used.

2) Impervious area percentage for Lake Park is 100% to reflect lining of artificial lake to minimize loss.

3) Impervious area percentages are determined based on land use information as prepared by EDAW as compared with criteria set forth in the *Flood Control District of Maricopa County, Arizona, Volume I – Hydrology* (Ref. 1).

TABLE 2.3.b
WHITESTONE SITE PLANNING AREAS I-VII
PERCENT IMPERVIOUS CALCULATIONS

Date: 02 Oct 2001

WEIGHTED IMPERVIOUS PERCENTAGE

SUB-BASIN	LAND USE AREA COMPONENTS[1]								TOTAL AREA [ac]	DEVELOPED % IMPERVIOUS	EXISTING % IMPERVIOUS	WEIGHTED TOTAL % IMPERVIOUS
	VLDR [ac]	LDR [ac]	MDR [ac]	MFR [ac]	IND [ac]	COMM [ac]	OPEN [ac]	MTN [ac]				
4	0	0	115	0	0	0	0	77	192.0	18.0	9	27.0
16	24.0	167.8	103.9	0.0	0.0	6.2	19.2	401.9	723.0	8.6	11.0	19.6
18	23.0	0.0	40.0	0.0	0.0	0.0	0.0	440.0	503.0	2.6	10.0	12.6
19	131.5	0.0	0.0	0.0	0.0	0.0	23.8	337.8	493.1	1.3	9.0	10.3
20	37.0	0.0	0.2	0.0	0.0	0.0	7.7	639.9	684.8	0.3	8.0	8.3
21	86.7	46.7	7.5	0.0	0.0	0.0	44.3	119.1	304.3	4.5	7.0	11.5
22	70.7	2.1	0.0	0.0	0.0	0.0	15.6	239.6	328.0	1.2	8.0	9.2
22A	9.5	0.0	102.0	0.0	0.0	4.9	24.8	0.0	141.2	24.8	6.0	30.8
23	0.0	0.0	28.3	0.0	0.0	2.1	19.0	42.7	92.1	11.0	26.0	37.0
24	0.0	3.5	33.6	11.9	0.0	10.7	1.6	0.0	61.3	40.0	0.0	40.0
25	0.0	25.1	83.1	45.2	0.0	37.5	36.8	0.0	227.7	34.7	0.0	34.7
26	21.9	116.2	88.5	0.0	0.0	0.0	84.8	354.2	665.6	6.8	3.0	9.8
26n	0.0	136.4	13.5	0.0	0.0	10.8	49.7	307.7	518.0	6.4	3.0	9.4
26s	29.9	32.8	19.5	0.0	0.0	0.0	13.3	123.5	219.0	5.6	4.0	9.6
27	0.0	7.1	204.4	54.7	0.0	63.8	94.9	0.7	425.6	32.4	1.0	33.4
29	0.0	0.0	109.4	0.0	0.0	12.1	1.4	0.0	122.9	34.6	0.0	34.6
30	0.0	0.0	147.8	0.0	0.0	1.4	4.6	0.0	153.8	29.6	0.0	29.6
32	35.4	5.0	0.0	0.0	0.0	0.0	26.1	759.1	825.6	0.3	30.0	30.3
35	35.9	0.0	0.0	0.0	0.0	0.0	13.3	200.4	249.6	0.7	10.0	10.7
36	0.0	43.9	25.7	0.0	0.0	0.0	35.4	46.5	151.5	9.4	1.0	10.4
37	0.0	58.6	5.0	0.0	0.0	0.0	8.3	536.1	608.0	1.7	9.0	10.7
38	0.0	111.3	53.2	1.0	0.0	0.0	141.6	41.3	348.4	9.5	4.0	13.5
39	0.0	23.1	309.4	8.7	0.0	1.7	88.3	0.0	431.2	23.6	0.0	23.6
40	0.0	40.4	51.9	0.0	0.0	0.0	20.7	213.5	326.5	6.6	7.0	13.6
42	0.0	2.0	327.1	96.5	0.0	26.9	62.4	1.0	515.9	31.7	0.0	31.7

1. Land use categories based on FCDMC Drainage Design Manual.

3.0 PROPOSED DRAINAGE SYSTEM

3.1 Drainage Design Considerations

The proposed drainage design has been prepared to focus on three primary goals:

1. Where possible, the existing drainage patterns and corridors will be maintained in their natural state;

2. All post-development 100-year peak discharges leaving the Property will be maintained at or below their pre-development values;

3. The increase in estimated 100-year runoff volume due to development will be accommodated within the proposed onsite design, thereby not increasing the runoff volume draining to White Tanks Flood Retarding Structure No. 3 or White Tanks Flood Retarding Structure No. 4.

These pre-development/post-development concepts were discussed with the Town of Buckeye and FCDMC prior to their use. A summary of the locations where 100-year discharge values must be maintained in post-development conditions can be found in Table 3.1 on the following page. It is important to note that one of the primary constraints within the design alternatives is the I-10 culvert system (4 - 10' x 8' RCBCs) located at the intersection of Tuthill Dike Wash and I-10. In the existing condition, the majority of the 100-year discharge is conveyed under I-10 at this location; however, a significant split flow occurs to the east along the north side of I-10. This split flow is conveyed under I-10 as it continues east through a series of culverts. The flows reaching these culverts cannot be increased due to development of the Property.

Stormwater retention to accommodate the increase in 100-year runoff volume due to development will be accomplished by implementing a combination of methods, which would include, but are not necessarily limited to, the following:

1. Utilizing some of the existing onsite storage basins in potentially modified grading configurations.

2. Allowing parks, golf courses, schools, and commercial sites to retain onsite runoff for a 100-year, 2-hour flood event with adequate freeboard to contain the 100-year, 24-hour flood event. Plate 6 – *Self Retaining Areas* illustrates these areas.

3. Incorporation of offline basins along Tuthill Dike Wash, Tractor Wash, Osborn Wash, and Bulldozer Wash, intended to receive peak flows from rainfall/runoff events while maintaining ordinary flows within the washes. Plate 7 – *Offline Storage Basins* illustrates the location of these basins.

4. Storage basins within the golf courses with storage capacity in excess of self-retention, intended to receive flows from adjacent upstream tributary area. Plate 8 – *Online Retention Basin Tributaries* illustrates the location of these basins. While runoff volumes are not anticipated to change, tributaries delineated for each basin are subject to change, and may be adjusted as improvement plans are developed for the site.

5. Surcharge of a proposed lake within the storage pit 21/23 tributary, in order to retain 100-year, 24-hour flows from entire upstream tributary area.

Table 3.1

100-Year, 24-Hour Storm Discharge Summary

HEC-1 BASIN ID	CULVERT SIZE	I-10 STATION LOCATION	EXISTING Q100 (cfs)	DEVELOPED Q100 (cfs)
4	--	--	396	427[1]
SR 16	--	--	0	0
CP30	--	--	923	1,047[1]
1D303	1-30" CMP	6255+85	23	23
2D303	1-30" CMP	6261+65	24	24
3D303	1-30" CMP	6267+60	23	23
4D303	1-36" CMP	6273+88	24	24
5D303	2-36" CMPs	6288+25	45	45
6D303	2-42" CMPs	6305+22	38	38
7D303	2-36" CMPs	6315+00	46	46
1D303A	5-48" CMPs	6319+32 - 6324+32	262	262
2D303A	1-36" CMP	6326+40	10	10
3D303A	3-36" CMPs	6330+50 - 6340+10	22	22
1DWT#4	2-36" CMPs	6343+25 - 6345+65	21	21
2DWT#4	1-36" CMP	6349+45	19	19
3DWT#4	1-36" CMP	6354+00	5	5
4DWT#4	1-36" CMP	6357+00	20	20
5DWT#4	1-36" CMP	6360+80	12	12
D43	4-10'x8' RCBCs	6366+85	4932	3,926
DI45-1			3299	1,142
7DWT#4	1-12'x12' RCBC	6368+00 - 6375+20	477	292
	2-42" CMPs		--	
	3-36" CMPs		--	
8DWT#4	9-36" CMPs	6379+84 - 6390+50	370	294
9DWT#4	5-36" CMPs	6395+75 - 6400+60	217	82
SR46	5-10'x4' RCBCs	6419+30	1651	1,751[1]
CP303A	--	--	479	479
CP303	--	–	621	621

1) The increase in these peak discharges are to be mitigated by onsite retention/detention.

3.2 Proposed Drainage Alternative Designs

As mentioned before, numerous options were evaluated to mitigate the effects of the proposed development. The most feasible option is presented in this report.

Please note that, within the design option, the basins are located with the possibility that changes in location may occur as more detailed land planning information becomes available.

The primary purpose of the design alternative is to provide an alternative that has no increase in the peak discharge rate or runoff volume to the White Tanks FRS No. 3 and White Tanks FRS No. 4. As shown on Plate 9 – *Developed Condition Drainage Plan*, the three primary drainage design considerations were met within this proposed design.

The design consists of several onsite retention basins. Five of the proposed retention basins were designed as off-line basins adjacent to the primary drainage corridors on the property and are modeled in the post development condition HEC-1 model. The stormwater volume retention effects in the remaining basins throughout the balance of the site were incorporated into the HEC-1 model by reducing the appropriate amount of upstream tributary area unique to each proposed basin. All basins were modeled assuming the increase in discharge due to development would be retained onsite, and **not** drained to the White Tanks FRS No. 4 during the dewatering of the retention basins.

A summary of the requirements for each of the onsite retention basins has been provided in Table 3.2. These requirements satisfy the overall objective of not increasing the existing runoff volume reaching the White Tanks FRS No. 4, and maintaining the existing peak discharge rates.

Table 3.2

Developed Conditions Detention/Retention Basins

BASIN ID	BASIN TYPE	DESCRIPTION	100-YEAR RUNOFF VOLUME [acre feet]	100-YEAR PEAK INFLOW [cfs]	100-YEAR PEAK BYPASS [cfs]
SR16	ONLINE	Section 7 online basin	96	1,252	N/A
SR20	ONLINE	Existing storage basin along west property line	74	1,220	N/A
SR21	ONLINE	Existing storage basin to be transformed into sediment trap	76	2,452	859
SR23	ONLINE	Existing storage basin to be transformed into lake park	94	797	N/A
GOB2	OFFLINE	Proposed offline basin in Phase II Golf on Tuthill Dike Wash	30	681	206
GOB3	OFFLINE	Proposed offline basin in Phase I Golf on Osborn Wash	42	1,148	3,006
GOB4	OFFLINE	Proposed offline basin in Phase II Golf on Tractor Wash	20	509	494
GOB5	OFFLINE	Proposed offline basin on Bulldozer Wash	17	470	163
SPOB1	OFFLINE	Proposed offline basin in planned sports complex area	31	691	727
SR42	ONLINE	Existing online basin on Tuthill Dike Wash at southeast corner of property	31	5,599	5,500
SR42-2	ONLINE	Proposed online basin on Tuthill Dike Wash at southeast corner of property	18	5,500	5,458
PH 1 GOLF DR. RANGE	ONLINE	Proposed Phase I Golf Driving Range Basin	22	See note 1	N/A
PH 1 GOLF HOLE 5	ONLINE	Proposed Phase I Golf Online Basin	8	See note 1	N/A
PH 1 GOLF HOLE 9	ONLINE	Proposed Phase I Golf Online Basin	3	See note 1	N/A
PH 1 GOLF HOLE 11	ONLINE	Proposed Phase I Golf Online Basin	5	See note 1	N/A
PH 1 GOLF HOLE 12	ONLINE	Proposed Phase I Golf Online Basin	8	See note 1	N/A
PH 1 GOLF HOLE 15	ONLINE	Proposed Phase I Golf Online Basin	4	See note 1	N/A
PH 1 GOLF HOLE 16	ONLINE	Proposed Phase I Golf Online Basin	11	See Note 1	N/A
PH 6 GOLF	ONLINE	Proposed Phase 6 Golf Online Basin	14	See Note 1	N/A
SEC 20 BASIN	ONLINE	Proposed Section 20 Online Basin	6	See Note 1	N/A
ES/MS BASIN	ONLINE	Proposed Phase I School Site Basin	12	See Note 1	N/A
			Total: 622 ac/ft		

1) Phase I Golf retention basins were analyzed in terms of runoff volume only. Flow rates were not estimated for these basins.

The results of the post-development condition HEC-1 model significantly reduce the 6,896 cfs existing condition 100-year discharge to White Tanks FRS No. 4 (Table 3.1-100-year, 24-hour Storm Discharge Summary), to 5,947 cfs for post-development

conditions. In addition, post-development conditions reduce the flow split to the east at the I-10 culvert system (4-10' x 8' RCBCs) intersection location with Tuthill Dike Wash and thus significantly reduce the flooding potential of the land along the north side of the Interstate, east of the Property.

3.3 Retention Dewatering Alternatives

One important consideration in the design of the retention basins is the ability to dewater the basins within a reasonable period of time. The typical time required to drain the 100-year, 2-hour runoff volumes from retention basins in Maricopa County is 36 hours, following the rainfall event. However, the excavated pits that currently exist on the site do not drain the 100-year, 2-hour rainfall/runoff event in 36 hours.

If the basins are allowed to drain into the existing channels, it may result in additional runoff volume reaching the White Tanks FRS No. 4. Since there is currently no low-flow outfall from White Tanks FRS No. 4, this could create an overburden to the structure. The White Tanks FRS No.4 does not drain within 36 hours following a storm. This site has an increased retention burden due to the existing onsite pits and therefore is not being allowed to increase the volume contributing to White Tanks FRS No. 4. To meet the Maricopa County requirements, onsite retention basins will be required to drain the runoff accumulated from a 100-year, 2-hour storm within 36 hours following the rainfall event.

Percolation tests were performed to determine the infiltration rates that could be expected from the proposed retention basins. Western Technologies, Inc. (WT) performed five shallow pit percolation tests. The results of the tests are presented in Appendix C – *Infiltration & Transmission Losses Calculations*. Percolation rates were determined to be approximately 0.16 (cubic feet/hour)/square foot. This equates to the ability to drain a basin 5.8 feet deep within a 36 hour time period. We applied a 50% reduction factor to this rate to account for anticipated decrease in effectiveness over time. Therefore, the maximum 100-year, 2-hour ponding depth has been set at 2.9 feet in order to drain within a 36-hour time period. Where the 100-year, 2-hour ponding depth exceeds 2.9 feet, another method of dewatering/treatment will need to be implemented.

One such means of dewatering the basins is to use the natural wash bed transmission losses. As was revealed during field investigations, the existing washes have relatively wide channel beds with sandy bottoms, which cover long distances before reaching the White Tanks FRS No. 4. These washes exhibit a high potential for infiltration to occur into the channel beds when draining the retention basins.

Wash bed transmission losses were analyzed for each proposed basin and their respective downstream wash characteristics and reach lengths. As shown within *Appendix C*, the results of the analysis indicate that, over a 36-hour period, a percentage of the retention volume can be dewatered by utilizing the wash bed transmission losses. The calculation of transmission losses is done only after the initial losses are satisfied and the seepage has reached a constant rate. Thus, in conjunction with the retention basin infiltration losses, dewatering the basins can occur with a small bleed off pipe at a rate equal to the transmission losses over the length of the downstream drainage reach, with no additional runoff volume expected to enter White Tanks FRS No. 4. As a result, ponding depths can be increased from the maximum ponding depth of 2.9 feet

If percolation rates diminish over time and the 100-year, 2-hour runoff fails to drain in 36 hours, the implementation of other means of dewatering may be necessary. These options may include: French drains, leach fields, rock filled trenches, and/or drywells. French drains may be utilized in order to obtain an increased infiltration rate within the proposed retention basins. In order to implement such a technique, trenches would need to be excavated within the proposed retention basins, to a depth where a gravel layer exists. The excavated trenches will then be backfilled with rock over a layer of filter fabric. This technique increases the rate of infiltration by directly recharging the water into a more porous material.

In addition, other options can be evaluated to allow standing water for periods in excess of 36 hours. These options may include, among others, the creation of a recreational lake that can be surcharged for stormwater storage, or the use of chemical treatments to control mosquito larvae on an interim basis.

3.4 Other Drainage Areas

As shown on Plate 3 - *HEC-1 Schematic Map*, there are areas of the Property that do not drain to the White Tanks FRS No. 4. These areas include drainage basins No. 4, 7, 14, 15, & 16 and approximately the west half of Sections 3 & 10, Township 2 North, Range 3 West. In addition, the majority of the rainfall runoff from Section 1, Township 1 North, Range 3 West will not contribute to the White Tanks FRS No.4

Four of the five drainage basins (basins No. 4, 7, 14, & 15) are located in the highlands of the White Tanks FRS No. 3 drainage tributary. When developed, drainage basin No. 4 will require a small detention/retention basin to maintain the existing 100-year discharge of 339 cfs and 100-year runoff volume leaving the Property. Basin No. 16 will require a retention basin to maintain the existing 100-year condition of no discharge (which was analyzed within the proposed drainage design alternatives).

Finally, approximately the west half of Sections 3 & 10, Township 2 North, Range 3 West, drains to the west. This area consists of steep mountain slopes.

We have assumed that basins No. 7, 14, & 15 and the west half of Sections 3 & 10, Township 2 North, Range 3 West, would maintain the same hydrologic conditions as currently exist. In the event that these assumptions are not correct, development of these areas will require small local detention/retention basins to maintain the existing 100-year discharge and runoff volume leaving the Property.

The development that is to occur in Section 1, Township 1 North, Range 3 West, will be required to provide adequate retention or detention to insure that the post-development 100-year peak discharge is not greater than the existing condition. Thus, no increase in the existing 100-year peak discharge will occur in those areas due to the proposed development of the Property.

The development that is to occur in the south half of Section 23 and the south half of Section 25, Township 2 North, Range 3 West, will be required to provide adequate retention or detention to insure that the post-development 100-year peak discharge is not greater than the existing condition. Thus, no increase in the existing 100-year peak discharge will occur in those areas due to the proposed development of the Property.

3.5 Drainage Design Criteria

The design criteria used in this Master Drainage Plan for the Property development is based on the Town of Buckeye's design standards, as verified during meetings with the Town Engineer. Table 3.5 summarizes the major design criteria utilized.

Table 3.5

Drainage Design Criteria

DRAINAGE FEATURE	PEAK FREQUENCIES		
	10-YEAR	50-YEAR	100-YEAR
Local Streets & Minor Collectors	Runoff contained within street curbs. Dip crossings are allowed if located upstream of basins.	N/A	Runoff to be confined to roadway right-of-way or to landscape tracts. Flow to be a maximum of 100 cfs, 10 fps and 12-inch depth above the low point in street. Runoff to be contained 12 inches below the finished floor of adjacent buildings.
Major Collectors and all Arterials	One 12-foot dry lane must be maintained in each direction.	N/A	Same as Local Streets, except no dip crossings allowed.
Storm Drain Systems	Pipes or roadway channels are added if the 10-year runoff exceeds street capacity.	N/A	Catch basins, scuppers and curb openings are to be provided to remove water so as not to exceed the 12-inch maximum depth.
Culvert for Principal Arterials	N/A	N/A	Runoff to be conveyed by culvert under road with no flow over the road.
Culvert for Major Collectors & Minor Arterials	N/A	Runoff to be conveyed by culvert under road with no flow over the road.	Runoff to be conveyed by culvert and by flow over the road with maximum 6-inch flow depth.
Culvert for Local Streets & Minor Collectors	Runoff to be conveyed by culvert with no flow over the road.	25-year storm: runoff to be conveyed by culvert and by flow over the road with a maximum 6-inch flow depth.	Maximum flow depth over road is 12 inches.

The retention basins will generally be designed with side slopes no steeper than four to one (4:1). Steeper slopes will be allowed when justified by adequate engineering analysis and documentation, subject to approval by the Town Engineer. In multiple use areas, such at retention within community parks, the side slopes will vary depending on depth and location. The side slopes in the golf courses will vary based on the golf course architect's design.

3.6 Phase I Drainage System

Phase I of the Verrado project lies within Sections 24, 25, 19, and 30. The location of Phase I relative to the boundaries of the Verrado project is illustrated on Plate 4 – *Site Plan.*

A mass-grading plan has been prepared for the Phase I portion of the site. The general drainage concept for this plan is illustrated on Plate 10 – *Phase I Drainage Improvements.* As the Phase I areas are developed, detailed hydrologic and hydraulic analyses are to be prepared to insure that stormwater runoff can be safely conveyed to the appropriate outfall point.

The major drainage system for the Phase I portion of the property, consists of three primary drainage corridors which are generally on the outside edges of Phase I. These main drainage corridors are Tractor Wash, Osborn Wash, and Tuthill Dike Wash.

Each of the three primary drainage corridors will be improved with the development of Phase I. These improvements will serve to achieve some or all of the following goals:

1. Reclamation of floodway fringe along drainage corridors to increase the amount of developable area.
2. Reduce the potential for stream bank erosion and migration, in order to enhance public safety.
3. Provide a sufficient buffer between proposed development and adjacent stream bank to account for erosion and migration potential in order to enhance public safety.
4. Enhancement of flood control/conveyance features.
5. Creation of riparian habitat in association with the corridor improvements in order to enhance wildlife use and function.

Such improvements will consist of rechannelization of Tuthill Dike Wash adjacent to Phase I, the implementation of bank protection along each of the three corridors, and the use of lateral migration setbacks within portions of Tractor Wash and Osborn Wash.

In addition to the drainage corridor improvements, several retention basins will be constructed with the development of Phase I. These basins are to be installed with the development of Phase I to ensure that the interim 100-year flows do not increase over the existing.

Phase I is located within drainage areas 27, 38, 39, 40, and 42. Table 3.6 – *Phase I Peak Discharge Summary* lists existing and post-development peak discharge values for the Phase I drainage areas.

Table 3.6

Phase I Peak Discharge Summary

HEC-1 ID	PEAK DISCHARGE	
	EXISTING [cfs]	DEVELOPED [cfs]
I1CP27	2166	1,418
SR27	2164	N/A
CP27	3741	1,425
CP36	3736	3,836
CP38	4305	4,154
SR38	4259	N/A
CP39	7708	4,743

Plate 10 – *Phase I Drainage Improvements* illustrates the location of the drainage areas relative to the limits of Phase I.

3.6.1 Tractor Wash Improvements

The Tractor Wash drainage corridor forms the north boundary of the Phase I portion of the project. The low flow to the wash has been cutoff by three roadway embankments near the west section line of Section 19. Flow from the watershed upstream of the roads pond behind the embankments and overflow into a south branch of Tractor Wash. Therefore, the south branch is the only branch that has a FEMA designated floodplain even though it is significantly smaller than the main branch.

In the proposed condition of Phase I, the embankments will be removed to restore the natural flow to the main branch at the wash. This wash will then be preserved as an open space corridor. The upper portion of this wash will mostly

remain in its natural condition with native vegetation; however, the lower portion has previously been disturbed. The natural portion of Tractor Wash outfalls into a large borrow pit and then to a highly disturbed channelized area. Since this borrow pit and channelized area are not engineered, they will be replaced with an engineered channel section. The proposed channel is to consist of buried bank protection and an earthen bottom. Grade control cutoff walls are to be used to limit degradation. Detailed hydraulic and scour analyses will be necessary to aid in the design of Tractor Wash and the adjacent development.

The channelization of the downstream end of Tractor Wash will remove the borrow pit from the floodplain. In addition, restoring the natural flow to the main branch will also remove the floodplain from the south branch. With this design, coordination with FEMA will be necessary to get a Letter of Map Revision to revise the floodplain after improvements are completed.

3.6.2 Osborn Wash Improvements

Osborn Wash passes west to east through the southern portion of the Phase I improvements. This wash is wide and shallow with numerous low flow braids throughout the main corridor. The majority of the wash is in its natural condition, however, some grading disturbances have occurred near the boundary between Sections 25 and 30. In this area, large borrow pits and small levees have significantly altered the natural floodplain. FEMA has designated a floodplain and floodway that reflect the current condition.

The development plan is to fill the floodplain to the floodway limit and reclaim the land for development. Bank protection may be necessary to protect the fill material from erosion. In areas where the floodplain and floodway coincide, development can occur up to that limit. However, erosion control measures such as bank protection or erosion hazard setbacks may be necessary to limit lateral migration of the wash. The floodway is to remain mostly in its natural condition. A detailed hydraulic and sediment transport analysis will be necessary to aid in the design of Osborn Wash and the adjacent development.

The design concept for Osborn Wash is to reclaim some floodplain for development. Therefore, coordination with FEMA will be necessary to get a Letter of Map Revision to revise the floodplain.

3.6.3 Tuthill Dike Wash Improvements

Tuthill Dike Wash forms the eastern boundary of Phase I. This wash is the outfall to Tractor Wash and Osborn Wash. It conveys the majority of the flow from the site south to leave the property under I-10. The elevated road forms a dike that forces the stormwater to the south and forms Tuthill Dike Wash. Since this dike is not engineered, it will need to be replaced with a below grade channel. The proposed channel is to consist of buried bank protection and an earthen bottom. Grade control cutoff walls are to be used to limit degradation. The channel is to be highly vegetated to reduce velocity and scour potential. Detailed hydraulics and scour analyses will be necessary to aid in the design of this channel. Coordination with FEMA will be necessary to obtain a Letter of Map Revision to revise the floodplain.

3.6.4 Phase I Retention Facilities

Drainage Facilities serving to achieve the drainage design goals within Phase I, will consist of retention basins distributed throughout the Phase 1 18-hole golf course. Each of the golf hole basins will be strategically located in order to accept upstream runoff from offsite tributary areas and/or onsite developed tributary area. The Phase I parks and the elementary/middle school site will also be designed to retain all 100-year, 2-hour onsite runoff with adequate freeboard to contain the 100-year, 24-hour runoff.

Table 3.6.4 – *Phase I Retention Basins* lists each of the proposed basins and its respective 100-year, 24-hour runoff volume. Plate 10 – *Phase I Drainage Improvements* illustrates the location of the proposed storage basins.

Table 3.6.4

Phase I Retention Basins

Storage Basin Location	100-Year, 24-Hour Runoff Volume [acre-feet]
HOLE # 2	42
HOLE # 5	8
HOLE # 9	3
HOLE # 11	5
HOLE # 12	8
HOLE # 15	4
HOLE # 16	11
DRIVING RANGE	22
SCHOOL	12

4.0 CONCLUSIONS

Based on the results of the study, it can be concluded that:

1. This is a master plan document that is intended to set drainage constraints for the entire project. All site specific improvements for various phases are to use this master drainage plan as a guideline. More detailed hydrology, hydraulic, scour, and floodplain analyses will be required during the phase improvements.

2. The drainage infrastructure is to be designed in accordance with the requirements defined within this report. For situations not addressed within this report, the Town of Buckeye criterion will be used for drainage facility design.

3. Retention will be provided to maintain the 100-year stormwater flows leaving the Property at or below existing peak flow rates.

4. Additional storage volume will be provided to insure that the post-development peak runoff volumes are less than or equal to the pre-development peak runoff volumes that flow to White Tanks FRS No. 4.

5. Where possible, the existing 100-year water surface elevations and 100-year floodplain limits will not be increased due to development. Where modifications to these floodplains are necessary, processing will be required through FEMA in the form of Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) submittals.

6. The design of hydraulic structures is to be based on generally accepted engineering practices and in accordance with the Town of Buckeye requirements. A Drainage Design Report is to be produced to document the design of the hydraulic structures.

5.0 REFERENCES

1. Flood Control District of Maricopa County, *Drainage Design Manual for Maricopa County, Arizona; Volume I-Hydrology*, January 1, 1995.
2. Flood Control District of Maricopa County, *Drainage Design Manual for Maricopa County, Arizona; Volume II- Hydraulics*, January 28, 1996.
3. The WLB Group, Inc., *The White Tank Agua Fria Area Drainage Master Study, Part B*, March 1995.
4. Wood, Patel & Associates, Inc., *Summary Report Due Diligence Caterpillar Site*, October 1998.
5. Arizona Department of Transportation, *Ehrenberg - Phoenix Hwy. Cemetery Rd. - Perryville Rd. Maricopa County, I-10-2 (31)*, November 1974.
6. U.S. Department of Agriculture, Soil Conservation Service, National Engineering Handbook, *Section 4, Hydrology, Chapter 19, Transmission Losses*, March 1983.
7. Arizona Department of Water Resources, State Standard 5-96: *Watercourse System Sediment Balance*, September 1996.
8. EDAW, *Whitestone Master Plan*, December 2000.
9. JE Fuller / Hydrology & Geomorphology, Inc., *Evaluation of Landforms for White Tank Mountains East Area*, August 10, 1999.
10. Western Technologies, Inc., *Caterpillar Property Percolation Tests, Maricopa County, Arizona*, August 2, 1999.
11. Federal Emergency Management Agency, *Flood Insurance Rate Map, Maricopa County, Arizona, and Incorporated Areas Panel 1570, 1590, 2035, and 2055 of 4350*, July 19, 2001.
12. Flood Control District of Maricopa County, *Loop 303 Corridor/White Tanks Area Drainage Master Plan Update*, May 2001.
13. Town of Buckeye, *Town of Buckeye Development Code*, August 1996.

APPENDIX A

HEC-1 Existing Conditions
Computer Output Files

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   08AUG02  TIME  13:30:20  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                    HEC-1 INPUT                                                    PAGE  1

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

        1           ID   ********************************************************************
        2           ID        V E R R A D O   EXISTING CONDITION HYDROLOGY
        3           ID        DESIGN EVENT:   100-YEAR - 24-HOUR FLOOD EVENT
        4           ID        DATE:           08 AUGUST 2002
        5           ID        FILE:           M:\2000\001081\HYDRO\HYDROLOGY\
        6           ID                         31JULY2002EXISTING CONDITIONHEC-1\1479E100.DAT
        7           ID   ********************************************************************
        8           ID
        9           ID        ***HC CARDS FOR CP2711, I2712, CP255A & 1I287C UPDATED
       10           ID        ***TO INCLUDE AN AREA AT THE POINT OF COMBINATION
       11           ID
       12           ID         3 - 27 - 02
       13           ID         **ADOT BASIN GEOMETRY REPRESENTS MOST RECENT 2' CONTOURS**
       14           ID         WHITE TANKS AREA DRAINAGE MASTER STUDY *UPDATE*
       15           ID         Original MODEL BY THE WLB Group for FCDMC AS PART OF THE WHITE
       16           ID         TANKS/AGUA FRIA ADMS, Date: October 1991
       17           ID
       18           ID         REVISED HYDROLOGY HEC-1 RUN FOR WHITE TANKS ADMS
       19           ID         100-YEAR, 24-HOUR STORM                  original file: WTADMS.24
       20           ID
       21           ID         SOME NOMENCLATURE CHANGES HAVE BEEN MADE PER REQUEST OF
       22           ID         FCDMC - 5-09-01
       23           ID
       24           ID         INCORPORATED CHANGES PROPOSED BY DAVID EVANS AND ASSOCIATES
       25           ID         AT CACTUS AND REEMS IN REGARD TO RANCHO GABRIELA AT THE
       26           ID         DIRECTION OF THE FCDMC 9-20-01
       27           ID
       28           ID         REVISED CONTRIBUTING AREAS ALONG CACTUS WEST OF REEMS AND
       29           ID         IN ADOT WATERSHED AREA
       30           ID
       31           ID
       32           ID
       33           ID                                   REVISED BY URS     DATE: 3-27-02
       34           ID                                                      FILE: L303M3K.DAT
       35           ID
       36           ID        NOTES:
       37           ID        1. THIS HEC-1 MODEL CONTAINS THE FOLLOWING SUPER BASINS: WHITE TANKS 3,
       38           ID           2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2 & 3, 4 THRU 26.
       39           ID        2. REVISED TO REFLECT UPDATED SOILS MAPS AND NEW DEVELOPMENT.
       40           ID        3. AVERAGE XKSAT VALUES FOR EACH SUBBASIN WAS RECEIVED FROM FCDMC
       41           ID           GIS DATA AND THEN ADJUSTED FOR VEGETATION, OR LEFT AS ORIGINALLY IN
       42           ID           THE WLB MODEL.
       43           ID        4. FOR NEW DEVELOPMENTS ONLY 80% OF REPORTED PROVIDED RETENTION
       44           ID           WAS INCLUDED IN THIS MODEL (AS A CONSERVATIVE ESTIMATE). RETENTION
       45           ID           CAPACITIES WERE ESTIMATED BY EEC FOR DEVELOPMENTS WITH NO
       46           ID           DRAINAGE REPORTS.
       47           ID        5. REVISED DRAINAGE BOUNDARIES BASED UPON FIELD INSPECTION OF SUN CITY.
       48           ID           GRAND.  COMBINED SEVERAL BASINS TOGETHER TO MAKE NEW BASINS 114 &115.
       49           ID           ALSO REROUTED SUBBASINS 100A, 101, 102A AND 106 TO THE SOUTH TO 113A.
       50           ID        6. CHANNEL ROUTE ALONG REEMS ROAD UPDATED TO REFLECT NEW CONSTRUCTION.
       51           ID        7. REVISED SCS TYPE II RAINFALL DISTRIBUTION FOR THE 24-HOUR GENERAL
       52           ID           STORM.
       53           ID        8. REVISED RAINFALL DEPTH-AREA REDUCTION FACTORS.
       54           ID        9. PSIF WERE ADJUSTED BASED ON THE VALUES OF XKSAT AND WERE EDITED INTO
       55           ID           THE DATA FILE BY THE FCDMC.
1                                    HEC-1 INPUT                                                    PAGE  2
```

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

  56          ID       10. AVERAGE XKSAT VALUES FOR SUBBASINS WITH BORROW PITS (WHITE TANKS
  57          ID           AREAS #3 & #4) WERE ESTIMATED BY EEC.
  58          ID
              *DIAGRAM
  59          IT       5                    600
  60          IO       5
  61          IN      15
  62          JD    4.03    .001
  63          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
  64          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
  65          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
  66          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
  67          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
  68          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
  69          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
  70          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
  71          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
  72          PC    .983    .986    .989    .992    .995    .998    1.00   1.000   1.000   1.000
  73          JD    3.79      10
  74          JD    3.51      50
  75          JD    3.39     100
  76          JD    3.29     200
              * ***************************************************************************
              * **************THE FOLLOWING SECTION IS WHITE TANKS 3**********************
              * ***************************************************************************
              * ******TRANSMISSION LOSSES REMOVED - 4/25/00 - ERE*************************
              * ***************************************************************************
              *
              *

  77          KK       4
  78          KM        RUNOFF HYDROGRAPH FORM SUB-BASIN 4.
  79          BA     .30
              *     LG    0.35    0.15    8.01   0.081  18.504
  80          LG     .20     .35    4.35     .44    9.00
  81          UI     47.    191.    286.    443.    513.    346.    237.    115.     67.     36.
  82          UI     14.     14.      0.      0.      0.      0.      0.      0.      0.      0.
  83          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

  84          KK       5
  85          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 5.
  86          BA     .72
              *     LG    0.35    0.15   8.023   0.081  17.926
  87          LG     .20     .35    4.30     .45    9.00
  88          UI    109.    433.    653.    981.   1241.    852.    594.    323.    177.    104.
  89          UI     33.     33.     33.      0.      0.      0.      0.      0.      0.      0.
  90          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                          HEC-1 INPUT                                          PAGE  3

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


  91          KK     CP5
  92          KM        ADD HYDROGRAPHS AT CP5.
  93          HC       2    1.02
              *

  94          KK    RCP5
  95          KM        ROUTE COMBINED HYDROGRAPHS AT CP5 TO CP6.
  96          RS       1              -1       0
  97          RC     .08     .05     .08    2400   .0833
  98          RX     955     970     985    1000    1020    1035    1050    1065
  99          RY    2815    2810    2805    2800    2800    2805    2810    2815
              *

 100          KK       6
 101          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 6.
 102          BA     .45
              *     LG    0.35    0.15   7.976   0.082      20
 103          LG     .20     .35    3.95     .53   10.00
 104          UI    206.    627.   1145.    834.    421.    154.     53.     33.      0.      0.
 105          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 106          KK     CP6
 107          KM        ADD HYDROGRAPHS AT CP6.
 108          HC       2    1.47
              *

 109          KK    RCP6
 110          KM        ROUTE COMBINED HYDROGRAPHS AT CP6 TO CP7.
 111          RS       1              -1       0
 112          RC     .08     .05     .08    2400   .0833
 113          RX     955     970     985    1000    1020    1035    1050    1065
 114          RY    2815    2810    2805    2800    2800    2805    2810    2815
              *

 115          KK       7
 116          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 7.
 117          BA     .31
              *     LG    0.35    0.15   7.976   0.082      20
```

```
118          LG     .20     .35    3.95     .53   10.00
119          UI    124.    383.    708.    610.    347.    132.     54.     21.      0.      0.
120          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

121          KK     CP7
122          KM        ADD HYDROGRAPHS AT CP7.
123          HC       2    1.78
             *
1                                          HEC-1 INPUT                                          PAGE  4

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


124          KK    RCP7
125          KM        ROUTE COMBINED HYDROGRAPHS AT CP7 TO CP9.
126          RS       3              -1       0
127          RC     .08     .05     .08   10200  .07745
128          RX    1000    1045    1120    1195    1230    1300    1350    1450
129          RY    1910    1880    1850    1838    1838    1850    1880    1910
             *

130          KK       9
131          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 9.
132          BA    1.40
             *     LG    0.35    0.15   7.909   0.084  19.572
133          LG     .20     .35    4.00     .52   10.00
134          UI    155.    380.    725.    933.   1213.   1828.   1593.   1225.    939.    707.
135          UI    389.    261.    178.    116.     47.     47.     47.     47.      0.      0.
136          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

137          KK   I1CP9
138          KM        ADD HYDROGRAPHS AT CP9.
139          HC       2    3.18
             *
             *
             *
             *
             *
             *
             *
             *
             *

140          KK      14
141          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 14.
142          BA    1.47
             *     LG    0.35    0.15   7.974   0.082  18.195
143          LG     .20     .35    4.30     .45    9.00
144          UI    166.    421.    789.   1018.   1340.   1997.   1636.   1264.    961.    700.
145          UI    363.    275.    166.     93.     51.     51.     51.      0.      0.      0.
146          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

147          KK   RCP14
148          KM        ROUTE FLOW FROM CP14 TO CP15.
149          RS       4              -1       0
150          RC     .06    .035     .06    8800  .02556
151          RX    1000    1030    1075    1200    1220    1280    1415    1480
152          RY    1296    1295    1294    1288    1288    1294    1296    1300
             *
1                                          HEC-1 INPUT                                          PAGE  5

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


153          KK      15
154          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 15.
155          BA    1.26
             *     LG    0.35   0.194   6.561   0.142   15.67
156          LG     .18     .35    4.40     .41    7.00
157          UI    130.    282.    577.    747.    939.   1325.   1550.   1154.    918.    712.
158          UI    517.    276.    216.    137.     92.     40.     40.     40.     40.      0.
159          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
160          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

161          KK  I1CP15
162          KM        ADD HYDROGRAPHS AT I1CP15
163          HC       2    2.73
             *

164          KK      16
165          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 16.
166          BA    1.13
167          LG     .17     .35    4.65     .34   11.00
168          UI    115.    239.    502.    650.    811.   1121.   1392.   1050.    840.    656.
169          UI    500.    270.    194.    138.    102.     35.     35.     35.     35.      0.
170          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
171          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

172          KK    SR16
173          KM        STORAGE ROUTE THROUGH THE CATERPILLAR DETENTION BASIN IN SUBWATERSHED 16
```

```
174          RS       1    STOR       0       0
175          SV       0       1      31     114     270     502     807    1319    1388    1460
176          SQ       0       0       0       0       0       0       0       0       0     135
177          SE    1198    1200    1210    1220    1230    1240    1250    1260    1261    1262
             *

178          KK    CP15
179          KM        ADD HYDROGRAPHS AT CP15.
180          HC       2    3.90
             *

181          KK   RCP15
182          KM        ROUTE COMBINED HYDROGRAPHS AT CP15 TO CP17.
183          RS       3              -1       0
184          RC     .06    .035     .06    6800   .0079
185          RX    1000    1310    1380    1540    1640    1670    1700    1910
186          RY    1234    1232    1228    1226    1226    1228    1232    1235
             *
             *
             * ************************************************************************
             * ***THE FOLLOWING SECTION TAKEN FROM NEW SUPER BASIN 23 WITH NEW SOILS*****
             * ************************************************************************
             *
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

187          KK      18
188          KM   BASIN 18
189          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
190          KM    L=      1.3  Lca=       .6   S=  920.0  Kn= .050  LAG=  18.0
191          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
192          KM   RAINFALL DEPTH OF 4.03 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
193          KM   AN AREAL REDUCTION COEFFICIENT OF 1.000 WAS USED
194          BA     .81
195          LG     .20     .35    4.20     .48   10.00
196          UI    211.    714.   1117.   1727.   1163.    730.    304.    173.     52.     46.
197          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
198          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

199          KK     R18
200          KM        ROUTE FLOW FROM CP18 TO CP19.
201          RS       2              -1       0
202          RC     .08     .05     .08    7800   .0615
203          RX    1000    1030    1080    1097    1120    1140    1205    1218
204          RY    1520    1518    1514    1510    1510    1512    1518    1520
             *

205          KK      19
206          KM   BASIN 19
207          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
208          KM    L=      2.1  Lca=      1.0   S=  353.9  Kn= .050  LAG=  31.6
209          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
210          BA     .79
211          LG     .19     .35    4.45     .41    9.00
212          UI     84.    194.    384.    495.    629.    930.    942.    709.    555.    428.
213          UI    283.    147.    121.     84.     33.     26.     26.     26.      0.      0.
214          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

215          KK    CP19
216          KM        ADD HYDROGRAPHS AT CP19.
217          HC       2
             *

218          KK     R19
219          KM        ROUTE COMBINED HYDROGRPAH AT CP19 TO CP21.
220          RS       2              -1       0
221          RC     .06     .04     .06    5772   .0246
222          RX    1000    1010    1025    1040    1055    1069    1080    1100
223          RY    1466    1464    1460    1458    1458    1460    1466    1467
             *

224          KK      21
225          KM   BASIN 21
226          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
227          KM    L=      1.8  Lca=       .9   S=  182.7  Kn= .050  LAG=  31.8
228          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
229          BA     .79
230          LG     .19     .40    6.00     .20    7.00
1                                          HEC-1 INPUT                                          PAGE  7

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

231          UI     84.    191.    379.    489.    621.    910.    950.    712.    560.    431.
232          UI    293.    150.    124.     84.     38.     26.     26.     26.      0.      0.
233          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

234          KK  I1CP21
235          KM        ADD HYDROGRAPHS AT CP21.
236          HC       2
```

```
                *
 237            KK      20
 238            KM   BASIN 20
 239            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 240            KM    L=       2.1  Lca=       1.0   S=  425.4  Kn= .050  LAG=  30.3
 241            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 242            BA    1.07
 243            LG     .19      .35     4.90      .31     8.00
 244            UI    119.     295.     561.     722.     941.    1418.    1209.     930.     712.     533.
 245            UI    283.     200.     131.      82.      36.      36.      36.      36.      0.       0.
 246            UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
                *

 247            KK    SR20
 248            KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP20.
 249            RS       1    STOR       0       0
 250            SV       0    1.05    9.43   26.91   54.31   92.89  138.67  176.47  190.08  219.05
 251            SV  249.57
 252            SQ       0       0       0       0       0       0       0       0     265    1377
 253            SQ    2963
 254            SE    1443    1446    1450    1454    1458    1462    1466    1469    1470    1472
 255            SE    1474
                *

 256            KK     R20
 257            KM        ROUTE REMAINDER OF FLOW AT CP20  TO CP21
 258            RS       4              -1       0
 259            RC     .06    .045     .06    6240   .0208
 260            RX    1000    1012    1025    1032    1050    1057    1070    1092
 261            RY    1424    1422    1420    1418    1418    1420    1422    1424
                *

 262            KK    CP21
 263            KM        ADD HYDROGRAPHS AT CP21.
 264            HC       2
                *

 265            KK    SR21
 266            KM         STORAGE ROUTE THROUGH RETENTION BASIN AT CP21
 267            RS       1    STOR       0       0
 268            SV       0     .68   20.68   57.58   95.91  102.34  117.65     130
 269            SQ       0       0       0       0       0     265    1377    2000
 270            SE    1319    1320    1330    1340    1347    1348    1350    1351
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 271            KK     R21
 272            KM        ROUTE REMAINDER OF FLOW AT CP21 TO CP23
 273            RS       1              -1       0
 274            RC     .03     .03     .05    2340   .0196
 275            RX    1000    1030    1050    1070    1145    1212    1225    1250
 276            RY    1310    1306    1304    1302    1302    1304    1306    1310
                *

 277            KK      23
 278            KM   BASIN 23
 279            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 280            KM    L=        .4  Lca=       .2   S=   90.9  Kn= .050  LAG=  11.7
 281            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 282            BA     .16
 283            LG     .18      .35     3.95      .51   26.00
 284            UI    108.     318.     471.     234.      72.      22.       0.       0.       0.       0.
 285            UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
                *

 286            KK    CP23
 287            KM        ADD HYDROGRAPHS AT CP23
 288            HC       2
                *

 289            KK    SR23
 290            KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP23.
 291            RS       1    STOR       0       0
 292            SV       0    6.04   20.38   53.82  120.38  216.24  325.98  455.42   606.1  645.49
 293            SV  685.61  767.98
 294            SQ       0       0       0       0       0       0       0       0       0       0
 295            SQ     928    8950
 296            SE    1272    1276    1280    1284    1288    1292    1296    1300    1304    1305
 297            SE    1306    1308
                *

 298            KK     R23
 299            KM        ROUTE REMAINDER OF FLOW AT CP23 TO CP22A
 300            RS       4              -1       0
 301            RC     .05     .03     .05    4992    .005
 302            RX     930     975    1000    1010    1030    1040    1041    1042
 303            RY    1397  1396.5    1396    1394    1394    1396  1396.5    1397
                *

 304            KK      22
 305            KM   BASIN 22
```

```
306          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
307          KM    L=      1.6  Lca=       .8   S=  426.6  Kn= .050  LAG=  25.0
308          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
309          BA     .57
310          LG     .19     .35    4.80     .33    8.00
311          UI     77.    258.    418.    563.    888.    743.    544.    393.    214.    129.
312          UI     78.     33.     24.     24.      0.      0.      0.      0.      0.      0.
313          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
1                                          HEC-1 INPUT                                          PAGE  9

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


314          KK     R22
315          KM        ROUTE FLOW FROM CP22 TO CP22A
316          RS       3              -1       0
317          RC     .05     .03     .05    6230    .025
318          RX    1000    1030    1060    1070    1100    1115    1125    1150
319          RY    1294    1292    1290    1288    1288    1290    1292    1294
             *

320          KK     22A
321          KM   BASIN 22A
322          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
323          KM    L=      1.2  Lca=       .5   S=  135.6  Kn= .050  LAG=  22.6
324          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
325          BA     .50
326          LG     .15     .39    5.80     .20    6.00
327          UI     74.    289.    439.    648.    861.    601.    422.    248.    126.     78.
328          UI     28.     23.     23.      0.      0.      0.      0.      0.      0.      0.
329          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

330          KK  I1C22A
331          KM        ADD HYDROGRAPHS AT CP22A
332          HC       2
             *

333          KK   CP22A
334          KM        ADD HYDROGRAPHS AT CP22A
335          HC       2
             *

336          KK    R22A
337          KM        ROUTE COMBINED HYDROGRAPHS AT CP22A TO CP25
338          RS       4              -1       0
339          RC     .03     .03     .05    7022   .0079
340          RX    1000    1030    1040    1047    1070    1097    1120    1200
341          RY    1255    1254    1250    1248    1250    1252    1254    1255
             *

342          KK      25
343          KM   BASIN 25
344          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
345          KM    L=      1.3  Lca=       .7   S=   86.5  Kn= .050  LAG=  29.5
346          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
347          BA     .46
348          LG     .15     .39    5.70     .21     .00
349          UI     53.    136.    253.    326.    435.    638.    505.    390.    295.    208.
350          UI    107.     81.     53.     23.     16.     16.     16.      0.      0.      0.
351          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
1                                          HEC-1 INPUT                                          PAGE 10

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


352          KK  I1CP25
353          KM        ADD HYDROGRAPHS AT CP25
354          HC       2
             *

355          KK      24
356          KM   BASIN 24
357          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
358          KM    L=       .9  Lca=       .4   S=   78.7  Kn= .050  LAG=  22.2
359          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
360          BA     .14
361          LG     .35     .35    4.80     .28     .00
362          UI     21.     84.    127.    191.    241.    166.    115.     63.     34.     20.
363          UI      7.      7.      7.      0.      0.      0.      0.      0.      0.      0.
364          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

365          KK    SR24
366          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP24
367          RS       1    STOR       0       0
368          SV       0     .46    2.96    16.6      86  221.55  282.99  306.59  357.02
369          SQ       0       0       0       0       0       0       0      50    2598
370          SE    1210    1214    1216    1220    1230    1240    1243    1244    1246
             *

371          KK     R24
372          KM        ROUTE REMAINDER OF FLOW AT CP24 TO CP25
```

```
373          RS       1              -1       0
374          RC     .05     .03     .05    1326    .021
375          RX    1000    1040    1070    1100    1200    1220    1245    1265
376          RY    1234    1232    1230    1228    1228    1230    1232    1234
             *

377          KK    CP25
378          KM        COMBINE HYDROGRAPHS AT CP25
379          HC       2
             *

380          KK    SR25
381          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP25
382          RS       1    STOR       0       0
383          SV       0    5.61   10.27   13.15   16.62   26.62
384          SQ       0       0       0       0     125    2273
385          SE    1204    1210    1212    1213    1214    1216
             *

386          KK      26
387          KM   BASIN 26
388          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
389          KM    L=      2.4  Lca=      1.2   S=  227.3  Kn= .050  LAG=  37.9
390          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
391          BA    1.16
392          LG     .17     .33    7.30     .11    3.00
393          UI    103.    163.    401.    532.    639.    787.   1092.   1251.    956.    788.
1                                         HEC-1 INPUT                                          PAGE 11

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

394          UI    637.    510.    359.    200.    171.    117.     99.     32.     32.     32.
395          UI     32.     32.      0.      0.      0.      0.      0.      0.      0.      0.
396          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

397          KK     R26
398          KM        ROUTE FLOW FROM CP26 TO CP27
399          RS       4              -1       0
400          RC     .05     .03     .05    7020   .0157
401          RX    1000    1012    1025    1040    1090    1105    1112    1120
402          RY    1250    1248    1245    1242    1242    1244    1247    1250
             *

403          KK      27
404          KM   BASIN 27
405          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
406          KM    L=      1.9  Lca=       .9   S=  164.9  Kn= .050  LAG=  33.5
407          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
408          BA    1.00
409          LG     .15     .36    6.80     .13   21.00
410          UI    101.    187.    445.    661.    863.    948.    940.    830.    642.    495.
411          UI    385.    294.    221.    175.    135.    107.     71.     69.     38.     24.
412          UI     24.     24.     24.     24.      0.      0.      0.      0.      0.      0.
413          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

414          KK  I1CP27
415          KM        ADD HYDROGRAPHS AT CP27
416          HC       2
             *

417          KK    SR27
418          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP27
419          RS       1    STOR       0       0
420          SV       0     .13    5.77    9.37   11.42   13.71   19.21
421          SQ       0       0       0       0       0     550    4546
422          SE    1203    1204    1210    1212    1213    1214    1216
             *

423          KK    CP27
424          KM        ADD REMAINING FLOW OF CP25 & CP27 AT CP27
425          HC       2
             *

426          KK     R27
427          KM        ROUTE COMBINED REMAINDER FLOW AT CP27 TO CP39
428          RS       3              -1       0
429          RC     .03     .03     .05    5928   .0084
430          RX    1000    1010    1020    1025    1055    1085    1175    1250
431          RY    1210    1210    1210    1202    1202    1204    1206    1208
             *
1                                         HEC-1 INPUT                                          PAGE 12

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

432          KK      34
433          KM   BASIN 34
434          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
435          KM    L=      1.5  Lca=       .7   S=  675.7  Kn= .050  LAG=  21.6
436          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
437          BA     .36
438          LG     .20     .35    3.95     .53   10.00
439          UI     57.    230.    344.    531.    615.    415.    284.    139.     81.     43.
```

```
440          UI     17.     17.      0.      0.      0.      0.      0.      0.      0.      0.
441          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

442          KK      33
443          KM   BASIN 33
444          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
445          KM    L=      1.6  Lca=       .8   S=  845.7  Kn= .050  LAG=  22.2
446          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
447          BA     .65
448          LG     .20     .35    3.95     .53   10.00
449          UI     99.    391.    590.    886.   1120.    769.    536.    291.    160.     94.
450          UI     30.     30.     30.      0.      0.      0.      0.      0.      0.      0.
451          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

452          KK    CP33
453          KM        ADD HYDROGRAPHS AT CP33
454          HC       2
             *

455          KK     R33
456          KM        ROUTE COMBINED HYDROGRAPHS AT CP33 TO CP35
457          RS       2              -1       0
458          RC     .08     .05     .08    4680   .0427
459          RX    1000    1015    1022    1035    1050    1068    1092    1100
460          RY    1800    1760    1720    1680    1680    1720    1760    1800
             *

461          KK      35
462          KM   BASIN 35
463          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
464          KM    L=      1.5  Lca=       .6   S=  614.3  Kn= .050  LAG=  20.5
465          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
466          BA     .39
467          LG     .20     .35    3.95     .53   10.00
468          UI     72.    273.    411.    675.    629.    427.    269.    119.     73.     27.
469          UI     20.     20.      0.      0.      0.      0.      0.      0.      0.      0.
470          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

471          KK  I1CP35
472          KM        ADD HYDROGRAPHS AT CP35
473          HC       2
             *

474          KK      32
475          KM   BASIN 32
476          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
477          KM    L=      2.5  Lca=      1.2   S=  528.4  Kn= .050  LAG=  33.2
478          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
479          BA    1.29
480          LG     .20     .35    4.35     .44   10.00
481          UI    131.    247.    587.    872.   1128.   1236.   1219.   1063.    821.    631.
482          UI    487.    375.    277.    222.    168.    134.     90.     90.     40.     32.
483          UI     32.     32.     32.     32.      0.      0.      0.      0.      0.      0.
484          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

485          KK    CP35
486          KM        ADD HYDROGRAPHS AT CP35
487          HC       2
             *

488          KK     R35
489          KM        ROUTE COMBINED HYDROGRAPHS AT CP35 TO CP36
490          RS       2              -1       0
491          RC     .06    .035     .06    5070  .0355
492          RX    1000    1012    1023    1034    1045    1056    1067    1079
493          RY    1429    1428    1426    1424    1424    1426    1428    1429
             *

494          KK      36
495          KM   BASIN 36
496          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
497          KM    L=      1.2  Lca=       .6   S=  178.0  Kn= .050  LAG=  23.4
498          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
499          BA     .24
500          LG     .16     .35    4.30     .42    1.00
501          UI     35.    128.    198.    280.    410.    297.    212.    139.     65.     43.
502          UI     22.     11.     11.      0.      0.      0.      0.      0.      0.      0.
503          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

504          KK  I1CP36
505          KM        ADD HYDROGRAPHS AT CP36
506          HC       2
             *

507          KK      37
508          KM   BASIN 37
```

```
 509          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 510          KM    L=      2.3  Lca=      1.0   S=  224.6  Kn= .050  LAG=  35.4
 511          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 512          BA     .95
```



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

 513          LG     .19     .35    4.40     .42    9.00
 514          UI     90.    167.    374.    489.    599.    766.   1106.    941.    747.    597.
 515          UI    474.    343.    189.    151.    102.     80.     28.     28.     28.     28.
 516          UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 517          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 518          KK    CP36
 519          KM       ADD HYDROGRAPHS AT CP 36
 520          HC      2
              *

 521          KK     R36
 522          KM       ROUTE COMBINED HYDROGRAPHS AT CP36 TO CP38
 523          RS      2              -1       0
 524          RC    .05     .03     .05    4836   .0198
 525          RX   1000    1008    1020    1032    1050    1112    1135    1183
 526          RY   1344    1342    1340    1338    1338    1340    1342    1344
              *

 527          KK     38
 528          KM   BASIN 38
 529          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 530          KM    L=      1.3  Lca=       .6   S=  155.0  Kn= .050  LAG=  24.7
 531          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 532          BA     .76
 533          LG     .17     .35    4.30     .43    4.00
 534          UI    104.    355.    570.    773.   1212.    982.    718.    511.    267.    167.
 535          UI    104.     35.     32.     32.      0.      0.      0.      0.      0.      0.
 536          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 537          KK    CP38
 538          KM       ADD HYDROGRAPHS AT CP38
 539          HC      2
              *

 540          KK    SR38
 541          KM       STORAGE ROUTE THROUGH RETENTION BASIN AT CP38
 542          RS      1    STOR       0       0
 543          SV      0    1.83   15.38   39.25   41.76   47.45   60.58
 544          SQ      0       0       0       0      44    2223    6550
 545          SE   1275    1280    1290  1297.5    1298    1300    1301
              *

 546          KK     R38
 547          KM       ROUTE REMAINDER OF FLOW AT CP38 TO CP39
 548          RS      3              -1       0
 549          RC    .05     .03     .05    5438   .0167
 550          RX   1000    1005    1010    1025    1055    1085    1175    1250
 551          RY   1212    1211    1210    1202    1202    1204    1206    1208
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 552          KK     39
 553          KM   BASIN 39
 554          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 555          KM    L=      2.0  Lca=      1.0   S=   75.6  Kn= .050  LAG=  40.8
 556          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 557          BA     .77
 558          LG     .15     .35    4.20     .44     .00
 559          UI     63.     81.    231.    312.    371.    448.    561.    787.    684.    550.
 560          UI    461.    376.    308.    215.    124.    106.     79.     63.     30.     19.
 561          UI     19.     19.     19.     19.      0.      0.      0.      0.      0.      0.
 562          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 563          KK  I1CP39
 564          KM       ADD HYDROGRAPHS AT CP39
 565          HC      2
              *

 566          KK    CP39
 567          KM       ADD HYDROGRAPHS AT CP39
 568          HC      2
              *

 569          KK     R39
 570          KM       ROUTE COMBINED HYDROGRAPH AT CP39 TO CP42
 571          RS      2              -1       0
 572          RC    .03     .03     .05    4836   .0141
 573          RX   1000    1005    1015    1025    1055    1070    1087    1130
 574          RY   1143    1142    1140    1132    1132    1136    1140    1142
              *
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575          KK      40
576          KM   BASIN 40
577          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
578          KM    L=       1.5  Lca=       .6   S=  264.5  Kn= .050  LAG=  24.0
579          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
580          BA     .52
581          LG     .18      .35     4.00      .50   11.00
582          UI     73.     249.     484.     652.     688.     578.     401.     281.     193.     135.
583          UI     93.      64.      50.      21.      18.      18.      18.      0.       0.       0.
584          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

585          KK     R40
586          KM        ROUTE FLOW FROM CP40 TO CP42
587          RS       4              -1       0
588          RC     .05      .03      .05     6396   .0086
589          RX    1000     1010     1065     1095     1135     1155     1215     1220
590          RY    1115     1114     1112     1110     1110     1112     1113     1113
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

591          KK      42
592          KM   BASIN 42
593          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
594          KM    L=       2.1  Lca=      1.0   S=   96.2  Kn= .050  LAG=  40.5
595          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
596          BA    1.18
597          LG     .21      .35     4.70      .31      .00
598          UI     98.     129.     359.     484.     576.     697.     880.    1224.    1040.     839.
599          UI    700.     571.     465.     321.     180.     162.     114.      98.      38.      30.
600          UI     30.      30.      30.      30.       0.       0.       0.       0.       0.       0.
601          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

602          KK  I1CP42
603          KM        ADD HYDROGRAPHS AT CP42
604          HC       2
             *

605          KK    CP42
606          KM        ADD HYDROGRAPHS AT CP42
607          HC       2
             *

608          KK    SR42
609          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP42
610          RS       1    STOR       0       0
611          SV       0     .11   10.43   41.63    69.9   77.34    94.2  113.66   134.7  160.78
612          SQ       0       0       0       0       0     163     844    2096    4630   13500
613          SE  1071.5    1072    1080    1090    1095    1096    1098    1100    1102    1104
             *

614          KK     R42
615          KM        ROUTE REMAINDER OF HYDROGRAPH AT CP42 TO CP43
616          RS       1              -1       0
617          RC     .03      .03      .05     858   .0151
618          RX     900      950     1000     1030     1060     1075     1085     1090
619          RY    1091     1088     1086     1084     1084     1086     1088     1091
             *

620          KK    41A1
621          KM   BASIN 41A1
622          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
623          KM    L=        .2  Lca=       .1   S=   90.5  Kn= .050  LAG=   7.3
624          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
625          BA     .02
626          LG     .35      .39     5.80      .18      .00
627          UI     34.      86.      29.       5.       0.       0.       0.       0.       0.       0.
628          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
```



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

629          KK  SR41A1
630          KM        STORAGE ROUTE THROUGH 30" CMP AT STA 6255+85 ON I-10.
631          RS       1    STOR       0       0
632          SV       0     .43     .53     .63     .74    1.24    1.65    3.40    6.20
633          SQ       0      10      14      18      23      29      33     869    6050
634          SE  1133.4 1134.91 1135.23 1135.58 1135.97 1137.62  1139.0  1140.3 1143.85
             *

635          KK  CP41A1
636          KM        DIVERT FLOW FROM CP41A1 TO CP303
637          DT   1D303
638          DI       0      14      23      33     869    6050
639          DQ       0      14      23      33      35      42
             *

640          KK   R41A1
```

```
641          KM        ROUTE REMAINDER FROM CP41A1 TO CP41A2.
642          RS       1              -1       0
643          RC     .06     .03     .04     580   .0093
644          RX     600     800     900     965    1000    1020    1030    1040
645          RY    1147    1143    1142    1141    1141    1143    1145    1145
             *

646          KK    41A2
647          KM   BASIN 41A2
648          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
649          KM    L=       .2  Lca=       .1   S=   87.0  Kn= .050  LAG=   7.9
650          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
651          BA     .03
652          LG     .35     .35    4.25     .39     .00
653          UI     44.    122.     54.     10.      0.      0.      0.      0.      0.      0.
654          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

655          KK  CP41A2
656          KM        ADD HYDROGRAPHS AT CP41A2.
657          HC       2     .05
             *

658          KK  SR41A2
659          KM        STORAGE ROUTE THROUGH 30" CMP AT STA 6261+65 ON I-10.
660          RS       1    STOR       0       0
661          SV       0     .10     .24     .31     .62    1.72
662          SQ       0       8      19      24     624    2104
663          SE  1132.7 1134.07 1134.98 1135.56 1137.34 1139.65
             *

664          KK   D41A2
665          KM        DIVERT FLOW FROM CP41A2 TO CP303
666          DT   2D303
667          DI       0       8      19      24     624    2104
668          DQ       0       8      19      24      30      36
             *
```



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

669          KK   R41A2
670          KM        ROUTE REMAINDER FROM CP41A2 TO CP41A3.
671          RS       1              -1       0
672          RC     .06     .03     .04     595   .0093
673          RX     600     800     900     965    1000    1020    1030    1040
674          RY    1140    1136    1135    1134    1134    1136    1138    1140
             *

675          KK    41A3
676          KM   BASIN 41A3
677          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
678          KM    L=       .3  Lca=       .1   S=   84.6  Kn= .050  LAG=   8.6
679          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
680          BA     .03
681          LG     .35     .35    3.95     .44     .00
682          UI     37.    112.     65.     14.      4.      0.      0.      0.      0.      0.
683          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

684          KK  CP41A3
685          KM        ADD HYDROGRAPHS AT CP41A3.
686          HC       2     .08
             *

687          KK  SR41A3
688          KM        STORAGE ROUTE THROUGH 30" CMP AT STA 6267+60 ON I-10
689          RS       1    STOR       0       0
690          SV       0     .86    1.05    1.25    1.48    2.51    2.84    4.15    5.46    8.08
691          SQ       0      10      14      18      23      29      32     254     654     896
692          SE  1128.6 1130.13 1130.45 1130.80 1131.19 1132.94  1133.5  1134.0  1134.5 1135.57
             *

693          KK   D41A3
694          KM        DIVERT FLOW FROM CP41A3 TO CP303
695          DT   3D303
696          DI       0      10      14      18      23      29      32     254     659    1896
697          DQ       0      10      14      18      23      29      32      33      34      35
             *

698          KK   R41A3
699          KM        ROUTE REMAINDER FROM CP41A3 TO CP41A.
700          RS       1              -1       0
701          RC     .06     .03     .04     628   .0093
702          RX     600     800     900     965    1000    1020    1030    1040
703          RY    1135    1131    1130    1129    1129    1131    1133    1133
             *

704          KK     41A
705          KM   BASIN 41A
706          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
707          KM    L=       .3  Lca=       .2   S=   91.2  Kn= .050  LAG=  10.3
708          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
709          BA     .05
```

```
 710          LG     .35     .35    3.95     .44     .00
1                                          HEC-1 INPUT                                                          PAGE 19

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

 711          UI     44.    138.    136.     50.     13.      5.      0.      0.      0.      0.
 712          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 713          KK   CP41A
 714          KM        ADD HYDROGRAPHS AT CP41A.
 715          HC       2     .13
              *

 716          KK   SR41A
 717          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6273+88 ON I-10
 718          RS       1    STOR       0       0
 719          SV       0    1.22    2.65    3.07    3.20    4.78    6.37    7.96    9.57
 720          SQ       0      10      36      44      45     312     799    1429    2047
 721          SE  1124.4 1125.75 1127.38 1127.86  1128.0  1128.5  1129.0  1129.5 1129.92
              *

 722          KK    D41A
 723          KM        DIVERT FLOW FROM CP41A TO CP303
 724          DT   4D303
 725          DI       0      10      36      44      45     312     799    1429    2047
 726          DQ       0      10      36      44      45      47      49      51      52
              *

 727          KK    R41A
 728          KM        ROUTE REMAINDER FROM CP41A TO CP41-1.
 729          RS       1              -1       0
 730          RC     .06     .03     .04    1437   .0093
 731          RX     600     800     900     965    1000    1020    1030    1040
 732          RY    1122    1118    1117    1116    1116    1118    1120    1120
              *

 733          KK    41-1
 734          KM   BASIN 41-1
 735          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 736          KM    L=       .6  Lca=       .3   S=   74.6  Kn= .050  LAG=  16.8
 737          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 738          BA     .15
 739          LG     .35     .35    3.95     .44     .00
 740          UI     46.    150.    249.    324.    201.    108.     45.     20.      9.      9.
 741          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 742          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 743          KK  CP41-1
 744          KM        ADD HYDROGRAPHS AT CP41-1
 745          HC       2     .28
              *

 746          KK  SR41-1
 747          KM        STORAGE ROUTE THROUGH 2-36" CMP AT STA 6288+25 ON I-10.
 748          RS       1    STOR       0       0
 749          SV       0     .73    3.47    3.94    4.53    5.12    5.71
 750          SQ       0      10      36      44     489    1300    2348
 751          SE  1112.7 1114.08 1115.71    1116  1116.5    1117  1117.5
              *
1                                          HEC-1 INPUT                                                          PAGE 20

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

 752          KK   D41-1
 753          KM        DIVERT FLOW FROM CP41-1 TO CP303
 754          DT   5D303
 755          DI       0      10      36      44     489    1300    2348
 756          DQ       0      10      36      44      47      50      52
              *

 757          KK   R41-1
 758          KM        ROUTE REMAINDER FROM CP41-1 TO CP41-2.
 759          RS       1              -1       0
 760          RC     .06     .03     .04    1697   .0075
 761          RX     600     800     900     965    1000    1020    1030    1040
 762          RY    1104    1102    1101    1100    1100    1102    1104    1105
              *

 763          KK    41-2
 764          KM   BASIN 41-2
 765          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 766          KM    L=       .7  Lca=       .3   S=   81.1  Kn= .050  LAG=  16.7
 767          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 768          BA     .10
 769          LG     .35     .35    3.95     .44     .00
 770          UI     31.    101.    169.    216.    133.     70.     30.     13.      6.      0.
 771          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 772          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 773          KK  CP41-2
 774          KM        ADD HYDROGRAPHS AT CP41-2
```

```
775          HC       2     .38
             *

776          KK  SR41-2
777          KM        STORAGE ROUTE THROUGH 2-42" CMP AT STA 6305+22 ON I-10.
778          RS       1    STOR       0       0
779          SV       0     .84    1.23    1.78    2.46    3.31    4.34    5.61    7.63   11.57
780          SV   13.47   15.30   19.63   19.01
781          SQ       0      10      14      18      23      29      35      42      50      56
782          SQ     201     419     469    1836
783          SE  1099.2 1100.45  1100.7 1100.96 1101.23  1101.5 1101.83 1102.17 1102.83  1103.5
784          SE  1103.8    1104  1104.5 1104.95
             *

785          KK   D41-2
786          KM        DIVERT FLOW FROM CP41-2 TO CP303
787          DT   6D303
788          DI       0      10      14      18      23      29      35      42      50      56
789          DI     201     419     469    1836
790          DQ       0      10      14      18      23      29      35      42      50      56
791          DQ      59      61      64      68
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

792          KK   R41-2
793          KM        ROUTE REMAINDER FROM CP41-2 TO CP41.
794          RS       1              -1       0
795          RC     .06     .03     .04     978   .0053
796          RX     650     800     850     965    1000    1020    1030    1040
797          RY    1100    1099    1098    1096    1096    1098    1100    1101
             *

798          KK      41
799          KM   BASIN 41
800          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
801          KM    L=      1.6  Lca=       .8   S=   81.5  Kn= .050  LAG=  34.7
802          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
803          BA     .58
804          LG     .21     .35    4.15     .44     .00
805          UI     56.    108.    238.    309.    382.    496.    699.    562.    450.    357.
806          UI    282.    192.    102.     90.     56.     38.     17.     17.     17.     17.
807          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
808          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

809          KK    CP41
810          KM        ADD HYDROGRAPHS AT CP41
811          HC       2     .68
             *

812          KK    SR41
813          KM        STORAGE ROUTE THROUGH 2-36" CMP AT STA 6315+00 ON I-10.
814          RS       1    STOR       0       0
815          SV       0     .09     .37     .86    2.15    2.99    4.92    5.83    7.92   11.06
816          SV   15.07
817          SQ       0       8      11      15      24      30      36      42      43     400
818          SQ    1219
819          SE  1094.6 1095.91 1096.15 1096.42 1096.99 1097.30 1097.91 1099.12  1099.5  1100.0
820          SE  1100.6
             *

821          KK     D41
822          KM        DIVERT FLOW FROM CP41 TO CP303
823          DT   7D303
824          DI       0       8      11      15      24      30      36      42      43     400
825          DI    1219
826          DQ       0       8      11      15      24      30      36      42      43      46
827          DQ      50
             *

828          KK     R41
829          KM        ROUTE REMAINDER FROM CP41 TO CP43-1.
830          RS       1              -1       0
831          RC     .06     .03     .04     700   .0053
832          RX     650     800     850     965    1000    1020    1030    1040
833          RY    1098    1097    1096    1094    1094    1096    1098    1099
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

834          KK   43-1
835          KM   BASIN 43-1
836          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
837          KM    L=       .4  Lca=       .2   S=   50.0  Kn= .050  LAG=  12.1
838          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
839          BA     .04
840          LG     .35     .35    3.95     .44     .00
841          UI     25.     74.    117.     63.     21.      7.      3.      0.      0.      0.
842          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```

```
843          KK  CP43-1
844          KM        ADD HYDROGRAPHS AT CP43-1
845          HC       2     1.0
             *

846          KK  SR43-1
847          KM        STORAGE ROUTE THROUGH 5-48" CMP FROM STA 6319+32 TO STA 6324+32 ON I-10.
848          RS       1    STOR       0       0
849          SV       0     .37     .80    1.58    2.71    4.54    5.86    7.60   12.33   14.79
850          SV   21.44
851          SQ       0      32      60     102     120     220     260     301     357     501
852          SQ    1057
853          SE  1091.7 1092.82 1093.25 1093.72 1094.21 1094.77 1095.08 1095.43 1096.19  1096.5
854          SE  1097.0
             *

855          KK   D43-1
856          KM        DIVERT FLOW FROM CP43-1 TO CP303A
857          DT  1D303A
858          DI       0      32      60     102     120     220     260     301     357     501
859          DI    1057
860          DQ       0      32      60     102     120     220     260     301     357     378
861          DQ     417
             *

862          KK   R43-1
863          KM        ROUTE REMAINDER FROM CP43-1 TO CP43-2.
864          RS       1              -1       0
865          RC     .06     .03     .04     500    .005
866          RX     600     725     800     965    1000    1020    1030    1040
867          RY    1095    1094  1093.5    1093    1093    1094    1096    1097
             *

868          KK    43-2
869          KM   BASIN 43-2
870          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
871          KM    L=       .3  Lca=       .2   S=   60.0  Kn= .050  LAG=  10.2
872          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
873          BA     .01
874          LG     .35     .35    3.95     .44     .00
875          UI      9.     28.     27.     10.      2.      1.      0.      0.      0.      0.
876          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```



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

877          KK  CP43-2
878          KM        ADD HYDROGRAPHS AT CP43-2
879          HC       2    1.01
             *

880          KK  SR43-2
881          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6326+40 ON I-10.
882          RS       1    STOR       0       0
883          SV       0     .12     .38     .71    1.11    1.61    3.12    3.95    5.19    6.02
884          SQ       0       8      12      15      20      24      36      38     128     222
885          SE    1092 1093.28 1093.52 1093.78 1094.05 1094.35 1095.13  1095.5  1096.0  1096.3
             *

886          KK   D43-2
887          KM        DIVERT FLOW FROM CP43-2 TO CP303A
888          DT  2D303A
889          DI       0       8      12      15      20      24      36      38     128     222
890          DQ       0       8      12      15      20      24      36      38      40      43
             *

891          KK   R43-2
892          KM        ROUTE REMAINDER FROM CP43-2 TO CP43-3.
893          RS       1              -1       0
894          RC     .06     .03     .04    1000    .003
895          RX     750     800     900     965    1000    1020    1030    1040
896          RY  1096.5    1096    1094    1093    1093    1094    1096    1097
             *

897          KK    43-3
898          KM   BASIN 43-3
899          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
900          KM    L=       .2  Lca=       .1   S=   75.0  Kn= .050  LAG=   8.2
901          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
902          BA     .05
903          LG     .35     .35    4.30     .40     .00
904          UI     70.    200.     99.     20.      0.      0.      0.      0.      0.      0.
905          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

906          KK  CP43-3
907          KM        ADD HYDROGRAPHS AT CP43-3.
908          HC       2    1.06
             *

909          KK  SR43-3
910          KM        STORAGE ROUTE THROUGH 3-36" CMPS FROM STA 6330+50 TO STA 6340+10 ON I-10
```

```
911          RS       1    STOR       0       0
912          SV       0    2.47    3.51    4.85    6.37    8.27   10.69   13.89   18.76   30.99
913          SQ       0      27      36      48      63      78      93     165     364     951
914          SE  1092.8 1094.12 1094.37 1094.65 1094.93 1095.24 1095.59    1096 1096.56 1097.79
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

915          KK   D43-3
916          KM        DIVERT FLOW FROM CP43-3 TO CP303A
917          DT  3D303A
918          DI       0      27      36      48      63      78      93     165     364     951
919          DQ       0      27      36      48      63      78      93     102     114     135
             *

920          KK   R43-3
921          KM        ROUTE REMAINDER FROM CP43-3 TO CP43-4.
922          RS       1              -1       0
923          RC     .06     .03     .04     800    .018
924          RX     800     850     930     965    1000    1020    1030    1040
925          RY  1096.5    1096    1094    1093    1093    1096    1097  1097.5
             *

926          KK    43-4
927          KM   BASIN 43-4
928          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
929          KM    L=       .2  Lca=       .1   S=   63.6  Kn= .050  LAG=   8.0
930          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
931          BA     .03
932          LG     .35     .35    4.25     .39     .00
933          UI     43.    121.     55.     11.      0.      0.      0.      0.      0.      0.
934          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

935          KK  CP43-4
936          KM        ADD HYDROGRAPHS AT CP43-4
937          HC       2    1.09
             *

938          KK  SR43-4
939          KM        STORAGE ROUTE THROUGH 2-36" CMPS FROM STA 6343+25 TO STA 6345+65 ON I10
940          RS       1    STOR       0       0
941          SV       0     .89    1.27     1.8    2.43    3.24    3.31    4.75    7.05   12.83
942          SQ       0      18      24      32      42      52      62     131     326     906
943          SE  1092.8 1094.12 1094.37 1094.65 1094.93 1095.24 1095.59    1096 1096.56 1097.79
             *

944          KK   D43-4
945          KM        DIVERT FLOW AT STA 6345+65
946          DT  1DWT#4
947          DI       0      18      24      32      42      52      62     131     326     906
948          DQ       0      18      24      32      42      52      62      68      76      90
             *

949          KK   R43-4
950          KM        ROUTE REMAINDER FROM CP43-4 TO CP43-5
951          RS       1              -1       0
952          RC     .06     .03     .04     500    .018
953          RX     800     850     930     965    1000    1020    1030    1040
954          RY  1096.5    1096    1094    1093    1093    1096    1097  1097.5
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

955          KK    43-5
956          KM   BASIN 43-5
957          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
958          KM    L=       .2  Lca=       .1   S=   54.5  Kn= .050  LAG=   8.2
959          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
960          BA     .02
961          LG     .35     .35    4.60     .31     .00
962          UI     27.     78.     39.      8.      0.      0.      0.      0.      0.      0.
963          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

964          KK  CP43-5
965          KM        ADD HYDROGRAPHS AT CP43-5
966          HC       2    1.11
             *

967          KK  SR43-5
968          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6349+45 ON I-10
969          RS       1    STOR       0       0
970          SV       0     .09     .24     .44     .69     1.0    1.42    2.14    2.76    3.73
971          SV    4.84    5.94
972          SQ       0       9      13      17      22      27      34      40      42      44
973          SQ     134     276
974          SE  1089.8  1091.1 1091.35 1091.64 1091.94 1092.26 1092.62 1093.13  1093.5    1094
975          SE  1094.5 1094.94
             *
```

```
 976          KK   D43-5
 977          KM        DIVERT FLOW AT STA 6349+45.
 978          DT  2DWT#4
 979          DI       0       9      13      17      22      27      34      40      42      44
 980          DI     134     276
 981          DQ       0       9      13      17      22      27      34      40      42      44
 982          DQ      46      48
              *

 983          KK   R43-5
 984          KM        ROUTE REMAINDER FROM CP43-5 TO CP43-6
 985          RS       1              -1       0
 986          RC     .06     .03     .04     455   .0068
 987          RX     800     850     930     965    1000    1020    1030    1040
 988          RY    1096    1094    1093    1092    1092    1094    1096  1097.5
              *

 989          KK    43-6
 990          KM   BASIN 43-6
 991          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 992          KM    L=       .2  Lca=       .1   S=   63.2  Kn= .050  LAG=   7.3
 993          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 994          BA     .02
 995          LG     .35     .35    4.45     .34     .00
 996          UI     34.     86.     29.      5.      0.      0.      0.      0.      0.      0.
 997          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                          HEC-1 INPUT                                          PAGE 26

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

 998          KK  CP43-6
 999          KM        ADD HYDROGRAPHS AT CP43-6
1000          HC       2    1.13
              *

1001          KK  SR43-6
1002          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6354+00 ON I-10
1003          RS       1    STOR       0       0
1004          SV       0    1.59    2.29    3.18    4.29    5.62    7.39    9.53   14.20   30.25
1005          SV   32.52      38   43.84   49.83   55.96   59.96
1006          SQ       0       9      13      17      22      27      33      39      47      55
1007          SQ      56     141     325     811    1440    2714
1008          SE  1089.3  1090.6 1090.84 1091.12 1091.42 1091.73 1092.09 1092.47 1093.23 1095.27
1009          SE  1095.5    1096  1096.5  1097.0  1097.5 1097.82
              *

1010          KK   D43-6
1011          KM        DIVERT FLOW AT STA 6354+00.
1012          DT  3DWT#4
1013          DI       0       9      13      17      22      27      33      39      47      55
1014          DI      56     141     325     811    1440    2714
1015          DQ       0       9      13      17      22      27      33      39      47      55
1016          DQ      56      58      60      61      62      64
              *

1017          KK   R43-6
1018          KM        ROUTE REMAINDER FROM CP43-6 TO CP43-7
1019          RS       1              -1       0
1020          RC     .06     .03     .04     300   .0162
1021          RX     750     800     930     965    1000    1020    1030    1040
1022          RY    1096    1094    1092    1090    1090    1092    1096  1097.5
              *

1023          KK    43-7
1024          KM   BASIN 43-7
1025          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1026          KM    L=       .2  Lca=       .1   S=   75.0  Kn= .050  LAG=   6.1
1027          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1028          BA     .02
1029          LG     .35     .35    4.60     .31     .00
1030          UI     49.     90.     14.      0.      0.      0.      0.      0.      0.      0.
1031          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1032          KK  CP43-7
1033          KM        ADD HYDROGRAPHS AT CP43-7
1034          HC       2    1.15
              *
1                                          HEC-1 INPUT                                          PAGE 27

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

1035          KK  SR43-7
1036          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6357+00 ON I-10
1037          RS       1    STOR       0       0
1038          SV       0     .27     .39     .55     .74     .98    1.30    1.78    2.23    5.12
1039          SQ       0      10      13      18      23      29      35      38     101     892
1040          SE  1087.6 1088.93 1089.20 1089.49 1089.80 1090.13 1090.51  1091.0 1091.39 1093.26
              *

1041          KK   D43-7
1042          KM        DIVERT FLOW AT STA 6357+00.
```

```
1043        DT  4DWT#4
1044        DI       0      10      13      18      23      29      35      38     101     892
1045        DQ       0      10      13      18      23      29      35      38      40      42
            *

1046        KK   R43-7
1047        KM        ROUTE REMAINDER FROM CP43-7 TO CP43-8
1048        RS       1              -1       0
1049        RC     .06     .03     .04     385    .018
1050        RX     700     800     850     965    1000    1020    1030    1040
1051        RY    1094    1093    1092    1090    1090    1092    1096  1097.5
            *

1052        KK    43-8
1053        KM   BASIN 43-8
1054        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1055        KM    L=       .1  Lca=       .1   S=   76.9  Kn= .050  LAG=   5.3
1056        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1057        BA     .01
1058        LG     .35     .35    4.60     .31     .00
1059        UI     34.     39.      4.      0.      0.      0.      0.      0.      0.      0.
1060        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *

1061        KK  CP43-8
1062        KM        ADD HYDROGRAPHS AT CP43-8
1063        HC       2    1.16
            *

1064        KK  SR43-8
1065        KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6360+85 ON I-10
1066        RS       1    STOR       0       0
1067        SV       0     .22     .32     .46     .63     .89    1.74    3.41    4.93     6.3
1068        SV    6.87
1069        SQ       0       8      12      15      20      24      30      36      39     129
1070        SQ     186
1071        SE  1085.1 1086.38 1086.62 1086.88 1087.15 1087.48 1088.28 1089.33  1090.0  1090.5
1072        SE  1090.7
            *
```



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

1073        KK   D43-8
1074        KM        DIVERT FLOW AT STA 6360+85.
1075        DT  5DWT#4
1076        DI       0       8      12      15      20      24      30      36      39     129
1077        DI     186
1078        DQ       0       8      12      15      20      24      30      36      39      41
1079        DQ      43
            *

1080        KK   R43-8
1081        KM        ROUTE REMAINDER FROM CP43-8 TO CP43.
1082        RS       1              -1       0
1083        RC     .06     .03     .04     600    .008
1084        RX     800     850     930     965    1000    1020    1030    1040
1085        RY    1096    1092    1090    1088    1088    1090    1096  1097.5
            *

1086        KK      43
1087        KM   BASIN 43
1088        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1089        KM    L=       .2  Lca=       .1   S=   94.1  Kn= .050  LAG=   6.2
1090        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1091        BA     .01
1092        LG     .35     .35    4.35     .37     .00
1093        UI     24.     45.      8.      0.      0.      0.      0.      0.      0.      0.
1094        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *

1095        KK  I1CP43
1096        KM        ADD HYDROGRAPHS AT CP43
1097        HC       2    1.17
            *

1098        KK    CP43     .03
1099        KM        ADD HYDROGRAPHS AT CP43.
1100        HC       2   13.90
            *

1101        KK    SR43
1102        KM        STORAGE ROUTE THROUGH 4-10X8 BC'S AT STA 6366+85 ON I-10.
1103        RS       1    STOR       0       0
1104        SV       0     .52    4.33   16.22   24.89   28.79   33.09   37.88   42.63   49.69
1105        SV   56.35
1106        SQ       0     920    1824    2976    3396    4770    4375    5215    6275    7575
1107        SQ   11000
1108        SE  1081.2 1085.18 1087.60 1090.19  1091.5  1092.0  1092.5    1093  1093.5    1094
1109        SE  1094.5
            *
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
1110          KK    D43
1111          KM        DIVERT FLOW AT STA 6366+85 ON I-10 (TUTHILL DIKE).
1112          DT  DI45-1
1113          DI       0     920    1824    2976    3396    3713    4176    4734    6464
1114          DQ       0       0       0       0       0     177     500     918    2096
              *

1115          KK    RD43
1116          KM        ROUTE REMAINDER FROM FROM CP43 TO CPWT4.
1117          RS       2              -1       0
1118          RC     .05     .03     .05    4000   .0083
1119          RX     800     900     965    1000    1050    1100    1200    1300
1120          RY    1076    1075    1075    1064    1064    1071    1071    1075
              *

1121          KK   D43-4
1122          KM        RETURN DIVERT AT CP43-4
1123          DR  1DWT#4
              *

1124          KK  RD43-4
1125          KM        ROUTE DIVERTED FLOW FROM CP43-4 TO CPWT4
1126          RS       2              -1       0
1127          RC    .045     .03    .045    4200   .0067
1128          RX     910     940     970     990    1000    1020    1060    1100
1129          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1130          KK   D43-5
1131          KM        RETURN DIVERT AT CP43-5
1132          DR  2DWT#4
              *

1133          KK  RD43-5
1134          KM        ROUTE DIVERTED FLOW FROM CP43-5 TO CPWT4
1135          RS       2              -1       0
1136          RC    .045     .03    .045    4100   .0067
1137          RX     910     940     970     990    1000    1020    1060    1100
1138          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1139          KK  I1CWT4
1140          KM        ADD HYDROGRAPHS AT CPWT4
1141          HC       2     .05
              *

1142          KK   D43-6
1143          KM        RETURN DIVERT AT CP43-6
1144          DR  3DWT#4
              *
```



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

1145          KK  RD43-6
1146          KM        ROUTE DIVERTED FLOW FROM CP43-6 TO CPWT4
1147          RS       2              -1       0
1148          RC    .045     .03    .045    4000   .0067
1149          RX     910     940     970     990    1000    1020    1060    1100
1150          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1151          KK  I2CWT4
1152          KM        ADD HYDROGRAPHS AT CPWT4
1153          HC       2     .07
              *

1154          KK   D43-7
1155          KM        RETURN DIVERT AT CP43-7
1156          DR  4DWT#4
              *

1157          KK  RD43-7
1158          KM        ROUTE DIVERTED FLOW FROM CP43-7 TO CPWT4
1159          RS       2              -1       0
1160          RC    .045     .03    .045    4000   .0067
1161          RX     910     940     970     990    1000    1020    1060    1100
1162          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1163          KK  I3CWT4
1164          KM        ADD HYDROGRAPHS AT CPWT4
1165          HC       2     .09
              *

1166          KK   D43-8
1167          KM        RETURN DIVERT AT CP43-8
1168          DR  5DWT#4
              *

1169          KK  RD43-8
1170          KM        ROUTE DIVERTED FLOW FROM CP43-8 TO CPWT4
```

```
1171          RS       2              -1       0
1172          RC    .045     .03    .045    4000   .0067
1173          RX     910     940     970     990    1000    1020    1060    1100
1174          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1175          KK  I4CWT4
1176          KM        ADD HYDROGRAPHS AT CPWT4
1177          HC       2     .10
              *
              * ***********************************************************************
              * ***THE FOLLOWING SECTION TAKEN FROM NEW SUPER BASIN 24 WITH NEW SOILS*****
              * ***********************************************************************
              *
1                                        HEC-1 INPUT                                          PAGE 31

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


1178          KK      44
1179          KM   BASIN 44
1180          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1181          KM    L=       .8  Lca=       .5   S=   59.2  Kn= .050  LAG=  22.2
1182          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1183          BA     .22
1184          LG     .35     .35    4.40     .36     .00
1185          UI     33.    132.    200.    300.    379.    260.    181.     99.     54.     32.
1186          UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
1187          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1188          KK  I5CWT4
1189          KM        ADD HYDROGRAPHS AT CPWT4
1190          HC       2     .32
              *

1191          KK    CP44
1192          KM        ADD HYDROGRAPHS AT CPWT4.
1193          HC       2   14.12
              *

1194          KK    45-1
1195          KM   BASIN 45-1
1196          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1197          KM    L=       .6  Lca=       .2   S=   84.7  Kn= .050  LAG=  14.7
1198          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1199          BA     .08
1200          LG     .21     .35    4.45     .37     .00
1201          UI     33.    101.    188.    155.     87.     32.     13.      6.      0.      0.
1202          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1203          KK    D43
1204          KM        RETURN DIVERT AT CP43
1205          DR  DI45-1
              *

1206          KK  CP45-1
1207          KM        ADD HYDROGRAPHS AT CP45-1
1208          HC       2   13.98
              *

1209          KK  SR45-1
1210          KM        STORAGE ROUTE THROUGH 1-12X12 BC, 2-42" CMP AND 3-36" CMP FROM STA. 6368
1211          KM        +00 TO STA. 6375+20 ON I-10 (100' TO 800' EAST OF TUTHILL RD.).
1212          RS       1    STOR       0       0
1213          SV       0     .85    2.23    5.73   11.22   14.61   19.71
1214          SQ       0      51     156    1200    3130    4161    5509
1215          SE  1083.1 1084.78    1086  1087.4  1089.0  1089.5  1090.0
              *
1                                        HEC-1 INPUT                                          PAGE 32

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


1216          KK   D45-1
1217          KM        DIVERT FLOW AT STA 6375+20
1218          DT  7DWT#4
1219          DI       0      51     156    1200    3130    4161    5509
1220          DQ       0      51     156     305     480     543     610
              *

1221          KK   R45-1
1222          KM        ROUTE REMAINDER FROM CP45-1 TO CP45
1223          RS       1              -1       0
1224          RC     .04     .03     .04    1200   .0042
1225          RX     850     900     930     965    1000    1020    1030    1040
1226          RY    1086    1085    1084    1083    1083    1086    1090    1091
              *

1227          KK      45
1228          KM   BASIN 45
1229          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1230          KM    L=       .1  Lca=       .8   S= 1110.0  Kn= .050  LAG=   7.3
1231          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
1232          BA     .38
1233          LG     .17     .35    4.70     .31     .00
1234          UI    647.   1636.    554.     86.      0.      0.      0.      0.      0.      0.
1235          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1236          KK    CP45
1237          KM        ADD HYDROGRAPHS AT CP45
1238          HC       2   14.36
              *

1239          KK    SR45
1240          KM        STORAGE ROUTE THROUGH 9-36" CMP'S FROM STA 6379+84 TO STA 6390+50 ON
1241          KM        I-10.
1242          RS       1    STOR       0       0
1243          SV       0    1.84    5.95   18.55   23.27   29.04    30.0
1244          SQ       0      41     132     317    1462    3517  3900.0
1245          SE  1081.1 1082.74  1084.0  1086.0  1086.5  1087.0  1088.5
              *

1246          KK     D45
1247          KM        DIVERT FLOW AT STA 6390+50.
1248          DT  8DWT#4
1249          DI       0      41     132     317    1462    3517
1250          DQ       0      41     132     317     362     392
              *

1251          KK     R45
1252          KM        ROUTE REMAINDER FROM CP45 TO CP46-1.
1253          RS       1              -1       0
1254          RC     .04     .03     .04    1500   .0031
1255          RX     850     900     930     965    1000    1020    1030    1040
1256          RY    1086    1082    1081    1080    1080    1082    1083    1086
              *
```



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

1257          KK    46-1
1258          KM   BASIN 46-1
1259          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1260          KM    L=      1.2  Lca=       .5   S=   61.9  Kn= .050  LAG=  27.1
1261          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1262          BA     .15
1263          LG     .19     .35    4.00     .47     .00
1264          UI     19.     51.    108.    152.    175.    169.    134.     97.     71.     51.
1265          UI     37.     27.     20.     13.     11.      5.      5.      5.      5.      0.
1266          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1267          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1268          KK  CP46-1
1269          KM        ADD HYDROGRAPHS AT CP46-1
1270          HC       2   14.51
              *

1271          KK  SR46-1
1272          KM        STORAGE ROUTE THROUGH 5-36 CMP'S FROM STA 6395+75 TO STA 6400+60 ON
1273          KM        I-10.
1274          RS       1    STOR       0       0
1275          SV       0    1.07    4.71     9.0    11.7   14.88   18.65   23.01
1276          SQ       0      39     128     183     199     610    1351    5000
1277          SE  1078.3    1080  1081.5  1082.5  1083.0  1083.5  1084.0  1084.5
              *

1278          KK   D46-1
1279          KM        DIVERT FLOW AT STA 6400+60.
1280          DT  9DWT#4
1281          DI       0      39     128     183     199     610    1351    2310
1282          DQ       0      39     128     183     199     210     225     244
              *

1283          KK   R46-1
1284          KM        ROUTE REMAINDER FROM CP46-1 TO CP46.
1285          RS       1              -1       0
1286          RC     .04     .03     .04    2355   .0057
1287          RX     700     900     930     965    1000    1020    1030    1040
1288          RY    1076  1075.5    1075    1074    1074    1078    1080    1082
              *

1289          KK      46
1290          KM   BASIN 46
1291          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1292          KM    L=      2.4  Lca=      1.1   S=   59.3  Kn= .050  LAG=  47.9
1293          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1294          BA     .85
1295          LG     .19     .35    4.15     .44     .00
1296          UI     60.     60.    151.    258.    355.    439.    514.    556.    573.    554.
1297          UI    514.    430.    355.    299.    249.    208.    173.    142.    118.    101.
1298          UI     88.     63.     62.     41.     41.     41.     19.     15.     15.     15.
1299          UI     15.     15.     15.     15.     15.      0.      0.      0.      0.      0.
1300          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1301          KK  I1CP46
1302          KM        ADD HYDROGRAPHS AT CP46
1303          HC       2   15.36
              *

1304          KK      28
1305          KM   BASIN 28
1306          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1307          KM    L=      1.7  Lca=       .9   S=   64.2  Kn= .050  LAG=  38.1
1308          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1309          BA     .86
1310          LG     .15     .35    4.10     .46     .00
1311          UI     76.    119.    295.    391.    469.    578.    795.    931.    712.    588.
1312          UI    474.    382.    273.    154.    127.     90.     76.     25.     23.     23.
1313          UI     23.     23.      0.      0.      0.      0.      0.      0.      0.      0.
1314          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1315          KK     R28
1316          KM        ROUTE FLOW FROM CP28 TO CP30
1317          RS       2              -1
1318          RC     .03     .03     .05    2400    .027
1319          RX    1000    1001    1035    1050    1065    1075    1085    1095
1320          RY    1165    1165    1164    1162    1162    1164    1166    1168
              *

1321          KK      30
1322          KM   BASIN 30
1323          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1324          KM    L=      1.1  Lca=       .5   S=   60.9  Kn= .050  LAG=  26.3
1325          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1326          BA     .28
1327          LG     .15     .35    3.95     .49   32.00
1328          UI     36.    104.    215.    301.    340.    320.    243.    175.    125.     89.
1329          UI     64.     46.     33.     25.     15.      9.      9.      9.      9.      0.
1330          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1331          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1332          KK  I1CP30
1333          KM        ADD HYDROGRAPHS AT CP30
1334          HC       2
              *

1335          KK      29
1336          KM   BASIN 29
1337          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1338          KM    L=       .9  Lca=       .4   S=   55.6  Kn= .050  LAG=  23.8
1339          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1340          BA     .22
1341          LG     .15     .35    3.95     .49     .00
1342          UI     31.    113.    176.    245.    370.    276.    199.    135.     64.     42.
1343          UI     23.     10.     10.     10.      0.      0.      0.      0.      0.      0.
1344          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
```



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

1345          KK    SR29
1346          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP29
1347          RS       1    STOR       0       0
1348          SV       0    0.99   12.73   23.45   36.25   50.68   54.76   59.33   83.20
1349          SQ       0       0       0       0       0       0       0      88    6226
1350          SE  1164.5    1166    1170    1172    1174    1176  1177.5    1178    1180
              *

1351          KK     R29
1352          KM        ROUTE REMAINDER OF FLOW AT CP29 TO CP30
1353          RS       1              -1       0
1354          RC     .05     .03     .05    1200   .0021
1355          RX    1000    1042    1052    1060    1082    1090    1140    1170
1356          RY    1171    1170    1168    1166    1166    1168    1170    1172
              *

1357          KK    CP30
1358          KM        ADD HYDROGRAPHS AT CP30
1359          HC       2
              *

1360          KK     R30
1361          KM        ROUTE COMBINED HYDROGRAPHS AT CP30 TO CP31
1362          RS       4              -1       0
1363          RC     .03     .03     .05    6770   .0069
1364          RX    1000    1025    1045    1070    1095    1110    1200    1550
1365          RY    1157    1156    1154    1152    1152    1154    1156    1158
              *

1366          KK      31
1367          KM   BASIN 31
```

```
1368          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1369          KM    L=      1.8  Lca=       .9   S=   56.7  Kn= .050  LAG=  39.8
1370          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1371          BA     .71
1372          LG     .19     .35    4.00     .47     .00
1373          UI     60.     83.    223.    299.    358.    434.    565.    751.    612.    500.
1374          UI    412.    335.    268.    171.    105.     97.     60.     52.     18.     18.
1375          UI     18.     18.     18.      0.      0.      0.      0.      0.      0.      0.
1376          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1377          KK    CP31
1378          KM       ADD HYDROGRAPHS AT CP31
1379          HC       2
              *

1380          KK     R31
1381          KM       ROUTE COMBINED HYDROGRAPH AT CP31 TO CP46
1382          RS       5              -1       0
1383          RC     .03     .03     .05    5800   .0082
1384          RX    1000    1012    1024    1035    1045    1053    1065    1098
1385          RY    1093    1092    1090    1088    1088    1090    1092    1094
              *
1                                          HEC-1 INPUT                                          PAGE 36

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

1386          KK    CP46
1387          KM       ADD HYDROGRAPHS AT CP46.
1388          HC       2   17.43
              *

1389          KK    SR46
1390          KM       STORAGE ROUTE THROUGH 5-10'X4' BC'S AT STA 6419+30 ON I-10.
1391          RS       1    STOR       0       0
1392          SV       0    1.08    3.13    4.28    5.18    7.54   12.96
1393          SQ       0     730    1460    1680    1834    2090    2420
1394          SE  1065.4 1068.42 1070.53  1071.4  1072.0  1073.0  1074.3
              *

1395          KK     R46
1396          KM       ROUTE REMAINDER OF FLOW AT CP46 TO CPWT4
1397          RS       2              -1       0
1398          RC     .03     .03     .05    6800   .0067
1399          RX     910     930     940     950    1000    1020    1200    1400
1400          RY    1065    1064    1064    1060    1060    1064    1064    1065
              *

1401          KK   D45-1
1402          KM       RETURN DIVERT AT  CP45-1
1403          DR  7DWT#4
              *

1404          KK  RD45-1
1405          KM       ROUTE DIVERTED FLOW FROM CP45-1 TO CPWT4
1406          RS       2              -1       0
1407          RC    .045     .03    .045    4100   .0067
1408          RX     910     940     970     990    1000    1020    1060    1100
1409          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1410          KK     D45
1411          KM       RETURN DIVERT AT CP45
1412          DR  8DWT#4
              *

1413          KK    RD45
1414          KM       ROUTE DIVERTED FLOW FROM  CP45  TO CPWT4.
1415          RS       2              -1       0
1416          RC    .045     .03    .045    4200   .0067
1417          RX     910     940     970     990    1000    1020    1060    1100
1418          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1419          KK  I7CWT4
1420          KM       ADD HYDROGRAPHS AT CPWT4
1421          HC       2   14.36
              *
1                                          HEC-1 INPUT                                          PAGE 37

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

1422          KK   D46-1
1423          KM       RETURN DIVERT AT CP46-1
1424          DR  9DWT#4
              *

1425          KK  RD46-1
1426          KM       ROUTE DIVERTED FLOW FROM CP46-1 TO CPWT4
1427          RS       3              -1       0
1428          RC    .045     .03    .045    4900   .0067
1429          RX     910     940     970     990    1000    1020    1060    1100
1430          RY    1064    1063    1062    1060    1060    1062    1063    1064
```

```
                 *

1431             KK  I8CWT4
1432             KM        ADD HYDROGRAPHS AT CPWT4
1433             HC       2   14.51
                 *

1434             KK     WT4
1435             KM   BASIN WT4
1436             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1437             KM    L=        .9  Lca=        .5   S=   54.9  Kn= .050  LAG=  24.2
1438             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1439             BA     .77
1440             LG     .35     .35    4.20     .40     .00
1441             UI    107.    378.    598.    822.   1269.    977.    711.    497.    239.    156.
1442             UI     94.     33.     33.     33.      0.      0.      0.      0.      0.      0.
1443             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *

1444             KK  I9CWT4
1445             KM        ADD HYDROGRAPHS AT CPWT4
1446             HC       2   15.28
                 *

1447             KK  I10WT4
1448             KM        ADD HYDROGRAPHS AT CPWT4
1449             HC       2    18.2

1450             KK   CPWT4
                 *
                 * KO     3
1451             KM        ADD ENTIRE FLOW TOGETHER THAT GETS TO WHITE TANKS STRUCTURE NO 4.
1452             HC       2   18.57
                 *

1453             KK    RS47
1454             KM        STORAGE ROUTE TROUGH WHITE TANKS STRUCTURE NO. 4.
1455             RS       1    STOR       0       0
1456             SV       0    2.81      51     148     277     543    1269    1396    1690    2045
1457             SV    2246
1458             SQ       0       0       0       0       0       0       0     375    2600    6150
1459             SQ   14700
1460             SE     997    1000    1010    1020    1030    1040    1049    1050    1052    1054
```



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

1461             SE    1055
                 *
                 * ************************************************************************
                 * ***THE FOLLOWING SECTION TAKEN FROM NEW SUPER BASIN 25 WITH NEW SOILS*****
                 * ************************************************************************
                 *

1462             KK   D43-1
1463             KM        RETURN DIVERT AT CP43-1
1464             DR  1D303A

1465             KK   R43-1
1466             KM        ROUTE REMAINDER FROM CP43-1 TO CP303A
1467             RS      48              -1       0
1468             RC    .035    .035    .035    5300   .0091
1469             RX    1000    1090    1170    1250    1380    1400    1450    1630
1470             RY    1077  1075.8  1076.5    1076    1076  1076.5    1076    1077

1471             KK   D43-2
1472             KM        RETURN DIVERT AT CP43-2
1473             DR  2D303A

1474             KK   R43-2
1475             KM        ROUTE REMAINDER FROM CP43-2 TO CP303A
1476             RS       8              -1       0
1477             RC    .035    .035    .035    5300   .0091
1478             RX    1000    1090    1170    1250    1380    1400    1450    1630
1479             RY    1077  1075.8  1076.5    1076    1076  1076.5    1076    1077

1480             KK   D43-3
1481             KM        RETURN DIVERT AT CP43-3
1482             DR  3D303A

1483             KK   R43-3
1484             KM        ROUTE REMAINDER FROM CP43-3 TO CP303A
1485             RS      13              -1       0
1486             RC    .035    .035    .035    4840   .0091
1487             RX    1000    1170    1240    1270    1440    1470    1490    1550
1488             RY    1069    1068  1068.5    1068    1068  1068.5  1067.8  1068.5
                 *

1489             KK    303A
1490             KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 303A
1491             BA     .42
1492             LG     .35     .35    4.15     .40     .10
1493             UI     56.    182.    299.    400.    629.    559.    409.    297.    178.     95.
1494             UI     63.     32.     17.     17.     17.      0.      0.      0.      0.      0.
1495             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

```
1496          KK  1C303A
1497          KM        ADD HYDROGRAPHS AT CP303A
1498          HC       4    1.06
```



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

1499          KK  CP303A
1500          KM        ADD HYDROGRAPHS AT CP303A
1501          HC       2   1.48
              *

1502          KK   D41A1
1503          KM        RETURN DIVERT AT CP41A1
1504          DR   1D303
              *

1505          KK   R41A1
1506          KM        ROUTE FLOW FROM CP41A1 TO CP303
1507          RS      18              -1       0
1508          RC    .035    .035    .035    7180    .014
1509          RX    1000    1210    1450    1530    1620    1690    1849    1850
1510          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1511          KK   D41A2
1512          KM        RETURN DIVERT AT CP41A2
1513          DR   2D303
              *

1514          KK   R41A2
1515          KM        ROUTE FLOW FROM CP41A2 TO CP303
1516          RS      19              -1       0
1517          RC    .035    .035    .035    7330    .014
1518          RX    1000    1210    1450    1530    1620    1690    1849    1850
1519          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1520          KK   1I303
1521          KM        ADD HYDROGRAPHS AT CP303
1522          HC       2     .05
              *

1523          KK   D41A3
1524          KM        RETURN DIVERT AT CP41A3
1525          DR   3D303
              *

1526          KK   R41A3
1527          KM        ROUTE FLOW FROM CP41A3 TO CP303
1528          RS      25              -1       0
1529          RC    .035    .035    .035    9360    .010
1530          RX    1000    1210    1450    1530    1620    1690    1849    1850
1531          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *
```



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

1532          KK   2I303
1533          KM        ADD HYDROGRAPHS AT CP303
1534          HC       2     .08
              *

1535          KK    D41A
1536          KM        RETURN DIVERT AT CP41A
1537          DR   4D303
              *

1538          KK    R41A
1539          KM        ROUTE FLOW FROM CP41A TO CP303
1540          RS      26              -1       0
1541          RC    .035    .035    .035    9360   .0095
1542          RX    1000    1210    1450    1530    1620    1690    1849    1850
1543          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1544          KK   3I303
1545          KM        ADD HYDROGRAPHS AT CP303
1546          HC       2     .13
              *

1547          KK   D41-1
1548          KM        RETURN DIVERT AT CP41-1
1549          DR   5D303
              *

1550          KK   R41-1
1551          KM        ROUTE FLOW FROM CP41-1 TO CP303
1552          RS      28              -1       0
1553          RC    .035    .035    .035    9200   .0079
1554          RX    1000    1300    1510    1660    1850    1890    1940    2100
```

```
1555          RY  1080.5    1079  1080.5    1080    1080    1081  1080.5    1081
              *

1556          KK   4I303
1557          KM        ADD HYDROGRAPHS AT CP303
1558          HC       2     .28
              *

1559          KK   D41-2
1560          KM        RETURN DIVERT AT CP41-2
1561          DR   6D303
              *

1562          KK   R41-2
1563          KM        ROUTE FLOW FROM CP41-2 TO CP303
1564          RS      33              -1       0
1565          RC    .035    .035    .035    9360   .0065
1566          RX    1000    1300    1510    1660    1850    1890    1940    2100
1567          RY  1080.5    1079  1080.5    1080    1080    1081  1080.5    1081
              *
```



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

1568          KK   5I303
1569          KM        ADD HYDROGRAPHS AT CP303
1570          HC       2     .38
              *

1571          KK     D41
1572          KM        RETURN DIVERT AT CP41
1573          DR   7D303
              *

1574          KK     R41
1575          KM        ROUTE FLOW FROM CP41 TO CP303
1576          RS      30              -1       0
1577          RC    .035    .035    .035    9830   .0056
1578          RX    1000    1300    1510    1660    1850    1890    1940    2100
1579          RY  1080.5    1079  1080.5    1080    1080    1081  1080.5    1081
              *

1580          KK   6I303
1581          KM        ADD HYDROGRAPHS AT CP303
1582          HC       2     .96
              *

1583          KK     303
1584          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 303
1585          BA     .91
1586          IN      15
1587          LG     .35     .35    4.40     .37     .00
1588          UI     59.     59.    145.    237.    294.    337.    388.    452.    566.    748.
1589          UI    670.    551.    480.    411.    354.    297.    247.    166.    105.     99.
1590          UI     84.     59.     59.     19.     18.     18.     18.     18.     18.     18.
1591          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1592          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1593          KK   CP303
1594          KM        ADD HYDROGRAPHS AT CP303
1595          HC       2    2.17
              *
1596          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   77          4
               .
               .
   84          .           5
               .           .
               .           .
   91        CP5............
               V
               V
   94       RCP5
               .
               .
  100          .           6
               .           .
               .           .
  106        CP6............
               V
               V
  109       RCP6
               .
               .
  115          .           7
               .           .
```

```
                .          .
121          CP7............
               V
               V
124         RCP7
                .
                .
130             .          9
                .          .
                .          .
137       I1CP9............
                .
                .
140             .         14
                .          V
                .          V
147             .       RCP14
                .          .
                .          .
153             .          .         15
                .          .          .
                .          .          .
161             .     I1CP15............
                .          .
                .          .
164             .          .         16
                .          .          V
                .          .          V
172             .          .       SR16
                .          .          .
                .          .          .
178             .       CP15............
                .          V
                .          V
181             .       RCP15
                .          .
                .          .
187             .          .         18
                .          .          V
                .          .          V
199             .          .        R18
                .          .          .
                .          .          .
205             .          .          .          19
                .          .          .           .
                .          .          .           .
215             .          .       CP19............
                .          .          V
                .          .          V
218             .          .        R19
                .          .          .
                .          .          .
224             .          .          .          21
                .          .          .           .
                .          .          .           .
234             .          .     I1CP21............
                .          .          .
                .          .          .
237             .          .          .          20
                .          .          .           V
                .          .          .           V
247             .          .          .        SR20
                .          .          .           V
                .          .          .           V
256             .          .          .         R20
                .          .          .           .
                .          .          .           .
262             .          .       CP21............
                .          .          V
                .          .          V
265             .          .       SR21
                .          .          V
                .          .          V
271             .          .        R21
                .          .          .
                .          .          .
277             .          .          .          23
                .          .          .           .
                .          .          .           .
286             .          .       CP23............
                .          .          V
                .          .          V
289             .          .       SR23
                .          .          V
                .          .          V
298             .          .        R23
                .          .          .
                .          .          .
304             .          .          .          22
                .          .          .           V
                .          .          .           V
314             .          .          .         R22
                .          .          .           .
                .          .          .           .
320             .          .          .           .
```

```
                .         .         .         .         .
                .         .         .         .         .
330             .         .         .   I1C22A............
                .         .         .         .
                .         .         .         .
333             .         .   CP22A............
                .         .       V
                .         .       V
336             .         .   R22A
                .         .       .
                .         .       .
342             .         .       .        25
                .         .       .         .
                .         .       .         .
352             .         .I1CP25............
                .         .       .
                .         .       .
355             .         .       .        24
                .         .       .         V
                .         .       .         V
365             .         .       .      SR24
                .         .       .         V
                .         .       .         V
371             .         .       .       R24
                .         .       .         .
                .         .       .         .
377             .         .   CP25............
                .         .       V
                .         .       V
380             .         .   SR25
                .         .       .
                .         .       .
386             .         .       .        26
                .         .       .         V
                .         .       .         V
397             .         .       .       R26
                .         .       .         .
                .         .       .         .
403             .         .       .         .         27
                .         .       .         .          .
                .         .       .         .          .
414             .         .       .   I1CP27............
                .         .       .         V
                .         .       .         V
417             .         .       .      SR27
                .         .       .         .
                .         .       .         .
423             .         .   CP27............
                .         .       V
                .         .       V
426             .         .   R27
                .         .       .
                .         .       .
432             .         .       .        34
                .         .       .         .
                .         .       .         .
442             .         .       .         .         33
                .         .       .         .          .
                .         .       .         .          .
452             .         .       .      CP33............
                .         .       .         V
                .         .       .         V
455             .         .       .       R33
                .         .       .         .
                .         .       .         .
461             .         .       .         .         35
                .         .       .         .          .
                .         .       .         .          .
471             .         .       .   I1CP35............
                .         .       .         .
                .         .       .         .
474             .         .       .         .         32
                .         .       .         .          .
                .         .       .         .          .
485             .         .       .      CP35............
                .         .       .         V
                .         .       .         V
488             .         .       .       R35
                .         .       .         .
                .         .       .         .
494             .         .       .         .         36
                .         .       .         .          .
                .         .       .         .          .
504             .         .       .   I1CP36............
                .         .       .         .
                .         .       .         .
507             .         .       .         .         37
                .         .       .         .          .
                .         .       .         .          .
518             .         .       .      CP36............
                .         .       .         V
                .         .       .         V
521             .         .       .       R36
                .         .       .         .
                .         .       .         .
```

```
527                                                  38
537                                        CP38............
                                              V
                                              V
540                                        SR38
                                              V
                                              V
546                                         R38
552                                                  39
563                                     I1CP39............
566                                CP39............
                                      V
                                      V
569                                 R39
575                                          40
                                              V
                                              V
585                                         R40
591                                                  42
602                                     I1CP42............
605                                CP42............
                                      V
                                      V
608                                SR42
                                      V
                                      V
614                                 R42
620                                        41A1
                                              V
                                              V
629                                     SR41A1
637                                            -------->   1D303
635                                     CP41A1
                                              V
                                              V
640                                      R41A1
646                                                 41A2
655                                     CP41A2............
                                              V
                                              V
658                                     SR41A2
666                                            -------->   2D303
664                                      D41A2
                                              V
                                              V
669                                      R41A2
675                                                 41A3
684                                     CP41A3............
                                              V
                                              V
687                                     SR41A3
695                                            -------->   3D303
693                                      D41A3
                                              V
                                              V
698                                      R41A3
704                                                  41A
713                                      CP41A............
                                              V
```

```
                 .         .         .          V
716              .         .         .       SR41A
                 .         .         .          .
                 .         .         .          .
724              .         .         .          .-------->   4D303
722              .         .         .        D41A
                 .         .         .          V
                 .         .         .          V
727              .         .         .        R41A
                 .         .         .          .
                 .         .         .          .
733              .         .         .          .        41-1
                 .         .         .          .           .
                 .         .         .          .           .
743              .         .         .      CP41-1............
                 .         .         .          V
                 .         .         .          V
746              .         .         .      SR41-1
                 .         .         .          .
                 .         .         .          .
754              .         .         .          .-------->   5D303
752              .         .         .       D41-1
                 .         .         .          V
                 .         .         .          V
757              .         .         .       R41-1
                 .         .         .          .
                 .         .         .          .
763              .         .         .          .        41-2
                 .         .         .          .           .
                 .         .         .          .           .
773              .         .         .      CP41-2............
                 .         .         .          V
                 .         .         .          V
776              .         .         .      SR41-2
                 .         .         .          .
                 .         .         .          .
787              .         .         .          .-------->   6D303
785              .         .         .       D41-2
                 .         .         .          V
                 .         .         .          V
792              .         .         .       R41-2
                 .         .         .          .
                 .         .         .          .
798              .         .         .          .          41
                 .         .         .          .           .
                 .         .         .          .           .
809              .         .         .        CP41............
                 .         .         .          V
                 .         .         .          V
812              .         .         .        SR41
                 .         .         .          .
                 .         .         .          .
823              .         .         .          .-------->   7D303
821              .         .         .         D41
                 .         .         .          V
                 .         .         .          V
828              .         .         .         R41
                 .         .         .          .
                 .         .         .          .
834              .         .         .          .        43-1
                 .         .         .          .           .
                 .         .         .          .           .
843              .         .         .      CP43-1............
                 .         .         .          V
                 .         .         .          V
846              .         .         .      SR43-1
                 .         .         .          .
                 .         .         .          .
857              .         .         .          .-------->  1D303A
855              .         .         .       D43-1
                 .         .         .          V
                 .         .         .          V
862              .         .         .       R43-1
                 .         .         .          .
                 .         .         .          .
868              .         .         .          .        43-2
                 .         .         .          .           .
                 .         .         .          .           .
877              .         .         .      CP43-2............
                 .         .         .          V
                 .         .         .          V
880              .         .         .      SR43-2
                 .         .         .          .
                 .         .         .          .
888              .         .         .          .-------->  2D303A
886              .         .         .       D43-2
                 .         .         .          V
                 .         .         .          V
891              .         .         .       R43-2
                 .         .         .          .
                 .         .         .          .
897              .         .         .          .        43-3
                 .         .         .          .           .
                 .         .         .          .           .
906              .         .         .      CP43-3............
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                 .         .         .         V
                 .         .         .         V
909              .         .         .     SR43-3
                 .         .         .         .
                 .         .         .         .
917              .         .         .         .-------> 3D303A
915              .         .         .      D43-3
                 .         .         .         V
                 .         .         .         V
920              .         .         .      R43-3
                 .         .         .         .
                 .         .         .         .
926              .         .         .         .        43-4
                 .         .         .         .          .
                 .         .         .         .          .
935              .         .         .     CP43-4............
                 .         .         .         V
                 .         .         .         V
938              .         .         .     SR43-4
                 .         .         .         .
                 .         .         .         .
946              .         .         .         .-------> 1DWT#4
944              .         .         .      D43-4
                 .         .         .         V
                 .         .         .         V
949              .         .         .      R43-4
                 .         .         .         .
                 .         .         .         .
955              .         .         .         .        43-5
                 .         .         .         .          .
                 .         .         .         .          .
964              .         .         .     CP43-5............
                 .         .         .         V
                 .         .         .         V
967              .         .         .     SR43-5
                 .         .         .         .
                 .         .         .         .
978              .         .         .         .-------> 2DWT#4
976              .         .         .      D43-5
                 .         .         .         V
                 .         .         .         V
983              .         .         .      R43-5
                 .         .         .         .
                 .         .         .         .
989              .         .         .         .        43-6
                 .         .         .         .          .
                 .         .         .         .          .
998              .         .         .     CP43-6............
                 .         .         .         V
                 .         .         .         V
1001             .         .         .     SR43-6
                 .         .         .         .
                 .         .         .         .
1012             .         .         .         .-------> 3DWT#4
1010             .         .         .      D43-6
                 .         .         .         V
                 .         .         .         V
1017             .         .         .      R43-6
                 .         .         .         .
                 .         .         .         .
1023             .         .         .         .        43-7
                 .         .         .         .          .
                 .         .         .         .          .
1032             .         .         .     CP43-7............
                 .         .         .         V
                 .         .         .         V
1035             .         .         .     SR43-7
                 .         .         .         .
                 .         .         .         .
1043             .         .         .         .-------> 4DWT#4
1041             .         .         .      D43-7
                 .         .         .         V
                 .         .         .         V
1046             .         .         .      R43-7
                 .         .         .         .
                 .         .         .         .
1052             .         .         .         .        43-8
                 .         .         .         .          .
                 .         .         .         .          .
1061             .         .         .     CP43-8............
                 .         .         .         V
                 .         .         .         V
1064             .         .         .     SR43-8
                 .         .         .         .
                 .         .         .         .
1075             .         .         .         .-------> 5DWT#4
1073             .         .         .      D43-8
                 .         .         .         V
                 .         .         .         V
1080             .         .         .      R43-8
                 .         .         .         .
                 .         .         .         .
1086             .         .         .         .          43
                 .         .         .         .           .
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1095                    .           .           .       I1CP43............
                        .           .           .           .
                        .           .           .           .
1098                    .           .       CP43............
                        .           .           V
                        .           .           V
1101                    .           .       SR43
                        .           .           .
                        .           .           .
1112                    .           .           .-------> DI45-1
1110                    .           .       D43
                        .           .           V
                        .           .           V
1115                    .           .       RD43
                        .           .           .
                        .           .           .
1123                    .           .           .           .<-------  1DWT#4
1121                    .           .           .      D43-4
                        .           .           .           V
                        .           .           .           V
1124                    .           .           .      RD43-4
                        .           .           .           .
                        .           .           .           .
1132                    .           .           .           .           .<-------  2DWT#4
1130                    .           .           .           .       D43-5
                        .           .           .           .           V
                        .           .           .           .           V
1133                    .           .           .           .      RD43-5
                        .           .           .           .           .
                        .           .           .           .           .
1139                    .           .           .      I1CWT4............
                        .           .           .           .
                        .           .           .           .
1144                    .           .           .           .           .<-------  3DWT#4
1142                    .           .           .           .       D43-6
                        .           .           .           .           V
                        .           .           .           .           V
1145                    .           .           .           .      RD43-6
                        .           .           .           .           .
                        .           .           .           .           .
1151                    .           .           .      I2CWT4............
                        .           .           .           .
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1156                    .           .           .           .           .<-------  4DWT#4
1154                    .           .           .           .       D43-7
                        .           .           .           .           V
                        .           .           .           .           V
1157                    .           .           .           .      RD43-7
                        .           .           .           .           .
                        .           .           .           .           .
1163                    .           .           .      I3CWT4............
                        .           .           .           .
                        .           .           .           .
1168                    .           .           .           .           .<-------  5DWT#4
1166                    .           .           .           .       D43-8
                        .           .           .           .           V
                        .           .           .           .           V
1169                    .           .           .           .      RD43-8
                        .           .           .           .           .
                        .           .           .           .           .
1175                    .           .           .      I4CWT4............
                        .           .           .           .
                        .           .           .           .
1178                    .           .           .           .          44
                        .           .           .           .           .
                        .           .           .           .           .
1188                    .           .           .      I5CWT4............
                        .           .           .           .
                        .           .           .           .
1191                    .           .       CP44............
                        .           .           .
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1194                    .           .           .        45-1
                        .           .           .           .
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1205                    .           .           .           .           .<-------  DI45-1
1203                    .           .           .           .        D43
                        .           .           .           .           .
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1206                    .           .           .      CP45-1............
                        .           .           .           V
                        .           .           .           V
1209                    .           .           .      SR45-1
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                        .           .           .           .
1218                    .           .           .           .-------> 7DWT#4
1216                    .           .           .      D45-1
                        .           .           .           V
                        .           .           .           V
1221                    .           .           .      R45-1
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1227                    .           .           .           .          45
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1236          .         .         .       CP45............
              .         .         .          V
              .         .         .          V
1239          .         .         .       SR45
              .         .         .          .
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1248          .         .         .          .-------> 8DWT#4
1246          .         .         .        D45
              .         .         .          V
              .         .         .          V
1251          .         .         .        R45
              .         .         .          .
              .         .         .          .
1257          .         .         .          .        46-1
              .         .         .          .          .
              .         .         .          .          .
1268          .         .         .     CP46-1...........
              .         .         .          V
              .         .         .          V
1271          .         .         .     SR46-1
              .         .         .          .
              .         .         .          .
1280          .         .         .          .-------> 9DWT#4
1278          .         .         .      D46-1
              .         .         .          V
              .         .         .          V
1283          .         .         .      R46-1
              .         .         .          .
              .         .         .          .
1289          .         .         .          .          46
              .         .         .          .           .
              .         .         .          .           .
1301          .         .         .     I1CP46...........
              .         .         .          .
              .         .         .          .
1304          .         .         .          .          28
              .         .         .          .           V
              .         .         .          .           V
1315          .         .         .          .         R28
              .         .         .          .           .
              .         .         .          .           .
1321          .         .         .          .           .          30
              .         .         .          .           .           .
              .         .         .          .           .           .
1332          .         .         .          .     I1CP30...........
              .         .         .          .           .
              .         .         .          .           .
1335          .         .         .          .           .          29
              .         .         .          .           .           V
              .         .         .          .           .           V
1345          .         .         .          .           .        SR29
              .         .         .          .           .           V
              .         .         .          .           .           V
1351          .         .         .          .           .         R29
              .         .         .          .           .           .
              .         .         .          .           .           .
1357          .         .         .          .        CP30...........
              .         .         .          .           V
              .         .         .          .           V
1360          .         .         .          .         R30
              .         .         .          .           .
              .         .         .          .           .
1366          .         .         .          .           .          31
              .         .         .          .           .           .
              .         .         .          .           .           .
1377          .         .         .          .        CP31...........
              .         .         .          .           V
              .         .         .          .           V
1380          .         .         .          .         R31
              .         .         .          .           .
              .         .         .          .           .
1386          .         .         .       CP46...........
              .         .         .          V
              .         .         .          V
1389          .         .         .       SR46
              .         .         .          V
              .         .         .          V
1395          .         .         .       R46
              .         .         .          .
              .         .         .          .
1403          .         .         .          .           .<-------  7DWT#4
1401          .         .         .          .      D45-1
              .         .         .          .           V
              .         .         .          .           V
1404          .         .         .          .     RD45-1
              .         .         .          .           .
              .         .         .          .           .
1412          .         .         .          .           .           .<-------  8DWT#4
1410          .         .         .          .           .        D45
              .         .         .          .           .           V
              .         .         .          .           .           V
1413          .         .         .          .           .       RD45
              .         .         .          .           .           .
              .         .         .          .           .           .
1419          .         .         .          .     I7CWT4...........
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                .         .         .         .         .
                .         .         .         .         .
1424            .         .         .         .         .         .<-------  9DWT#4
1422            .         .         .         .         .      D46-1
                .         .         .         .         .          V
                .         .         .         .         .          V
1425            .         .         .         .         .     RD46-1
                .         .         .         .         .          .
                .         .         .         .         .          .
1431            .         .         .         .     I8CWT4............
                .         .         .         .         .
                .         .         .         .         .
1434            .         .         .         .         .        WT4
                .         .         .         .         .          .
                .         .         .         .         .          .
1444            .         .         .         .     I9CWT4............
                .         .         .         .         .
                .         .         .         .         .
1447            .         .         .    I10WT4............
                .         .         .         .
                .         .         .         .
1450            .         .     CPWT4............
                .         .         V
                .         .         V
1453            .         .      RS47
                .         .         .
                .         .         .
1464            .         .         .         .<-------  1D303A
1462            .         .         .    D43-1
                .         .         .         V
                .         .         .         V
1465            .         .         .    R43-1
                .         .         .         .
                .         .         .         .
1473            .         .         .         .         .<-------  2D303A
1471            .         .         .         .     D43-2
                .         .         .         .         V
                .         .         .         .         V
1474            .         .         .         .     R43-2
                .         .         .         .         .
                .         .         .         .         .
1482            .         .         .         .         .         .<-------  3D303A
1480            .         .         .         .         .      D43-3
                .         .         .         .         .          V
                .         .         .         .         .          V
1483            .         .         .         .         .      R43-3
                .         .         .         .         .          .
                .         .         .         .         .          .
1489            .         .         .         .         .          .       303A
                .         .         .         .         .          .          .
                .         .         .         .         .          .          .
1496            .         .         .    1C303A.................................
                .         .         .         .
                .         .         .         .
1499            .         .     CP303A............
                .         .         .
                .         .         .
1504            .         .         .         .<-------   1D303
1502            .         .         .    D41A1
                .         .         .         V
                .         .         .         V
1505            .         .         .    R41A1
                .         .         .         .
                .         .         .         .
1513            .         .         .         .         .<-------   2D303
1511            .         .         .         .     D41A2
                .         .         .         .         V
                .         .         .         .         V
1514            .         .         .         .     R41A2
                .         .         .         .         .
                .         .         .         .         .
1520            .         .         .    1I303............
                .         .         .         .
                .         .         .         .
1525            .         .         .         .         .<-------   3D303
1523            .         .         .         .     D41A3
                .         .         .         .         V
                .         .         .         .         V
1526            .         .         .         .     R41A3
                .         .         .         .         .
                .         .         .         .         .
1532            .         .         .    2I303............
                .         .         .         .
                .         .         .         .
1537            .         .         .         .         .<-------   4D303
1535            .         .         .         .       D41A
                .         .         .         .         V
                .         .         .         .         V
1538            .         .         .         .       R41A
                .         .         .         .         .
                .         .         .         .         .
1544            .         .         .    3I303............
                .         .         .         .
                .         .         .         .
1549            .         .         .         .         .<-------   5D303
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1547          .         .         .         .      D41-1
              .         .         .         .         V
              .         .         .         .         V
1550          .         .         .         .      R41-1
              .         .         .         .         .
              .         .         .         .         .
1556          .         .         .     4I303............
              .         .         .         .
              .         .         .         .
1561          .         .         .         .         .<-------   6D303
1559          .         .         .         .      D41-2
              .         .         .         .         V
              .         .         .         .         V
1562          .         .         .         .      R41-2
              .         .         .         .         .
              .         .         .         .         .
1568          .         .         .     5I303............
              .         .         .         .
              .         .         .         .
1573          .         .         .         .         .<-------   7D303
1571          .         .         .         .       D41
              .         .         .         .         V
              .         .         .         .         V
1574          .         .         .         .       R41
              .         .         .         .         .
              .         .         .         .         .
1580          .         .         .     6I303............
              .         .         .         .
              .         .         .         .
1583          .         .         .         .       303
              .         .         .         .         .
              .         .         .         .         .
1593          .         .         .     CP303............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998               *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   08AUG02  TIME  13:30:20   *
 *                                       *
 *****************************************
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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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*********************************************************************
     V E R R A D O   EXISTING CONDITION HYDROLOGY
     DESIGN EVENT:   100-YEAR - 24-HOUR FLOOD EVENT
     DATE:           08 AUGUST 2002
     FILE:           M:\2000\001081\HYDRO\HYDROLOGY\
                      31JULY2002EXISTING CONDITIONHEC-1\1479E100.DAT
*********************************************************************

     ***HC CARDS FOR CP2711, I2712, CP255A & 1I287C UPDATED
     ***TO INCLUDE AN AREA AT THE POINT OF COMBINATION

      3 - 27 - 02
      **ADOT BASIN GEOMETRY REPRESENTS MOST RECENT 2' CONTOURS**
      WHITE TANKS AREA DRAINAGE MASTER STUDY *UPDATE*
      Original MODEL BY THE WLB Group for FCDMC AS PART OF THE WHITE
      TANKS/AGUA FRIA ADMS, Date: October 1991

      REVISED HYDROLOGY HEC-1 RUN FOR WHITE TANKS ADMS
      100-YEAR, 24-HOUR STORM                  original file: WTADMS.24

      SOME NOMENCLATURE CHANGES HAVE BEEN MADE PER REQUEST OF
      FCDMC - 5-09-01

      INCORPORATED CHANGES PROPOSED BY DAVID EVANS AND ASSOCIATES
      AT CACTUS AND REEMS IN REGARD TO RANCHO GABRIELA AT THE
      DIRECTION OF THE FCDMC 9-20-01

      REVISED CONTRIBUTING AREAS ALONG CACTUS WEST OF REEMS AND
      IN ADOT WATERSHED AREA


                                    REVISED BY URS     DATE: 3-27-02
                                                       FILE: L303M3K.DAT

     NOTES:
     1. THIS HEC-1 MODEL CONTAINS THE FOLLOWING SUPER BASINS: WHITE TANKS 3,
        2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2 & 3, 4 THRU 26.
     2. REVISED TO REFLECT UPDATED SOILS MAPS AND NEW DEVELOPMENT.
     3. AVERAGE XKSAT VALUES FOR EACH SUBBASIN WAS RECEIVED FROM FCDMC
        GIS DATA AND THEN ADJUSTED FOR VEGETATION, OR LEFT AS ORIGINALLY IN
        THE WLB MODEL.
     4. FOR NEW DEVELOPMENTS ONLY 80% OF REPORTED PROVIDED RETENTION
        WAS INCLUDED IN THIS MODEL (AS A CONSERVATIVE ESTIMATE). RETENTION
        CAPACITIES WERE ESTIMATED BY EEC FOR DEVELOPMENTS WITH NO
        DRAINAGE REPORTS.
```

5. REVISED DRAINAGE BOUNDARIES BASED UPON FIELD INSPECTION OF SUN CITY. GRAND. COMBINED SEVERAL BASINS TOGETHER TO MAKE NEW BASINS 114 &115. ALSO REROUTED SUBBASINS 100A, 101, 102A AND 106 TO THE SOUTH TO 113A.
6. CHANNEL ROUTE ALONG REEMS ROAD UPDATED TO REFLECT NEW CONSTRUCTION.
7. REVISED SCS TYPE II RAINFALL DISTRIBUTION FOR THE 24-HOUR GENERAL STORM.
8. REVISED RAINFALL DEPTH-AREA REDUCTION FACTORS.
9. PSIF WERE ADJUSTED BASED ON THE VALUES OF XKSAT AND WERE EDITED INTO THE DATA FILE BY THE FCDMC.
10. AVERAGE XKSAT VALUES FOR SUBBASINS WITH BORROW PITS (WHITE TANKS AREAS #3 & #4) WERE ESTIMATED BY EEC.

```
60 IO        OUTPUT CONTROL VARIABLES
                   IPRNT          5  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT        HYDROGRAPH TIME DATA
                    NMIN          5  MINUTES IN COMPUTATION INTERVAL
                   IDATE      1   0  STARTING DATE
                   ITIME       0000  STARTING TIME
                      NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE      3   0  ENDING DATE
                  NDTIME       0155  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

62 JD        INDEX STORM NO. 1
                  STRM        4.03  PRECIPITATION DEPTH
                  TRDA         .00  TRANSPOSITION DRAINAGE AREA

63 PI          PRECIPITATION PATTERN
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                 .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                 .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                 .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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73 JD        INDEX STORM NO. 2
                  STRM        3.79  PRECIPITATION DEPTH
                  TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                 .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                 .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                 .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                 .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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74 JD        INDEX STORM NO. 3
                 STRM        3.51  PRECIPITATION DEPTH
                 TRDA       50.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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75 JD        INDEX STORM NO. 4
                 STRM        3.39  PRECIPITATION DEPTH
                 TRDA      100.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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76 JD        INDEX STORM NO. 5
                 STRM        3.29  PRECIPITATION DEPTH
                 TRDA      200.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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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	4	396.	12.25	36.	10.	5.	.30		
+	HYDROGRAPH AT	5	927.	12.25	86.	23.	11.	.72		
+	2 COMBINED AT	CP5	1315.	12.25	121.	33.	16.	1.02		
+	ROUTED TO	RCP5	1312.	12.25	121.	33.	16.	1.02		
+	HYDROGRAPH AT	6	746.	12.08	52.	14.	7.	.45		
+	2 COMBINED AT	CP6	1854.	12.17	172.	47.	23.	1.47		
+	ROUTED TO	RCP6	1784.	12.17	172.	47.	23.	1.47		
+	HYDROGRAPH AT	7	494.	12.08	36.	10.	5.	.31		
+	2 COMBINED AT	CP7	2245.	12.17	206.	57.	27.	1.78		
+	ROUTED TO	RCP7	1947.	12.33	206.	57.	27.	1.78		
+	HYDROGRAPH AT	9	1402.	12.33	161.	44.	21.	1.40		
+	2 COMBINED AT	I1CP9	3324.	12.33	364.	100.	48.	3.18		
+	HYDROGRAPH AT	14	1548.	12.33	173.	47.	23.	1.47		
+	ROUTED TO	RCP14	1392.	12.58	173.	47.	23.	1.47		
+	HYDROGRAPH AT	15	1272.	12.42	149.	40.	19.	1.26		
+	2 COMBINED AT	I1CP15	2485.	12.50	319.	86.	42.	2.73		
+	HYDROGRAPH AT	16	1206.	12.42	149.	41.	20.	1.13		
+	ROUTED TO	SR16	0.	.00	0.	0.	0.	1.13		
+	2 COMBINED AT	CP15	2485.	12.50	319.	86.	42.	3.90		
+	ROUTED TO	RCP15	2108.	12.75	318.	86.	41.	3.90		
+	HYDROGRAPH AT	18	1179.	12.17	95.	26.	13.	.81		

+	ROUTED TO	R18	996.	12.33	95.	26.	13.	.81
+	HYDROGRAPH AT	19	819.	12.42	96.	26.	13.	.79
+	2 COMBINED AT	CP19	1799.	12.33	190.	52.	25.	1.60
+	ROUTED TO	R19	1710.	12.42	190.	52.	25.	1.60
+	HYDROGRAPH AT	21	913.	12.42	108.	29.	14.	.79
+	2 COMBINED AT	I1CP21	2606.	12.42	296.	80.	39.	2.39
+	HYDROGRAPH AT	20	1218.	12.33	138.	37.	18.	1.07
+	ROUTED TO	SR20	0.	.00	0.	0.	0.	1.07
+	ROUTED TO	R20	0.	.00	0.	0.	0.	1.07
+	2 COMBINED AT	CP21	2606.	12.42	296.	80.	39.	3.46
+	ROUTED TO	SR21	973.	12.75	118.	32.	15.	3.46
+	ROUTED TO	R21	901.	12.92	118.	32.	15.	3.46
+	HYDROGRAPH AT	23	310.	12.08	24.	7.	3.	.16
+	2 COMBINED AT	CP23	909.	12.92	138.	38.	19.	3.62
+	ROUTED TO	SR23	0.	.00	0.	0.	0.	3.62
+	ROUTED TO	R23	0.	.00	0.	0.	0.	3.62
+	HYDROGRAPH AT	22	730.	12.25	72.	19.	9.	.57
+	ROUTED TO	R22	686.	12.42	72.	19.	9.	.57
+	HYDROGRAPH AT	22A	733.	12.25	69.	18.	9.	.50
+	2 COMBINED AT	I1C22A	1304.	12.33	141.	37.	18.	1.07
+	2 COMBINED AT	CP22A	1285.	12.33	138.	37.	18.	4.69
+	ROUTED TO	R22A	1194.	12.50	138.	37.	18.	4.69
+	HYDROGRAPH AT	25	560.	12.33	58.	15.	7.	.46
+	2 COMBINED AT	I1CP25	1670.	12.42	195.	51.	25.	5.15
+	HYDROGRAPH AT	24	193.	12.25	17.	4.	2.	.14
+	ROUTED TO	SR24	0.	.00	0.	0.	0.	.14
+	ROUTED TO	R24	0.	.00	0.	0.	0.	.14
+	2 COMBINED AT	CP25	1670.	12.42	195.	51.	25.	5.29
+	ROUTED TO	SR25	1609.	12.50	174.	44.	21.	5.29
+	HYDROGRAPH AT	26	1333.	12.50	179.	46.	22.	1.16
+	ROUTED TO	R26	1284.	12.58	179.	46.	22.	1.16
+	HYDROGRAPH AT	27	1153.	12.33	174.	50.	24.	1.00

+	2 COMBINED AT	I1CP27	2166.	12.50	351.	95.	46.	2.16
+	ROUTED TO	SR27	2164.	12.50	347.	89.	43.	2.16
+	2 COMBINED AT	CP27	3741.	12.50	516.	132.	64.	7.45
+	ROUTED TO	R27	3478.	12.67	514.	132.	64.	7.45
+	HYDROGRAPH AT	34	457.	12.25	42.	11.	6.	.36
+	HYDROGRAPH AT	33	811.	12.25	75.	21.	10.	.65
+	2 COMBINED AT	CP33	1259.	12.25	116.	32.	15.	1.01
+	ROUTED TO	R33	1203.	12.33	116.	32.	15.	1.01
+	HYDROGRAPH AT	35	510.	12.17	45.	12.	6.	.39
+	2 COMBINED AT	I1CP35	1655.	12.25	160.	44.	21.	1.40
+	HYDROGRAPH AT	32	1154.	12.33	156.	43.	21.	1.29
+	2 COMBINED AT	CP35	2717.	12.25	313.	86.	42.	2.69
+	ROUTED TO	R35	2658.	12.33	313.	86.	42.	2.69
+	HYDROGRAPH AT	36	301.	12.25	26.	7.	3.	.24
+	2 COMBINED AT	I1CP36	2923.	12.33	338.	93.	45.	2.93
+	HYDROGRAPH AT	37	909.	12.42	115.	31.	15.	.95
+	2 COMBINED AT	CP36	3736.	12.33	451.	123.	59.	3.88
+	ROUTED TO	R36	3668.	12.42	450.	123.	59.	3.88
+	HYDROGRAPH AT	38	911.	12.25	85.	22.	11.	.76
+	2 COMBINED AT	CP38	4305.	12.42	533.	145.	70.	4.64
+	ROUTED TO	SR38	4259.	12.42	481.	125.	60.	4.64
+	ROUTED TO	R38	4112.	12.58	480.	125.	60.	4.64
+	HYDROGRAPH AT	39	628.	12.50	80.	20.	10.	.77
+	2 COMBINED AT	I1CP39	4707.	12.58	556.	144.	69.	5.41
+	2 COMBINED AT	CP39	7708.	12.58	1042.	270.	130.	12.86
+	ROUTED TO	R39	7686.	12.67	1041.	270.	130.	12.86
+	HYDROGRAPH AT	40	586.	12.25	63.	17.	8.	.52
+	ROUTED TO	R40	498.	12.50	63.	17.	8.	.52
+	HYDROGRAPH AT	42	1055.	12.50	136.	34.	16.	1.18
+	2 COMBINED AT	I1CP42	1542.	12.50	197.	51.	24.	1.70
+	2 COMBINED AT	CP42	8776.	12.67	1216.	315.	152.	14.56
	ROUTED TO							

+	SR42	8651.	12.67	1080.	280.	135.	14.56
+ ROUTED TO	R42	8761.	12.75	1080.	280.	135.	14.56
+ HYDROGRAPH AT	41A1	47.	12.00	3.	1.	0.	.02
+ ROUTED TO	SR41A1	23.	12.17	3.	1.	0.	.02
+ DIVERSION TO	1D303	23.	12.17	3.	1.	0.	.02
+ HYDROGRAPH AT	CP41A1	0.	.00	0.	0.	0.	.02
+ ROUTED TO	R41A1	0.	.00	0.	0.	0.	.02
+ HYDROGRAPH AT	41A2	64.	12.00	3.	1.	0.	.03
+ 2 COMBINED AT	CP41A2	63.	12.00	3.	1.	0.	.05
+ ROUTED TO	SR41A2	74.	12.00	3.	1.	0.	.05
+ DIVERSION TO	2D303	24.	12.00	2.	1.	0.	.05
+ HYDROGRAPH AT	D41A2	49.	12.00	1.	0.	0.	.05
+ ROUTED TO	R41A2	30.	12.08	1.	0.	0.	.05
+ HYDROGRAPH AT	41A3	61.	12.00	3.	1.	0.	.03
+ 2 COMBINED AT	CP41A3	83.	12.08	4.	1.	0.	.08
+ ROUTED TO	SR41A3	23.	12.25	4.	1.	0.	.08
+ DIVERSION TO	3D303	23.	12.25	4.	1.	0.	.08
+ HYDROGRAPH AT	D41A3	0.	.00	0.	0.	0.	.08
+ ROUTED TO	R41A3	0.	.00	0.	0.	0.	.08
+ HYDROGRAPH AT	41A	92.	12.00	5.	1.	1.	.05
+ 2 COMBINED AT	CP41A	91.	12.00	5.	1.	1.	.13
+ ROUTED TO	SR41A	24.	12.25	5.	1.	1.	.13
+ DIVERSION TO	4D303	24.	12.25	5.	1.	1.	.13
+ HYDROGRAPH AT	D41A	0.	.00	0.	0.	0.	.13
+ ROUTED TO	R41A	0.	.00	0.	0.	0.	.13
+ HYDROGRAPH AT	41-1	223.	12.17	15.	4.	2.	.15
+ 2 COMBINED AT	CP41-1	222.	12.17	15.	4.	2.	.28
+ ROUTED TO	SR41-1	222.	12.25	15.	4.	2.	.28
+ DIVERSION TO	5D303	45.	12.25	12.	3.	1.	.28
+ HYDROGRAPH AT	D41-1	177.	12.25	4.	1.	0.	.28
+ ROUTED TO	R41-1	64.	12.33	4.	1.	0.	.28
+ HYDROGRAPH AT	41-2	150.	12.17	10.	3.	1.	.10

+	2 COMBINED AT	CP41-2	149.	12.17	14.	3.	2.	.38
+	ROUTED TO	SR41-2	38.	12.50	14.	3.	2.	.38
+	DIVERSION TO	6D303	38.	12.50	14.	3.	2.	.38
+	HYDROGRAPH AT	D41-2	0.	.00	0.	0.	0.	.38
+	ROUTED TO	R41-2	0.	.00	0.	0.	0.	.38
+	HYDROGRAPH AT	41	536.	12.42	60.	15.	7.	.58
+	2 COMBINED AT	CP41	535.	12.42	60.	15.	7.	.68
+	ROUTED TO	SR41	477.	12.50	60.	15.	7.	.68
+	DIVERSION TO	7D303	46.	12.50	26.	7.	3.	.68
+	HYDROGRAPH AT	D41	431.	12.50	34.	8.	4.	.68
+	ROUTED TO	R41	423.	12.58	34.	8.	4.	.68
+	HYDROGRAPH AT	43-1	73.	12.08	4.	1.	1.	.04
+	2 COMBINED AT	CP43-1	423.	12.58	38.	10.	5.	1.00
+	ROUTED TO	SR43-1	262.	12.83	38.	9.	5.	1.00
+	DIVERSION TO	1D303A	262.	12.83	38.	9.	5.	1.00
+	HYDROGRAPH AT	D43-1	0.	.00	0.	0.	0.	1.00
+	ROUTED TO	R43-1	0.	.00	0.	0.	0.	1.00
+	HYDROGRAPH AT	43-2	19.	12.00	1.	0.	0.	.01
+	2 COMBINED AT	CP43-2	18.	12.00	1.	0.	0.	1.01
+	ROUTED TO	SR43-2	10.	12.17	1.	0.	0.	1.01
+	DIVERSION TO	2D303A	10.	12.17	1.	0.	0.	1.01
+	HYDROGRAPH AT	D43-2	0.	.00	0.	0.	0.	1.01
+	ROUTED TO	R43-2	0.	.00	0.	0.	0.	1.01
+	HYDROGRAPH AT	43-3	106.	12.00	5.	1.	1.	.05
+	2 COMBINED AT	CP43-3	103.	12.00	5.	1.	1.	1.06
+	ROUTED TO	SR43-3	22.	12.17	5.	1.	1.	1.06
+	DIVERSION TO	3D303A	22.	12.17	5.	1.	1.	1.06
+	HYDROGRAPH AT	D43-3	0.	.00	0.	0.	0.	1.06
+	ROUTED TO	R43-3	0.	.00	0.	0.	0.	1.06
+	HYDROGRAPH AT	43-4	64.	12.00	3.	1.	0.	.03
+	2 COMBINED AT	CP43-4	61.	12.00	3.	1.	0.	1.09
+	ROUTED TO	SR43-4	21.	12.17	3.	1.	0.	1.09

	DIVERSION TO							
+		1DWT#4	21.	12.17	3.	1.	0.	1.09
	HYDROGRAPH AT							
+		D43-4	0.	.00	0.	0.	0.	1.09
	ROUTED TO							
+		R43-4	0.	.00	0.	0.	0.	1.09
	HYDROGRAPH AT							
+		43-5	44.	12.00	2.	1.	0.	.02
	2 COMBINED AT							
+		CP43-5	42.	12.00	2.	1.	0.	1.11
	ROUTED TO							
+		SR43-5	19.	12.17	2.	1.	0.	1.11
	DIVERSION TO							
+		2DWT#4	19.	12.17	2.	1.	0.	1.11
	HYDROGRAPH AT							
+		D43-5	0.	.00	0.	0.	0.	1.11
	ROUTED TO							
+		R43-5	0.	.00	0.	0.	0.	1.11
	HYDROGRAPH AT							
+		43-6	44.	12.00	2.	1.	0.	.02
	2 COMBINED AT							
+		CP43-6	43.	12.00	2.	1.	0.	1.13
	ROUTED TO							
+		SR43-6	5.	12.25	2.	1.	0.	1.13
	DIVERSION TO							
+		3DWT#4	5.	12.25	2.	1.	0.	1.13
	HYDROGRAPH AT							
+		D43-6	0.	.00	0.	0.	0.	1.13
	ROUTED TO							
+		R43-6	0.	.00	0.	0.	0.	1.13
	HYDROGRAPH AT							
+		43-7	46.	12.00	2.	1.	0.	.02
	2 COMBINED AT							
+		CP43-7	44.	12.00	2.	1.	0.	1.15
	ROUTED TO							
+		SR43-7	20.	12.08	2.	1.	0.	1.15
	DIVERSION TO							
+		4DWT#4	20.	12.08	2.	1.	0.	1.15
	HYDROGRAPH AT							
+		D43-7	0.	.00	0.	0.	0.	1.15
	ROUTED TO							
+		R43-7	0.	.00	0.	0.	0.	1.15
	HYDROGRAPH AT							
+		43-8	23.	12.00	1.	0.	0.	.01
	2 COMBINED AT							
+		CP43-8	22.	12.00	1.	0.	0.	1.16
	ROUTED TO							
+		SR43-8	12.	12.08	1.	0.	0.	1.16
	DIVERSION TO							
+		5DWT#4	12.	12.08	1.	0.	0.	1.16
	HYDROGRAPH AT							
+		D43-8	0.	.00	0.	0.	0.	1.16
	ROUTED TO							
+		R43-8	0.	.00	0.	0.	0.	1.16
	HYDROGRAPH AT							
+		43	23.	12.00	1.	0.	0.	.01
	2 COMBINED AT							
+		I1CP43	22.	12.00	1.	0.	0.	1.17
	2 COMBINED AT							
+		CP43	8794.	12.75	1084.	282.	135.	13.90
	ROUTED TO							
+		SR43	8231.	12.83	1084.	282.	135.	13.90
	DIVERSION TO							

+		DI45-1	3299.	12.83	203.	51.	24.	13.90
+	HYDROGRAPH AT	D43	4932.	12.83	881.	231.	111.	13.90
+	ROUTED TO	RD43	4844.	12.92	879.	231.	111.	13.90
+	HYDROGRAPH AT	D43-4	21.	12.17	3.	1.	0.	1.09
+	ROUTED TO	RD43-4	13.	12.67	3.	1.	0.	1.09
+	HYDROGRAPH AT	D43-5	19.	12.17	2.	1.	0.	1.11
+	ROUTED TO	RD43-5	13.	12.58	2.	1.	0.	1.11
+	2 COMBINED AT	I1CWT4	27.	12.67	5.	1.	1.	.05
+	HYDROGRAPH AT	D43-6	5.	12.25	2.	1.	0.	1.13
+	ROUTED TO	RD43-6	4.	13.25	2.	1.	0.	1.13
+	2 COMBINED AT	I2CWT4	29.	12.67	7.	2.	1.	.07
+	HYDROGRAPH AT	D43-7	20.	12.08	2.	1.	0.	1.15
+	ROUTED TO	RD43-7	12.	12.58	2.	1.	0.	1.15
+	2 COMBINED AT	I3CWT4	41.	12.58	10.	2.	1.	.09
+	HYDROGRAPH AT	D43-8	12.	12.08	1.	0.	0.	1.16
+	ROUTED TO	RD43-8	5.	12.58	1.	0.	0.	1.16
+	2 COMBINED AT	I4CWT4	46.	12.58	11.	3.	1.	.10
+	HYDROGRAPH AT	44	287.	12.25	24.	6.	3.	.22
+	2 COMBINED AT	I5CWT4	308.	12.25	35.	9.	4.	.32
+	2 COMBINED AT	CP44	4880.	12.92	905.	239.	115.	14.12
+	HYDROGRAPH AT	45-1	137.	12.08	9.	2.	1.	.08
+	HYDROGRAPH AT	D43	3299.	12.83	203.	51.	24.	13.90
+	2 COMBINED AT	CP45-1	3296.	12.83	211.	53.	25.	13.98
+	ROUTED TO	SR45-1	3198.	12.83	211.	53.	25.	13.98
+	DIVERSION TO	7DWT#4	477.	12.83	51.	13.	6.	13.98
+	HYDROGRAPH AT	D45-1	2721.	12.83	160.	40.	19.	13.98
+	ROUTED TO	R45-1	2601.	12.92	160.	40.	19.	13.98
+	HYDROGRAPH AT	45	845.	12.00	44.	11.	5.	.38
+	2 COMBINED AT	CP45	2581.	12.92	200.	50.	24.	14.36
+	ROUTED TO	SR45	2232.	13.00	200.	50.	24.	14.36
+	DIVERSION TO	8DWT#4	370.	13.00	107.	27.	13.	14.36
+	HYDROGRAPH AT	D45	1861.	13.00	93.	23.	11.	14.36

+	ROUTED TO	R45	1567.	13.08	93.	23.	11.	14.36
+	HYDROGRAPH AT	46-1	151.	12.25	15.	4.	2.	.15
+	2 COMBINED AT	CP46-1	1567.	13.08	107.	27.	13.	14.51
+	ROUTED TO	SR46-1	1329.	13.17	107.	27.	13.	14.51
+	DIVERSION TO	9DWT#4	217.	13.17	58.	14.	7.	14.51
+	HYDROGRAPH AT	D46-1	1112.	13.17	49.	12.	6.	14.51
+	ROUTED TO	R46-1	628.	13.25	49.	12.	6.	14.51
+	HYDROGRAPH AT	46	525.	12.58	88.	22.	11.	.85
+	2 COMBINED AT	I1CP46	748.	13.25	130.	32.	16.	15.36
+	HYDROGRAPH AT	28	734.	12.50	88.	22.	11.	.86
+	ROUTED TO	R28	727.	12.50	88.	22.	11.	.86
+	HYDROGRAPH AT	30	338.	12.25	46.	14.	7.	.28
+	2 COMBINED AT	I1CP30	923.	12.50	133.	36.	17.	1.14
+	HYDROGRAPH AT	29	262.	12.25	23.	6.	3.	.22
+	ROUTED TO	SR29	0.	.00	0.	0.	0.	.22
+	ROUTED TO	R29	0.	.00	0.	0.	0.	.22
+	2 COMBINED AT	CP30	923.	12.50	133.	36.	17.	1.36
+	ROUTED TO	R30	863.	12.67	133.	36.	17.	1.36
+	HYDROGRAPH AT	31	580.	12.50	72.	18.	9.	.71
+	2 COMBINED AT	CP31	1368.	12.58	203.	54.	26.	2.07
+	ROUTED TO	R31	1329.	12.75	203.	53.	26.	2.07
+	2 COMBINED AT	CP46	1672.	12.75	316.	81.	39.	17.43
+	ROUTED TO	SR46	1651.	12.75	316.	81.	39.	17.43
+	ROUTED TO	R46	1561.	12.92	315.	81.	39.	17.43
+	HYDROGRAPH AT	D45-1	477.	12.83	51.	13.	6.	13.98
+	ROUTED TO	RD45-1	400.	13.08	51.	13.	6.	13.98
+	HYDROGRAPH AT	D45	370.	13.00	107.	27.	13.	14.36
+	ROUTED TO	RD45	349.	13.25	107.	27.	13.	14.36
+	2 COMBINED AT	I7CWT4	717.	13.17	158.	39.	19.	14.36
+	HYDROGRAPH AT	D46-1	217.	13.17	58.	14.	7.	14.51
+	ROUTED TO	RD46-1	206.	13.58	58.	14.	7.	14.51
+	2 COMBINED AT	I8CWT4	832.	13.25	215.	54.	26.	14.51

+	HYDROGRAPH AT	WT4	919.	12.25	80.	20.	10.	.77
+	2 COMBINED AT	I9CWT4	1090.	12.33	289.	72.	35.	15.28
+	2 COMBINED AT	I10WT4	2216.	13.00	597.	152.	73.	18.20
+	2 COMBINED AT	CPWT4	6896.	12.92	1484.	386.	186.	18.57
+	ROUTED TO	RS47	0.	.00	0.	0.	0.	18.57
+	HYDROGRAPH AT	D43-1	262.	12.83	38.	9.	5.	1.00
+	ROUTED TO	R43-1	265.	13.42	38.	9.	5.	1.00
+	HYDROGRAPH AT	D43-2	10.	12.17	1.	0.	0.	1.01
+	ROUTED TO	R43-2	4.	13.92	1.	0.	0.	1.01
+	HYDROGRAPH AT	D43-3	22.	12.17	5.	1.	1.	1.06
+	ROUTED TO	R43-3	14.	13.75	5.	1.	1.	1.06
+	HYDROGRAPH AT	303A	486.	12.25	44.	11.	5.	.42
+	4 COMBINED AT	1C303A	481.	12.25	87.	22.	11.	1.06
+	2 COMBINED AT	CP303A	479.	12.25	87.	22.	10.	1.48
+	HYDROGRAPH AT	D41A1	23.	12.17	3.	1.	0.	.02
+	ROUTED TO	R41A1	13.	13.58	3.	1.	0.	.02
+	HYDROGRAPH AT	D41A2	24.	12.00	2.	1.	0.	.05
+	ROUTED TO	R41A2	13.	13.50	2.	1.	0.	.05
+	2 COMBINED AT	1I303	26.	13.50	5.	1.	1.	.05
+	HYDROGRAPH AT	D41A3	23.	12.25	4.	1.	0.	.08
+	ROUTED TO	R41A3	13.	14.58	4.	1.	0.	.08
+	2 COMBINED AT	2I303	27.	13.58	9.	2.	1.	.08
+	HYDROGRAPH AT	D41A	24.	12.25	5.	1.	1.	.13
+	ROUTED TO	R41A	14.	14.67	5.	1.	1.	.13
+	2 COMBINED AT	3I303	31.	14.42	14.	4.	2.	.13
+	HYDROGRAPH AT	D41-1	45.	12.25	12.	3.	1.	.28
+	ROUTED TO	R41-1	34.	14.17	11.	3.	1.	.28
+	2 COMBINED AT	4I303	64.	14.17	25.	6.	3.	.28
+	HYDROGRAPH AT	D41-2	38.	12.50	14.	3.	2.	.38
+	ROUTED TO	R41-2	33.	14.58	13.	3.	2.	.38
+	2 COMBINED AT	5I303	93.	14.42	37.	10.	5.	.38
	HYDROGRAPH AT							

+		D41	46.	12.50	26.	7.	3.	.68
	ROUTED TO							
+		R41	44.	14.67	25.	7.	3.	.68
	2 COMBINED AT							
+		6I303	134.	14.50	61.	16.	8.	.96
	HYDROGRAPH AT							
+		303	626.	12.67	96.	24.	12.	.91
	2 COMBINED AT							
+		CP303	621.	12.67	150.	40.	19.	2.17

*** NORMAL END OF HEC-1 ***

APPENDIX B

HEC-1 Post-Development Conditions
Computer Output Files

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   27AUG02  TIME  15:35:22  *
 *                                      *
 ****************************************
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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
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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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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID  ********************************************
  2           ID  VERRADO PROPOSED CONDITION HYDROLGY
  3           ID  DESIGN EVENT: 100-YEAR - 24-HOUR FLOOD EVENT
  4           ID  DATE:         AUGUST 27, 2002
  5           ID  FILENAME:     M:\2000\ 001081\HYDRO\HYDROLOGY\
  6           ID                31JULY2002 DEVELOPED CONDITION HEC-1\1479D100.DAT
  7           ID  ********************************************
  8           ID
  9           ID       ***HC CARDS FOR CP2711, I2712, CP255A & 1I287C UPDATED
 10           ID       ***TO INCLUDE AN AREA AT THE POINT OF COMBINATION
 11           ID
 12           ID        3 - 27 - 02
 13           ID        **ADOT BASIN GEOMETRY REPRESENTS MOST RECENT 2' CONTOURS**
 14           ID        WHITE TANKS AREA DRAINAGE MASTER STUDY *UPDATE*
 15           ID        Original MODEL BY THE WLB Group for FCDMC AS PART OF THE WHITE
 16           ID        TANKS/AGUA FRIA ADMS, Date: October 1991
 17           ID
 18           ID        REVISED HYDROLOGY HEC-1 RUN FOR WHITE TANKS ADMS
 19           ID        100-YEAR, 24-HOUR STORM                  original file: WTADMS.24
 20           ID
 21           ID        SOME NOMENCLATURE CHANGES HAVE BEEN MADE PER REQUEST OF
 22           ID        FCDMC - 5-09-01
 23           ID
 24           ID        INCORPORATED CHANGES PROPOSED BY DAVID EVANS AND ASSOCIATES
 25           ID        AT CACTUS AND REEMS IN REGARD TO RANCHO GABRIELA AT THE
 26           ID        DIRECTION OF THE FCDMC 9-20-01
 27           ID
 28           ID        REVISED CONTRIBUTING AREAS ALONG CACTUS WEST OF REEMS AND
 29           ID        IN ADOT WATERSHED AREA
 30           ID
 31           ID
 32           ID
 33           ID                                   REVISED BY URS     DATE: 3-27-02
 34           ID                                                      FILE: L303M3K.DAT
 35           ID
 36           ID       NOTES:
 37           ID       1. THIS HEC-1 MODEL CONTAINS THE FOLLOWING SUPER BASINS: WHITE TANKS 3,
 38           ID          2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2 & 3, 4 THRU 26.
 39           ID       2. REVISED TO REFLECT UPDATED SOILS MAPS AND NEW DEVELOPMENT.
 40           ID       3. AVERAGE XKSAT VALUES FOR EACH SUBBASIN WAS RECEIVED FROM FCDMC
 41           ID          GIS DATA AND THEN ADJUSTED FOR VEGETATION, OR LEFT AS ORIGINALLY IN
 42           ID          THE WLB MODEL.
 43           ID       4. FOR NEW DEVELOPMENTS ONLY 80% OF REPORTED PROVIDED RETENTION
 44           ID          WAS INCLUDED IN THIS MODEL (AS A CONSERVATIVE ESTIMATE). RETENTION
 45           ID          CAPACITIES WERE ESTIMATED BY EEC FOR DEVELOPMENTS WITH NO
 46           ID          DRAINAGE REPORTS.
 47           ID       5. REVISED DRAINAGE BOUNDARIES BASED UPON FIELD INSPECTION OF SUN CITY.
 48           ID          GRAND.  COMBINED SEVERAL BASINS TOGETHER TO MAKE NEW BASINS 114 &115.
 49           ID          ALSO REROUTED SUBBASINS 100A, 101, 102A AND 106 TO THE SOUTH TO 113A.
 50           ID       6. CHANNEL ROUTE ALONG REEMS ROAD UPDATED TO REFLECT NEW CONSTRUCTION.
 51           ID       7. REVISED SCS TYPE II RAINFALL DISTRIBUTION FOR THE 24-HOUR GENERAL
 52           ID          STORM.
 53           ID       8. REVISED RAINFALL DEPTH-AREA REDUCTION FACTORS.
 54           ID       9. PSIF WERE ADJUSTED BASED ON THE VALUES OF XKSAT AND WERE EDITED INTO
 55           ID          THE DATA FILE BY THE FCDMC.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  56          ID       10. AVERAGE XKSAT VALUES FOR SUBBASINS WITH BORROW PITS (WHITE TANKS
  57          ID           AREAS #3 & #4) WERE ESTIMATED BY EEC.
  58          ID
              *DIAGRAM
  59          IT       5                    600
  60          IO       5
  61          IN      15
  62          JD    4.03    .001
  63          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
  64          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
  65          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
  66          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
  67          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
  68          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
  69          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
  70          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
  71          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
  72          PC    .983    .986    .989    .992    .995    .998    1.00   1.000   1.000   1.000
  73          JD    3.79      10
  74          JD    3.51      50
  75          JD    3.39     100
  76          JD    3.29     200
              * ************************************************************************
              * **************THE FOLLOWING SECTION IS WHITE TANKS 3**********************
              * ************************************************************************
              * ******TRANSMISSION LOSSES REMOVED - 4/25/00 - ERE************************
              * ************************************************************************
              *
              *

  77          KK       4
  78          KM        RUNOFF HYDROGRAPH FORM SUB-BASIN 4.
  79          BA     .30
              *     LG    0.35    0.15    8.01   0.081  18.504
  80          LG     .20     .35    4.35     .44      27
  81          UI     47.    191.    286.    443.    513.    346.    237.    115.     67.     36.
  82          UI     14.     14.      0.      0.      0.      0.      0.      0.      0.      0.
  83          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

  84          KK       5
  85          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 5.
  86          BA     .72
              *     LG    0.35    0.15   8.023   0.081  17.926
  87          LG     .20     .35    4.30     .45    9.00
  88          UI    109.    433.    653.    981.   1241.    852.    594.    323.    177.    104.
  89          UI     33.     33.     33.      0.      0.      0.      0.      0.      0.      0.
  90          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
```



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

  91          KK     CP5
  92          KM        ADD HYDROGRAPHS AT CP5.
  93          HC       2    1.02
              *

  94          KK    RCP5
  95          KM        ROUTE COMBINED HYDROGRAPHS AT CP5 TO CP6.
  96          RS       1              -1       0
  97          RC     .08     .05     .08    2400   .0833
  98          RX     955     970     985    1000    1020    1035    1050    1065
  99          RY    2815    2810    2805    2800    2800    2805    2810    2815
              *

 100          KK       6
 101          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 6.
 102          BA     .45
              *     LG    0.35    0.15   7.976   0.082      20
 103          LG     .20     .35    3.95     .53   10.00
 104          UI    206.    627.   1145.    834.    421.    154.     53.     33.      0.      0.
 105          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 106          KK     CP6
 107          KM        ADD HYDROGRAPHS AT CP6.
 108          HC       2    1.47
              *

 109          KK    RCP6
 110          KM        ROUTE COMBINED HYDROGRAPHS AT CP6 TO CP7.
 111          RS       1              -1       0
 112          RC     .08     .05     .08    2400   .0833
 113          RX     955     970     985    1000    1020    1035    1050    1065
 114          RY    2815    2810    2805    2800    2800    2805    2810    2815
              *

 115          KK       7
 116          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 7.
 117          BA     .31
              *     LG    0.35    0.15   7.976   0.082      20
```

```
118          LG     .20     .35    3.95     .53   10.00
119          UI    124.    383.    708.    610.    347.    132.     54.     21.      0.      0.
120          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

121          KK     CP7
122          KM        ADD HYDROGRAPHS AT CP7.
123          HC       2    1.78
             *
1                                          HEC-1 INPUT                                          PAGE  4

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


124          KK    RCP7
125          KM        ROUTE COMBINED HYDROGRAPHS AT CP7 TO CP9.
126          RS       3              -1       0
127          RC     .08     .05     .08   10200  .07745
128          RX    1000    1045    1120    1195    1230    1300    1350    1450
129          RY    1910    1880    1850    1838    1838    1850    1880    1910
             *

130          KK       9
131          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 9.
132          BA    1.40
             *     LG    0.35    0.15   7.909   0.084  19.572
133          LG     .20     .35    4.00     .52   10.00
134          UI    155.    380.    725.    933.   1213.   1828.   1593.   1225.    939.    707.
135          UI    389.    261.    178.    116.     47.     47.     47.     47.      0.      0.
136          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

137          KK   I1CP9
138          KM        ADD HYDROGRAPHS AT CP9.
139          HC       2    3.18
             *
             *
             *
             *

140          KK      14
141          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 14.
142          BA    1.47
             *     LG    0.35    0.15   7.974   0.082  18.195
143          LG     .20     .35    4.30     .45    9.00
144          UI    166.    421.    789.   1018.   1340.   1997.   1636.   1264.    961.    700.
145          UI    363.    275.    166.     93.     51.     51.     51.      0.      0.      0.
146          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

147          KK   RCP14
148          KM        ROUTE FLOW FROM CP14 TO CP15.
149          RS       4              -1       0
150          RC     .06    .035     .06    8800  .02556
151          RX    1000    1030    1075    1200    1220    1280    1415    1480
152          RY    1296    1295    1294    1288    1288    1294    1296    1300
             *

153          KK      15
154          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 15.
155          BA    1.26
             *     LG    0.35   0.194   6.561   0.142   15.67
156          LG     .18     .35    4.40     .41    7.00
157          UI    130.    282.    577.    747.    939.   1325.   1550.   1154.    918.    712.
158          UI    517.    276.    216.    137.     92.     40.     40.     40.     40.      0.
159          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
160          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
1                                          HEC-1 INPUT                                          PAGE  5

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


161          KK  I1CP15
162          KM        ADD HYDROGRAPHS AT I1CP15
163          HC       2    2.73
             *

164          KK      16
165          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 16.
166          BA    1.13
167          LG     .17     .35    4.65     .34    19.6
168          UI    115.    239.    502.    650.    811.   1121.   1392.   1050.    840.    656.
169          UI    500.    270.    194.    138.    102.     35.     35.     35.     35.      0.
170          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
171          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

172          KK    SR16
173          KM        STORAGE ROUTE THROUGH THE CATERPILLAR DETENTION BASIN IN SUBWATERSHED 16
174          RS       1    STOR       0       0
175          SV       0       1      31     114     270     502     807    1319    1388    1460
176          SQ       0       0       0       0       0       0       0       0       0     135
177          SE    1198    1200    1210    1220    1230    1240    1250    1260    1261    1262
             *
```

```
178          KK    CP15
179          KM        ADD HYDROGRAPHS AT CP15.
180          HC       2    3.90
             *

181          KK   RCP15
182          KM        ROUTE COMBINED HYDROGRAPHS AT CP15 TO CP17.
183          RS       3              -1       0
184          RC     .06    .035     .06    6800   .0079
185          RX    1000    1310    1380    1540    1640    1670    1700    1910
186          RY    1234    1232    1228    1226    1226    1228    1232    1235
             *
             *
             * ************************************************************************
             * ***THE FOLLOWING SECTION TAKEN FROM NEW SUPER BASIN 23 WITH NEW SOILS*****
             * ************************************************************************
             *

187          KK      18
188          KM   BASIN 18
189          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
190          KM    L=      1.3  Lca=       .6   S=  920.0  Kn= .050  LAG=  18.0
191          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
192          KM   RAINFALL DEPTH OF 4.03 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
193          KM   AN AREAL REDUCTION COEFFICIENT OF 1.000 WAS USED
194          BA     .81
195          LG     .20     .35    4.20     .48    12.6
196          UI    211.    714.   1117.   1727.   1163.    730.    304.    173.     52.     46.
197          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
198          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

199          KK     R18
200          KM        ROUTE FLOW FROM CP18 TO CP19.
201          RS       2              -1       0
202          RC     .08     .05     .08    7800   .0615
203          RX    1000    1030    1080    1097    1120    1140    1205    1218
204          RY    1520    1518    1514    1510    1510    1512    1518    1520
             *

205          KK      19
206          KM   BASIN 19
207          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
208          KM    L=      2.1  Lca=      1.0   S=  353.9  Kn= .050  LAG=  31.6
209          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
210          BA    0.77
211          LG     .19     .35    4.45     .41   10.30
212          UI     83.    194.    381.    490.    626.    937.    906.    687.    534.    412.
213          UI    255.    143.    113.     83.     25.     25.     25.     25.      0.      0.
214          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

215          KK    CP19
216          KM        ADD HYDROGRAPHS AT CP19.
217          HC       2
             *

218          KK     R19
219          KM        ROUTE COMBINED HYDROGRPAH AT CP19 TO CP21.
220          RS       2              -1       0
221          RC     .06     .04     .06    5772   .0246
222          RX    1000    1010    1025    1040    1055    1069    1080    1100
223          RY    1466    1464    1460    1458    1458    1460    1466    1467
             *

224          KK      21
225          KM   BASIN 21
226          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
227          KM    L=      1.8  Lca=       .9   S=  182.7  Kn= .050  LAG=  31.8
228          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
229          BA    0.64
230          LG     .19     .40    6.00     .20    11.5
231          UI     67.    149.    300.    388.    489.    704.    781.    581.    459.    356.
232          UI    249.    132.    107.     67.     39.     21.     21.     21.     21.      0.
233          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
234          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

235          KK  I1CP21
236          KM        ADD HYDROGRAPHS AT CP21.
237          HC       2
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

238          KK      20
239          KM   BASIN 20
240          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
241          KM    L=      2.1  Lca=      1.0   S=  425.4  Kn= .050  LAG=  30.3
242          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
243          BA    1.07
244          LG     .19     .35    4.90     .31     8.3
245          UI    119.    295.    561.    722.    941.   1418.   1209.    930.    712.    533.
246          UI    283.    200.    131.     82.     36.     36.     36.     36.      0.      0.
247          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

248          KK    SR20
249          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP20.
250          RS       1    STOR       0       0
251          SV       0    1.05    9.43   26.91   54.31   92.89  138.67  176.47  190.08  219.05
252          SV  249.57
253          SQ       0       0       0       0       0       0       0       0     265    1377
254          SQ    2963
255          SE    1443    1446    1450    1454    1458    1462    1466    1469    1470    1472
256          SE    1474
             *

257          KK     R20
258          KM        ROUTE REMAINDER OF FLOW AT CP20  TO CP21
259          RS       4              -1       0
260          RC     .06    .045     .06    6240   .0208
261          RX    1000    1012    1025    1032    1050    1057    1070    1092
262          RY    1424    1422    1420    1418    1418    1420    1422    1424
             *

263          KK    CP21
264          KM        ADD HYDROGRAPHS AT CP21.
265          HC       2
             *

266          KK    SR21
267          KM         STORAGE ROUTE THROUGH RETENTION BASIN AT CP21
268          RS       1    STOR       0       0
269          SV       0     .68   20.68   57.58    76.0   95.91  102.34  117.65     130
270          SQ       0       0       0       0       0     100     265    1377    2000
271          SE    1319    1320    1330    1340  1343.4    1347    1348    1350    1351
             *

272          KK     R21
273          KM        ROUTE REMAINDER OF FLOW AT CP21 TO CP23
274          RS       1              -1       0
275          RC     .03     .03     .05    2340   .0196
276          RX    1000    1030    1050    1070    1145    1212    1225    1250
277          RY    1310    1306    1304    1302    1302    1304    1306    1310
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

278          KK      23
279          KM   BASIN 23
280          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
281          KM    L=       .4  Lca=       .2   S=   90.9  Kn= .050  LAG=  11.7
282          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
283          BA    0.14
284          LG     .18     .35    3.95     .51    37.0
285          UI     95.    279.    412.    205.     63.     19.      0.      0.      0.      0.
286          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

287          KK    CP23
288          KM        ADD HYDROGRAPHS AT CP23
289          HC       2
             *

290          KK    SR23
291          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP23.
292          RS       1    STOR       0       0
293          SV       0    6.04   20.38   53.82  120.38  216.24  325.98  455.42   606.1  645.49
294          SV  685.61  767.98
295          SQ       0       0       0       0       0       0       0       0       0       0
296          SQ     928    8950
297          SE    1272    1276    1280    1284    1288    1292    1296    1300    1304    1305
298          SE    1306    1308
             *

299          KK     R23
300          KM        ROUTE REMAINDER OF FLOW AT CP23 TO CP22A
301          RS       4              -1       0
302          RC     .05     .03     .05    4992    .005
303          RX     930     975    1000    1010    1030    1040    1041    1042
304          RY    1397  1396.5    1396    1394    1394    1396  1396.5    1397
             *

305          KK      22
306          KM   BASIN 22
307          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
308          KM    L=      1.6  Lca=       .8   S=  426.6  Kn= .050  LAG=  25.0
309          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
310          BA    0.51
311          LG     .19     .35    4.80     .33     9.2
```

```
 312          UI     69.    231.    374.    504.    796.    666.    488.    352.    192.    116.
 313          UI     70.     30.     21.     21.      0.      0.      0.      0.      0.      0.
 314          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 315          KK     R22
 316          KM        ROUTE FLOW FROM CP22 TO CP22A
 317          RS      3              -1       0
 318          RC    .05     .03     .05    6230    .025
 319          RX   1000    1030    1060    1070    1100    1115    1125    1150
 320          RY   1294    1292    1290    1288    1288    1290    1292    1294
              *
1                                          HEC-1 INPUT                                          PAGE  9

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


 321          KK     22A
 322          KM   BASIN 22A
 323          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 324          KM    L=      1.2  Lca=       .5   S=  135.6  Kn= .050  LAG=  22.6
 325          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 326          BA    0.22
 327          LG    .15     .39    5.80     .20    30.8
 328          UI    32.    118.    183.    259.    377.    271.    193.    126.     58.     39.
 329          UI    19.     10.     10.      0.      0.      0.      0.      0.      0.      0.
 330          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 331          KK  I1C22A
 332          KM        ADD HYDROGRAPHS AT CP22A
 333          HC       2
              *

 334          KK   CP22A
 335          KM        ADD HYDROGRAPHS AT CP22A
 336          HC       2
              *
              * DIVERSION INTO GOLF OFFLINE BASIN #2 IN SECTION 18
              *

 337          KK   DGOB2
 338          KM        CHANNEL OUTLETS THROUGH 2-48" PIPES
 339          KM        50' WEIR AT 2.5' DEPTH
 340          DT    GOB2
 341          DI       0      70     144     392     722    1114    1551
 342          DQ       0       0      48     248     534     884    1289
              *

 343          KK    R22A
 344          KM        ROUTE COMBINED HYDROGRAPHS AT CP22A TO CP25
 345          RS       4              -1       0
 346          RC     .03     .03     .05    7022   .0079
 347          RX    1000    1030    1040    1047    1070    1097    1120    1200
 348          RY    1255    1254    1250    1248    1250    1252    1254    1255
              *

 349          KK      25
 350          KM   BASIN 25
 351          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 352          KM    L=      1.3  Lca=       .7   S=   86.5  Kn= .050  LAG=  29.5
 353          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 354          BA     .36
 355          LG     .15     .39    5.70     .21   34.70
 356          UI     41.    104.    195.    251.    331.    492.    399.    309.    234.    169.
 357          UI     88.     66.     41.     22.     12.     12.     12.      0.      0.      0.
 358          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                          HEC-1 INPUT                                          PAGE 10

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


 359          KK  I1CP25
 360          KM        ADD HYDROGRAPHS AT CP25
 361          HC       2
              *

 362          KK      24
 363          KM   BASIN 24
 364          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 365          KM    L=       .9  Lca=       .4   S=   78.7  Kn= .050  LAG=  22.2
 366          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 367          BA     .10
 368          LG     .35     .35    4.80     .28   40.00
 369          UI     16.     63.     94.    148.    162.    109.     74.     34.     20.     10.
 370          UI      5.      5.      0.      0.      0.      0.      0.      0.      0.      0.
 371          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *   SR24
              *       STORAGE ROUTE THROUGH RETENTION BASIN AT CP24
              *      1    STOR       0       0
              *      0     .46    2.96    16.6      86  221.55  282.99  306.59  357.02
              *      0       0       0       0       0       0       0      50    2598
              *   1210    1214    1216    1220    1230    1240    1243    1244    1246
```

```
                *
372             KK     R24
373             KM        ROUTE REMAINDER OF FLOW AT CP24 TO CP25
374             RS       1              -1       0
375             RC     .05     .03     .05    1326    .021
376             RX    1000    1040    1070    1100    1200    1220    1245    1265
377             RY    1234    1232    1230    1228    1228    1230    1232    1234
                *

378             KK    CP25
379             KM        COMBINE HYDROGRAPHS AT CP25
380             HC       2
                *
                *   SR25
                *       STORAGE ROUTE THROUGH RETENTION BASIN AT CP25
                *      1    STOR       0       0
                *      0    5.61   10.27   13.15   16.62   26.62
                *      0       0       0       0     125    2273
                *   1204    1210    1212    1213    1214    1216
                *

381             KK     26N
382             KM   BASIN 26N
383             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
384             KM    L=      1.9  Lca=      1.1   S=  541.2  Kn= .050  LAG=  28.2
385             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
386             BA     .70
387             LG     .35     .32    7.60     .09    9.40
388             UI     84.    233.    422.    545.    766.   1006.    745.    569.    426.    250.
389             UI    144.    101.     61.     26.     26.     26.      0.      0.      0.      0.
390             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                * DIVERSION INTO GOLF OFFLINE BASIN # 4 IN SECTION 24
                *
1                                          HEC-1 INPUT                                          PAGE 11

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

391             KK   DGOB4
392             KM        CHANNEL OUTLETS THROUGH 2-8X4 CBC'S
393             KM        65' WEIR AT 3' ABOVE ADJACENT CHANNEL INVERT
394             DT    GOB4
395             DI       0      44     124     228     527     986    1249    1523    1812    2116
396             DQ       0       0       0       0     176     496     694     912    1149    1404
                *

397             KK     R26
398             KM        ROUTE FLOW FROM CP26 TO CP27
399             RS       4              -1       0
400             RC     .05     .03     .05    7020   .0157
401             RX    1000    1012    1025    1040    1090    1105    1112    1120
402             RY    1250    1248    1245    1242    1242    1244    1247    1250
                *

403             KK     26S
404             KM   BASIN 26S
405             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
406             KM    L=      1.7  Lca=       .9   S=  534.1  Kn= .050  LAG=  25.3
407             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
408             BA     .29
409             LG     .35     .38    6.40     .15    9.60
410             UI     39.    130.    211.    284.    446.    389.    285.    206.    120.     66.
411             UI     43.     21.     12.     12.     12.      0.      0.      0.      0.      0.
412             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

413             KK    R26S
414             KM        ROUTE FLOW FROM CP26S TO CP27
415             RS       3              -1       0
416             RC     .05     .03     .05   10160   .0206
417             RX      0       6      16      26      31      41      51      57
418             RY    1368    1365    1360    1355    1355    1360    1365    1368
                *

419             KK      27
420             KM   BASIN 27
421             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
422             KM    L=      1.9  Lca=       .9   S=  164.9  Kn= .050  LAG=  33.5
423             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
424             BA     .47
425             LG     .15     .36    6.80     .13   33.40
426             UI     47.     97.    206.    266.    331.    455.    576.    440.    353.    276.
427             UI    212.    121.     81.     61.     47.     14.     14.     14.     14.     14.
428             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
429             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
1                                          HEC-1 INPUT                                          PAGE 12

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

430             KK  I1CP27
431             KM        ADD HYDROGRAPHS AT CP27
```

```
432          HC       3
             *
             * DIVERSION INTO SPORTS COMPLEX OFFLINE BASIN IN SECTION 19
             *

433          KK  DSPOB1
434          KM        CHANNEL OUTLETS THROUGH 1-12 X 8 ARCH CULVERT
435          KM        50' WEIR AT 4.4' FEET ABOVE CHANNEL, APPROXIMATELY 24.4
436          DT   SPOB1
437          DI       0     150     300     560     990    1494    2193
438          DQ       0       0       0     110     390     744    1293
             *
             *   SR27
             *       STORAGE ROUTE THROUGH RETENTION BASIN AT CP27
             *      1    STOR       0       0
             *      0     .13    5.77    9.37   11.42   13.71   19.21
             *      0       0       0       0       0     550    4546
             *   1203    1204    1210    1212    1213    1214    1216
             *

439          KK    CP27
440          KM        ADD REMAINING FLOW OF CP25 & CP27 AT CP27
441          HC       2
             *

442          KK     R27
443          KM        ROUTE COMBINED REMAINDER FLOW AT CP27 TO CP39
444          RS       3              -1       0
445          RC     .03     .03     .05    5928   .0084
446          RX    1000    1010    1020    1025    1055    1085    1175    1250
447          RY    1210    1210    1210    1202    1202    1204    1206    1208
             *

448          KK      34
449          KM   BASIN 34
450          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
451          KM    L=      1.5  Lca=       .7   S=  675.7  Kn= .050  LAG=  21.6
452          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
453          BA     .36
454          LG     .20     .35    3.95     .53   10.00
455          UI     57.    230.    344.    531.    615.    415.    284.    139.     81.     43.
456          UI     17.     17.      0.      0.      0.      0.      0.      0.      0.      0.
457          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

458          KK      33
459          KM   BASIN 33
460          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
461          KM    L=      1.6  Lca=       .8   S=  845.7  Kn= .050  LAG=  22.2
462          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
463          BA     .65
464          LG     .20     .35    3.95     .53   10.00
```



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

465          UI     99.    391.    590.    886.   1120.    769.    536.    291.    160.     94.
466          UI     30.     30.     30.      0.      0.      0.      0.      0.      0.      0.
467          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

468          KK    CP33
469          KM        ADD HYDROGRAPHS AT CP33
470          HC       2
             *

471          KK     R33
472          KM        ROUTE COMBINED HYDROGRAPHS AT CP33 TO CP35
473          RS       2              -1       0
474          RC     .08     .05     .08    4680   .0427
475          RX    1000    1015    1022    1035    1050    1068    1092    1100
476          RY    1800    1760    1720    1680    1680    1720    1760    1800
             *

477          KK      35
478          KM   BASIN 35
479          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
480          KM    L=      1.5  Lca=       .6   S=  614.3  Kn= .050  LAG=  20.5
481          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
482          BA     .39
483          LG     .20     .35    3.95     .53   10.70
484          UI     72.    273.    411.    675.    629.    427.    269.    119.     73.     27.
485          UI     20.     20.      0.      0.      0.      0.      0.      0.      0.      0.
486          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

487          KK  I1CP35
488          KM        ADD HYDROGRAPHS AT CP35
489          HC       2
             *

490          KK      32
491          KM   BASIN 32
492          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
493          KM    L=      2.5  Lca=      1.2   S=  528.4  Kn= .050  LAG=  33.2
```

```
494          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
495          BA    1.29
496          LG     .20     .35    4.35     .44   30.30
497          UI    131.    247.    587.    872.   1128.   1236.   1219.   1063.    821.    631.
498          UI    487.    375.    277.    222.    168.    134.     90.     90.     40.     32.
499          UI     32.     32.     32.     32.      0.      0.      0.      0.      0.      0.
500          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

501          KK    CP35
502          KM        ADD HYDROGRAPHS AT CP35
503          HC       2
             *
1                                          HEC-1 INPUT                                                PAGE 14

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


504          KK     R35
505          KM        ROUTE COMBINED HYDROGRAPHS AT CP35 TO CP36
506          RS       2              -1       0
507          RC     .06    .035     .06    5070   .0355
508          RX    1000    1012    1023    1034    1045    1056    1067    1079
509          RY    1429    1428    1426    1424    1424    1426    1428    1429
             *

510          KK      36
511          KM   BASIN 36
512          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
513          KM    L=      1.2  Lca=       .6   S=  178.0  Kn= .050  LAG=  23.7
514          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
515          BA     .19
516          LG     .16     .35    4.30     .42   10.40
517          UI     27.     98.    153.    214.    321.    237.    171.    115.     54.     36.
518          UI     19.      8.      8.      8.      0.      0.      0.      0.      0.      0.
519          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

520          KK  I1CP36
521          KM        ADD HYDROGRAPHS AT CP36
522          HC       2
             *

523          KK      37
524          KM   BASIN 37
525          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
526          KM    L=      2.3  Lca=      1.0   S=  224.6  Kn= .050  LAG=  35.4
527          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
528          BA     .95
529          LG     .19     .35    4.40     .42   10.70
530          UI     90.    167.    374.    489.    599.    766.   1106.    941.    747.    597.
531          UI    474.    343.    189.    151.    102.     80.     28.     28.     28.     28.
532          UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
533          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

534          KK    CP36
535          KM        ADD HYDROGRAPHS AT CP 36
536          HC       2
             *

537          KK     R36
538          KM        ROUTE COMBINED HYDROGRAPHS AT CP36 TO CP38
539          RS       2              -1       0
540          RC     .05     .03     .05    4836   .0198
541          RX    1000    1008    1020    1032    1050    1112    1135    1183
542          RY    1344    1342    1340    1338    1338    1340    1342    1344
             *
1                                          HEC-1 INPUT                                                PAGE 15

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


543          KK      38
544          KM   BASIN 38
545          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
546          KM    L=      1.3  Lca=       .6   S=  155.0  Kn= .050  LAG=  25.1
547          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
             *     1
548          BA     .42
549          LG     .17     .35    4.30     .43   13.50
550          UI     56.    189.    306.    412.    649.    551.    403.    292.    162.     95.
551          UI     59.     26.     17.     17.      0.      0.      0.      0.      0.      0.
552          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

553          KK    CP38
554          KM        ADD HYDROGRAPHS AT CP38
555          HC       2
             *
             * DIVERSION INTO GOLF OFFLINE BASIN #3 IN SECTION 25\30
             *

556          KK   DGOB3
557          KM            OFFLINE BASIN IN PHASE I GOLF HOLE #2
```

```
558          KM            160' WEIR APPROXIMATELY 2.5' ABOVE ADJACENT FLOWLINE
559          KM            RATING CURVE BASED ON HEC-RAS MODELING OF ADJACENT CHANNEL
560          DT    GOB3      42
561          DI       0    1000    1500    2000    2500    3000    3500    4000    4145    4500
562          DQ       0      10     115     290     460     715     920    1100    1145    1260
             *
             *
             *   SR38
             *       STORAGE ROUTE THROUGH RETENTION BASIN AT CP38
             *      1    STOR       0       0
             *      0    1.83   15.38   39.25   41.76   47.45   60.58
             *      0       0       0       0      44    2223    6550
             *   1275    1280    1290  1297.5    1298    1300    1301
             *

563          KK     R38
564          KM        ROUTE REMAINDER OF FLOW AT CP38 TO CP39
565          RS       3              -1       0
566          RC     .05     .03     .05    5438   .0167
567          RX    1000    1005    1010    1025    1055    1085    1175    1250
568          RY    1212    1211    1210    1202    1202    1204    1206    1208
             *

569          KK      39
570          KM   BASIN 39
571          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
572          KM    L=      2.0  Lca=      1.0   S=   75.6  Kn= .050  LAG=  41.2
573          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
574          BA     .63
575          LG     .15     .35    4.20     .44   23.60
576          UI     51.     64.    185.    252.    299.    359.    446.    630.    568.    454.
577          UI    381.    313.    254.    186.    108.     87.     69.     51.     31.     16.
1                                         HEC-1 INPUT                                          PAGE 16

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

578          UI     16.     16.     16.     16.      0.      0.      0.      0.      0.      0.
579          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

580          KK  I1CP39
581          KM        ADD HYDROGRAPHS AT CP39
582          HC       2
             *

583          KK    CP39
584          KM        ADD HYDROGRAPHS AT CP39
585          HC       2
             *

586          KK     R39
587          KM        ROUTE COMBINED HYDROGRAPH AT CP39 TO CP42
588          RS       2              -1       0
589          RC     .03     .03     .05    4836   .0141
590          RX    1000    1005    1015    1025    1055    1070    1087    1130
591          RY    1143    1142    1140    1132    1132    1136    1140    1142
             *

592          KK      40
593          KM   BASIN 40
594          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
595          KM    L=      1.5  Lca=       .6   S=  264.5  Kn= .050  LAG=  24.0
596          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
597          BA     .51
598          LG     .18     .35    4.00     .50   13.60
599          UI     72.    256.    402.    557.    850.    643.    467.    321.    153.    100.
600          UI     58.     22.     22.     22.      0.      0.      0.      0.      0.      0.
601          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

602          KK   DGOB5
603          KM        2-10X4 CBC'S WITH 400' WEIR AT 1.5 FEET ABOVE CHANNEL BOTTOM
604          DT    GOB5
605          DI       0      55     101     537    1297    2269    4708    7684   11074
606          DQ       0       0       0     382    1080    1984    4269    7072   10310
             *

607          KK     R40
608          KM        ROUTE FLOW FROM CP40 TO CP42
609          RS       4              -1       0
610          RC     .05     .03     .05    6396   .0086
611          RX    1000    1010    1065    1095    1135    1155    1215    1220
612          RY    1115    1114    1112    1110    1110    1112    1113    1113
             *

613          KK      42
614          KM   BASIN 42
615          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
616          KM    L=      2.1  Lca=      1.0   S=   96.2  Kn= .050  LAG=  40.1
617          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
618          BA     .81
1                                         HEC-1 INPUT                                          PAGE 17

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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619          LG     .21     .35    4.70     .31   31.70
620          UI     68.     92.    251.    337.    403.    488.    624.    856.    705.    574.
621          UI    475.    387.    311.    208.    120.    112.     72.     65.     21.     21.
622          UI     21.     21.     21.      0.      0.      0.      0.      0.      0.      0.
623          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

624          KK  I1CP42
625          KM        ADD HYDROGRAPHS AT CP42
626          HC       2
             *

627          KK    CP42
628          KM        ADD HYDROGRAPHS AT CP42
629          HC       2
             *

630          KK    SR42
631          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP42
632          KM        6 FEET OF DEAD STORAGE BELOW BASIN OUTFALL
633          KM        BASIN OUTFALLS THROUGH A 200' WEIR
634          RS       1    STOR       0       0
635          SV       0    31.2    37.5    44.1    51.0    58.1    65.5    73.2
636          SQ       0       0     607    1720    3159    4904    6882    9079
637          SE    1084    1090    1091    1092    1093    1094    1095    1096
             *

638          KK  SR42-2
639          KM        STORAGE ROUTE THROUGH RETENTION BASIN AT CP42
640          KM        3 FEET OF DEAD STORAGE BELOW BASIN OUTFALL
641          KM        BASIN OUTFALLS THROUGH A NATURAL OUTFALL
642          RS       1    STOR       0       0
643          SV       0    18.0    24.3    31.1    38.1    45.4    53.1    61.0    69.3    77.9
644          SV    86.8    95.8   104.8
645          SQ       0       0    19.1    70.0   157.7   287.7   464.9   939.3  1795.0  3047.2
646          SQ  5559.5  9110.8 13417.7
647          SE    1079    1082    1083    1084    1085    1086    1087    1088    1089    1090
648          SE    1091    1092    1093
             *

649          KK     R42
650          KM        ROUTE REMAINDER OF HYDROGRAPH AT CP42 TO CP43
651          RS       1              -1       0
652          RC     .03     .03     .05     858   .0151
653          RX     900     950    1000    1030    1060    1075    1085    1090
654          RY    1091    1088    1086    1084    1084    1086    1088    1091
             *

655          KK    41A1
656          KM   BASIN 41A1
657          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
658          KM    L=        .2  Lca=        .1   S=    90.5  Kn= .050  LAG=    7.3
659          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
660          BA     .02
661          LG     .35     .39    5.80     .18     .00
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

662          UI     34.     86.     29.      5.      0.      0.      0.      0.      0.      0.
663          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

664          KK  SR41A1
665          KM        STORAGE ROUTE THROUGH 30" CMP AT STA 6255+85 ON I-10.
666          RS       1    STOR       0       0
667          SV       0     .43     .53     .63     .74    1.24    1.65    3.40    6.20
668          SQ       0      10      14      18      23      29      33     869    6050
669          SE  1133.4 1134.91 1135.23 1135.58 1135.97 1137.62  1139.0  1140.3 1143.85
             *

670          KK  CP41A1
671          KM        DIVERT FLOW FROM CP41A1 TO CP303
672          DT   1D303
673          DI       0      14      23      33     869    6050
674          DQ       0      14      23      33      35      42
             *

675          KK   R41A1
676          KM        ROUTE REMAINDER FROM CP41A1 TO CP41A2.
677          RS       1              -1       0
678          RC     .06     .03     .04     580   .0093
679          RX     600     800     900     965    1000    1020    1030    1040
680          RY    1147    1143    1142    1141    1141    1143    1145    1145
             *

681          KK    41A2
682          KM   BASIN 41A2
683          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
684          KM    L=        .2  Lca=        .1   S=    87.0  Kn= .050  LAG=    7.9
685          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
686          BA     .03
687          LG     .35     .35    4.25     .39     .00
688          UI     44.    122.     54.     10.      0.      0.      0.      0.      0.      0.
689          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

```
                *

690             KK  CP41A2
691             KM        ADD HYDROGRAPHS AT CP41A2.
692             HC       2     .05
                *

693             KK  SR41A2
694             KM        STORAGE ROUTE THROUGH 30" CMP AT STA 6261+65 ON I-10.
695             RS       1    STOR       0       0
696             SV       0     .10     .24     .31     .62    1.72
697             SQ       0       8      19      24     624    2104
698             SE  1132.7 1134.07 1134.98 1135.56 1137.34 1139.65
                *
```



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

699             KK   D41A2
700             KM        DIVERT FLOW FROM CP41A2 TO CP303
701             DT   2D303
702             DI       0       8      19      24     624    2104
703             DQ       0       8      19      24      30      36
                *

704             KK   R41A2
705             KM        ROUTE REMAINDER FROM CP41A2 TO CP41A3.
706             RS       1              -1       0
707             RC     .06     .03     .04     595   .0093
708             RX     600     800     900     965    1000    1020    1030    1040
709             RY    1140    1136    1135    1134    1134    1136    1138    1140
                *

710             KK    41A3
711             KM   BASIN 41A3
712             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
713             KM    L=       .3  Lca=       .1   S=   84.6  Kn= .050  LAG=   8.6
714             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
715             BA     .03
716             LG     .35     .35    3.95     .44     .00
717             UI     37.    112.     65.     14.      4.      0.      0.      0.      0.      0.
718             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

719             KK  CP41A3
720             KM        ADD HYDROGRAPHS AT CP41A3.
721             HC       2     .08
                *

722             KK  SR41A3
723             KM        STORAGE ROUTE THROUGH 30" CMP AT STA 6267+60 ON I-10
724             RS       1    STOR       0       0
725             SV       0     .86    1.05    1.25    1.48    2.51    2.84    4.15    5.46    8.08
726             SQ       0      10      14      18      23      29      32     254     654     896
727             SE  1128.6 1130.13 1130.45 1130.80 1131.19 1132.94  1133.5  1134.0  1134.5 1135.57
                *

728             KK   D41A3
729             KM        DIVERT FLOW FROM CP41A3 TO CP303
730             DT   3D303
731             DI       0      10      14      18      23      29      32     254     659    1896
732             DQ       0      10      14      18      23      29      32      33      34      35
                *

733             KK   R41A3
734             KM        ROUTE REMAINDER FROM CP41A3 TO CP41A.
735             RS       1              -1       0
736             RC     .06     .03     .04     628   .0093
737             RX     600     800     900     965    1000    1020    1030    1040
738             RY    1135    1131    1130    1129    1129    1131    1133    1133
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

739             KK     41A
740             KM   BASIN 41A
741             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
742             KM    L=       .3  Lca=       .2   S=   91.2  Kn= .050  LAG=  10.3
743             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
744             BA     .05
745             LG     .35     .35    3.95     .44     .00
746             UI     44.    138.    136.     50.     13.      5.      0.      0.      0.      0.
747             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

748             KK   CP41A
749             KM        ADD HYDROGRAPHS AT CP41A.
750             HC       2     .13
                *

751             KK   SR41A
752             KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6273+88 ON I-10
```

```
753          RS       1    STOR       0       0
754          SV       0    1.22    2.65    3.07    3.20    4.78    6.37    7.96    9.57
755          SQ       0      10      36      44      45     312     799    1429    2047
756          SE  1124.4 1125.75 1127.38 1127.86  1128.0  1128.5  1129.0  1129.5 1129.92
             *

757          KK    D41A
758          KM        DIVERT FLOW FROM CP41A TO CP303
759          DT   4D303
760          DI       0      10      36      44      45     312     799    1429    2047
761          DQ       0      10      36      44      45      47      49      51      52
             *

762          KK    R41A
763          KM        ROUTE REMAINDER FROM CP41A TO CP41-1.
764          RS       1              -1       0
765          RC     .06     .03     .04    1437   .0093
766          RX     600     800     900     965    1000    1020    1030    1040
767          RY    1122    1118    1117    1116    1116    1118    1120    1120
             *

768          KK    41-1
769          KM   BASIN 41-1
770          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
771          KM    L=       .6  Lca=       .3   S=   74.6  Kn= .050  LAG=  16.8
772          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
773          BA     .15
774          LG     .35     .35    3.95     .44     .00
775          UI     46.    150.    249.    324.    201.    108.     45.     20.      9.      9.
776          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
777          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```



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

778          KK  CP41-1
779          KM        ADD HYDROGRAPHS AT CP41-1
780          HC       2     .28
             *

781          KK  SR41-1
782          KM        STORAGE ROUTE THROUGH 2-36" CMP AT STA 6288+25 ON I-10.
783          RS       1    STOR       0       0
784          SV       0     .73    3.47    3.94    4.53    5.12    5.71
785          SQ       0      10      36      44     489    1300    2348
786          SE  1112.7 1114.08 1115.71    1116  1116.5    1117  1117.5
             *

787          KK   D41-1
788          KM        DIVERT FLOW FROM CP41-1 TO CP303
789          DT   5D303
790          DI       0      10      36      44     489    1300    2348
791          DQ       0      10      36      44      47      50      52
             *

792          KK   R41-1
793          KM        ROUTE REMAINDER FROM CP41-1 TO CP41-2.
794          RS       1              -1       0
795          RC     .06     .03     .04    1697   .0075
796          RX     600     800     900     965    1000    1020    1030    1040
797          RY    1104    1102    1101    1100    1100    1102    1104    1105
             *

798          KK    41-2
799          KM   BASIN 41-2
800          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
801          KM    L=       .7  Lca=       .3   S=   81.1  Kn= .050  LAG=  16.7
802          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
803          BA     .10
804          LG     .35     .35    3.95     .44     .00
805          UI     31.    101.    169.    216.    133.     70.     30.     13.      6.      0.
806          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
807          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

808          KK  CP41-2
809          KM        ADD HYDROGRAPHS AT CP41-2
810          HC       2     .38
             *

811          KK  SR41-2
812          KM        STORAGE ROUTE THROUGH 2-42" CMP AT STA 6305+22 ON I-10.
813          RS       1    STOR       0       0
814          SV       0     .84    1.23    1.78    2.46    3.31    4.34    5.61    7.63   11.57
815          SV   13.47   15.30   19.63   19.01
816          SQ       0      10      14      18      23      29      35      42      50      56
817          SQ     201     419     469    1836
818          SE  1099.2 1100.45  1100.7 1100.96 1101.23  1101.5 1101.83 1102.17 1102.83  1103.5
819          SE  1103.8    1104  1104.5 1104.95
             *
```



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

```
820          KK   D41-2
821          KM        DIVERT FLOW FROM CP41-2 TO CP303
822          DT   6D303
823          DI       0       10       14       18       23       29       35       42       50       56
824          DI     201      419      469     1836
825          DQ       0       10       14       18       23       29       35       42       50       56
826          DQ      59       61       64       68
             *

827          KK   R41-2
828          KM        ROUTE REMAINDER FROM CP41-2 TO CP41.
829          RS       1                -1        0
830          RC     .06      .03      .04      978    .0053
831          RX     650      800      850      965     1000     1020     1030     1040
832          RY    1100     1099     1098     1096     1096     1098     1100     1101
             *

833          KK      41
834          KM   BASIN 41
835          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
836          KM    L=       1.6  Lca=        .8   S=   81.5  Kn= .050  LAG=  34.7
837          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
838          BA     .58
839          LG     .21      .35     4.15      .44      .00
840          UI     56.     108.     238.     309.     382.     496.     699.     562.     450.     357.
841          UI    282.     192.     102.      90.      56.      38.      17.      17.      17.      17.
842          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
843          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

844          KK    CP41
845          KM        ADD HYDROGRAPHS AT CP41
846          HC       2     .68
             *

847          KK    SR41
848          KM        STORAGE ROUTE THROUGH 2-36" CMP AT STA 6315+00 ON I-10.
849          RS       1    STOR        0        0
850          SV       0     .09      .37      .86     2.15     2.99     4.92     5.83     7.92    11.06
851          SV   15.07
852          SQ       0        8       11       15       24       30       36       42       43      400
853          SQ    1219
854          SE  1094.6 1095.91 1096.15 1096.42 1096.99 1097.30 1097.91 1099.12  1099.5  1100.0
855          SE  1100.6
             *

856          KK     D41
857          KM        DIVERT FLOW FROM CP41 TO CP303
858          DT   7D303
859          DI       0        8       11       15       24       30       36       42       43      400
860          DI    1219
861          DQ       0        8       11       15       24       30       36       42       43       46
862          DQ      50
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

863          KK     R41
864          KM        ROUTE REMAINDER FROM CP41 TO CP43-1.
865          RS       1                -1        0
866          RC     .06      .03      .04      700    .0053
867          RX     650      800      850      965     1000     1020     1030     1040
868          RY    1098     1097     1096     1094     1094     1096     1098     1099
             *

869          KK    43-1
870          KM   BASIN 43-1
871          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
872          KM    L=        .4  Lca=        .2   S=   50.0  Kn= .050  LAG=  12.1
873          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
874          BA     .04
875          LG     .35      .35     3.95      .44      .00
876          UI     25.      74.     117.      63.      21.       7.       3.       0.       0.       0.
877          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

878          KK  CP43-1
879          KM        ADD HYDROGRAPHS AT CP43-1
880          HC       2     1.0
             *

881          KK  SR43-1
882          KM        STORAGE ROUTE THROUGH 5-48" CMP FROM STA 6319+32 TO STA 6324+32 ON I-10.
883          RS       1    STOR        0        0
884          SV       0     .37      .80     1.58     2.71     4.54     5.86     7.60    12.33    14.79
885          SV   21.44
886          SQ       0       32       60      102      120      220      260      301      357      501
887          SQ    1057
888          SE  1091.7 1092.82 1093.25 1093.72 1094.21 1094.77 1095.08 1095.43 1096.19  1096.5
889          SE  1097.0
             *
```

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890          KK   D43-1
891          KM        DIVERT FLOW FROM CP43-1 TO CP303A
892          DT  1D303A
893          DI       0      32      60     102     120     220     260     301     357     501
894          DI    1057
895          DQ       0      32      60     102     120     220     260     301     357     378
896          DQ     417
             *

897          KK   R43-1
898          KM        ROUTE REMAINDER FROM CP43-1 TO CP43-2.
899          RS       1              -1       0
900          RC     .06     .03     .04     500    .005
901          RX     600     725     800     965    1000    1020    1030    1040
902          RY    1095    1094  1093.5    1093    1093    1094    1096    1097
             *
1                                          HEC-1 INPUT                                                    PAGE 24

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

903          KK    43-2
904          KM   BASIN 43-2
905          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
906          KM    L=        .3  Lca=       .2   S=   60.0  Kn= .050  LAG=  10.2
907          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
908          BA     .01
909          LG     .35     .35    3.95     .44     .00
910          UI      9.     28.     27.     10.      2.      1.      0.      0.      0.      0.
911          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

912          KK  CP43-2
913          KM        ADD HYDROGRAPHS AT CP43-2
914          HC       2    1.01
             *

915          KK  SR43-2
916          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6326+40 ON I-10.
917          RS       1    STOR       0       0
918          SV       0     .12     .38     .71    1.11    1.61    3.12    3.95    5.19    6.02
919          SQ       0       8      12      15      20      24      36      38     128     222
920          SE    1092 1093.28 1093.52 1093.78 1094.05 1094.35 1095.13  1095.5  1096.0  1096.3
             *

921          KK   D43-2
922          KM        DIVERT FLOW FROM CP43-2 TO CP303A
923          DT  2D303A
924          DI       0       8      12      15      20      24      36      38     128     222
925          DQ       0       8      12      15      20      24      36      38      40      43
             *

926          KK   R43-2
927          KM        ROUTE REMAINDER FROM CP43-2 TO CP43-3.
928          RS       1              -1       0
929          RC     .06     .03     .04    1000    .003
930          RX     750     800     900     965    1000    1020    1030    1040
931          RY  1096.5    1096    1094    1093    1093    1094    1096    1097
             *

932          KK    43-3
933          KM   BASIN 43-3
934          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
935          KM    L=        .2  Lca=       .1   S=   75.0  Kn= .050  LAG=   8.2
936          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
937          BA     .05
938          LG     .35     .35    4.30     .40     .00
939          UI     70.    200.     99.     20.      0.      0.      0.      0.      0.      0.
940          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
1                                          HEC-1 INPUT                                                    PAGE 25

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

941          KK  CP43-3
942          KM        ADD HYDROGRAPHS AT CP43-3.
943          HC       2    1.06
             *

944          KK  SR43-3
945          KM        STORAGE ROUTE THROUGH 3-36" CMPS FROM STA 6330+50 TO STA 6340+10 ON I-10
946          RS       1    STOR       0       0
947          SV       0    2.47    3.51    4.85    6.37    8.27   10.69   13.89   18.76   30.99
948          SQ       0      27      36      48      63      78      93     165     364     951
949          SE  1092.8 1094.12 1094.37 1094.65 1094.93 1095.24 1095.59    1096 1096.56 1097.79
             *

950          KK   D43-3
951          KM        DIVERT FLOW FROM CP43-3 TO CP303A
952          DT  3D303A
953          DI       0      27      36      48      63      78      93     165     364     951
954          DQ       0      27      36      48      63      78      93     102     114     135
             *
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```
 955          KK   R43-3
 956          KM        ROUTE REMAINDER FROM CP43-3 TO CP43-4.
 957          RS       1              -1       0
 958          RC     .06      .03      .04     800     .018
 959          RX     800      850      930     965    1000    1020    1030    1040
 960          RY  1096.5     1096     1094    1093    1093    1096    1097  1097.5
              *

 961          KK    43-4
 962          KM   BASIN 43-4
 963          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 964          KM    L=        .2  Lca=        .1   S=   63.6  Kn= .050  LAG=   8.0
 965          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 966          BA     .03
 967          LG     .35      .35     4.25     .39     .00
 968          UI     43.     121.      55.     11.      0.      0.      0.      0.      0.      0.
 969          UI      0.       0.       0.      0.      0.      0.      0.      0.      0.      0.
              *

 970          KK  CP43-4
 971          KM        ADD HYDROGRAPHS AT CP43-4
 972          HC       2    1.09
              *

 973          KK  SR43-4
 974          KM        STORAGE ROUTE THROUGH 2-36" CMPS FROM STA 6343+25 TO STA 6345+65 ON I10
 975          RS       1    STOR       0       0
 976          SV       0     .89    1.27     1.8    2.43    3.24    3.31    4.75    7.05   12.83
 977          SQ       0      18      24      32      42      52      62     131     326     906
 978          SE  1092.8 1094.12 1094.37 1094.65 1094.93 1095.24 1095.59    1096 1096.56 1097.79
              *
```



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

 979          KK   D43-4
 980          KM        DIVERT FLOW AT STA 6345+65
 981          DT  1DWT#4
 982          DI       0      18      24      32      42      52      62     131     326     906
 983          DQ       0      18      24      32      42      52      62      68      76      90
              *

 984          KK   R43-4
 985          KM        ROUTE REMAINDER FROM CP43-4 TO CP43-5
 986          RS       1              -1       0
 987          RC     .06      .03      .04     500     .018
 988          RX     800      850      930     965    1000    1020    1030    1040
 989          RY  1096.5     1096     1094    1093    1093    1096    1097  1097.5
              *

 990          KK    43-5
 991          KM   BASIN 43-5
 992          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 993          KM    L=        .2  Lca=        .1   S=   54.5  Kn= .050  LAG=   8.2
 994          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 995          BA     .02
 996          LG     .35      .35     4.60     .31     .00
 997          UI     27.      78.      39.      8.      0.      0.      0.      0.      0.      0.
 998          UI      0.       0.       0.      0.      0.      0.      0.      0.      0.      0.
              *

 999          KK  CP43-5
1000          KM        ADD HYDROGRAPHS AT CP43-5
1001          HC       2    1.11
              *

1002          KK  SR43-5
1003          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6349+45 ON I-10
1004          RS       1    STOR       0       0
1005          SV       0     .09     .24     .44     .69     1.0    1.42    2.14    2.76    3.73
1006          SV    4.84    5.94
1007          SQ       0       9      13      17      22      27      34      40      42      44
1008          SQ     134     276
1009          SE  1089.8  1091.1 1091.35 1091.64 1091.94 1092.26 1092.62 1093.13  1093.5    1094
1010          SE  1094.5 1094.94
              *

1011          KK   D43-5
1012          KM        DIVERT FLOW AT STA 6349+45.
1013          DT  2DWT#4
1014          DI       0       9      13      17      22      27      34      40      42      44
1015          DI     134     276
1016          DQ       0       9      13      17      22      27      34      40      42      44
1017          DQ      46      48
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1018          KK   R43-5
1019          KM        ROUTE REMAINDER FROM CP43-5 TO CP43-6
1020          RS       1              -1       0
```

```
1021          RC     .06     .03     .04     455   .0068
1022          RX     800     850     930     965    1000    1020    1030    1040
1023          RY    1096    1094    1093    1092    1092    1094    1096  1097.5
              *

1024          KK    43-6
1025          KM   BASIN 43-6
1026          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1027          KM    L=       .2  Lca=       .1   S=   63.2  Kn= .050  LAG=   7.3
1028          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1029          BA     .02
1030          LG     .35     .35    4.45     .34     .00
1031          UI     34.     86.     29.      5.      0.      0.      0.      0.      0.      0.
1032          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1033          KK  CP43-6
1034          KM        ADD HYDROGRAPHS AT CP43-6
1035          HC       2    1.13
              *

1036          KK  SR43-6
1037          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6354+00 ON I-10
1038          RS       1    STOR       0       0
1039          SV       0    1.59    2.29    3.18    4.29    5.62    7.39    9.53   14.20   30.25
1040          SV   32.52      38   43.84   49.83   55.96   59.96
1041          SQ       0       9      13      17      22      27      33      39      47      55
1042          SQ      56     141     325     811    1440    2714
1043          SE  1089.3  1090.6 1090.84 1091.12 1091.42 1091.73 1092.09 1092.47 1093.23 1095.27
1044          SE  1095.5    1096  1096.5  1097.0  1097.5 1097.82
              *

1045          KK   D43-6
1046          KM        DIVERT FLOW AT STA 6354+00.
1047          DT  3DWT#4
1048          DI       0       9      13      17      22      27      33      39      47      55
1049          DI      56     141     325     811    1440    2714
1050          DQ       0       9      13      17      22      27      33      39      47      55
1051          DQ      56      58      60      61      62      64
              *

1052          KK   R43-6
1053          KM        ROUTE REMAINDER FROM CP43-6 TO CP43-7
1054          RS       1              -1       0
1055          RC     .06     .03     .04     300   .0162
1056          RX     750     800     930     965    1000    1020    1030    1040
1057          RY    1096    1094    1092    1090    1090    1092    1096  1097.5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1058          KK    43-7
1059          KM   BASIN 43-7
1060          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1061          KM    L=       .2  Lca=       .1   S=   75.0  Kn= .050  LAG=   6.1
1062          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1063          BA     .02
1064          LG     .35     .35    4.60     .31     .00
1065          UI     49.     90.     14.      0.      0.      0.      0.      0.      0.      0.
1066          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1067          KK  CP43-7
1068          KM        ADD HYDROGRAPHS AT CP43-7
1069          HC       2    1.15
              *

1070          KK  SR43-7
1071          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6357+00 ON I-10
1072          RS       1    STOR       0       0
1073          SV       0     .27     .39     .55     .74     .98    1.30    1.78    2.23    5.12
1074          SQ       0      10      13      18      23      29      35      38     101     892
1075          SE  1087.6 1088.93 1089.20 1089.49 1089.80 1090.13 1090.51  1091.0 1091.39 1093.26
              *

1076          KK   D43-7
1077          KM        DIVERT FLOW AT STA 6357+00.
1078          DT  4DWT#4
1079          DI       0      10      13      18      23      29      35      38     101     892
1080          DQ       0      10      13      18      23      29      35      38      40      42
              *

1081          KK   R43-7
1082          KM        ROUTE REMAINDER FROM CP43-7 TO CP43-8
1083          RS       1              -1       0
1084          RC     .06     .03     .04     385    .018
1085          RX     700     800     850     965    1000    1020    1030    1040
1086          RY    1094    1093    1092    1090    1090    1092    1096  1097.5
              *

1087          KK    43-8
1088          KM   BASIN 43-8
1089          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
1090          KM    L=       .1  Lca=       .1   S=   76.9  Kn= .050  LAG=   5.3
1091          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1092          BA     .01
1093          LG     .35     .35    4.60     .31     .00
1094          UI     34.     39.      4.      0.      0.      0.      0.      0.      0.      0.
1095          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                          HEC-1 INPUT                                          PAGE 29

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


1096          KK  CP43-8
1097          KM        ADD HYDROGRAPHS AT CP43-8
1098          HC       2    1.16
              *

1099          KK  SR43-8
1100          KM        STORAGE ROUTE THROUGH 36" CMP AT STA 6360+85 ON I-10
1101          RS       1    STOR       0       0
1102          SV       0     .22     .32     .46     .63     .89    1.74    3.41    4.93     6.3
1103          SV    6.87
1104          SQ       0       8      12      15      20      24      30      36      39     129
1105          SQ     186
1106          SE  1085.1 1086.38 1086.62 1086.88 1087.15 1087.48 1088.28 1089.33  1090.0  1090.5
1107          SE  1090.7
              *

1108          KK   D43-8
1109          KM        DIVERT FLOW AT STA 6360+85.
1110          DT  5DWT#4
1111          DI       0       8      12      15      20      24      30      36      39     129
1112          DI     186
1113          DQ       0       8      12      15      20      24      30      36      39      41
1114          DQ      43
              *

1115          KK   R43-8
1116          KM        ROUTE REMAINDER FROM CP43-8 TO CP43.
1117          RS       1              -1       0
1118          RC     .06     .03     .04     600    .008
1119          RX     800     850     930     965    1000    1020    1030    1040
1120          RY    1096    1092    1090    1088    1088    1090    1096  1097.5
              *

1121          KK      43
1122          KM   BASIN 43
1123          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1124          KM    L=       .2  Lca=       .1   S=   94.1  Kn= .050  LAG=   6.2
1125          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1126          BA     .01
1127          LG     .35     .35    4.35     .37     .00
1128          UI     24.     45.      8.      0.      0.      0.      0.      0.      0.      0.
1129          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1130          KK  I1CP43
1131          KM        ADD HYDROGRAPHS AT CP43
1132          HC       2    1.17
              *
1                                          HEC-1 INPUT                                          PAGE 30

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


1133          KK    CP43     .03
1134          KM        ADD HYDROGRAPHS AT CP43.
1135          HC       2   13.90
              *

1136          KK    SR43
1137          KM        STORAGE ROUTE THROUGH 4-10X8 BC'S AT STA 6366+85 ON I-10.
1138          RS       1    STOR       0       0
1139          SV       0     .52    4.33   16.22   24.89   28.79   33.09   37.88   42.63   49.69
1140          SV   56.35
1141          SQ       0     920    1824    2976    3396    4770    4375    5215    6275    7575
1142          SQ   11000
1143          SE  1081.2 1085.18 1087.60 1090.19  1091.5  1092.0  1092.5    1093  1093.5    1094
1144          SE  1094.5
              *

1145          KK    D43
1146          KM        DIVERT FLOW AT STA 6366+85 ON I-10 (TUTHILL DIKE).
1147          DT  DI45-1
1148          DI       0     920    1824    2976    3396    3713    4176    4734    6464
1149          DQ       0       0       0       0       0     177     500     918    2096
              *

1150          KK    RD43
1151          KM        ROUTE REMAINDER FROM FROM CP43 TO CPWT4.
1152          RS       2              -1       0
1153          RC     .05     .03     .05    4000   .0083
1154          RX     800     900     965    1000    1050    1100    1200    1300
1155          RY    1076    1075    1075    1064    1064    1071    1071    1075
              *
```

```
1156          KK   D43-4
1157          KM        RETURN DIVERT AT CP43-4
1158          DR  1DWT#4
              *

1159          KK  RD43-4
1160          KM        ROUTE DIVERTED FLOW FROM CP43-4 TO CPWT4
1161          RS       2              -1       0
1162          RC    .045     .03    .045    4200   .0067
1163          RX     910     940     970     990    1000    1020    1060    1100
1164          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1165          KK   D43-5
1166          KM        RETURN DIVERT AT CP43-5
1167          DR  2DWT#4
              *
```



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

1168          KK  RD43-5
1169          KM        ROUTE DIVERTED FLOW FROM CP43-5 TO CPWT4
1170          RS       2              -1       0
1171          RC    .045     .03    .045    4100   .0067
1172          RX     910     940     970     990    1000    1020    1060    1100
1173          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1174          KK  I1CWT4
1175          KM        ADD HYDROGRAPHS AT CPWT4
1176          HC       2     .05
              *

1177          KK   D43-6
1178          KM        RETURN DIVERT AT CP43-6
1179          DR  3DWT#4
              *

1180          KK  RD43-6
1181          KM        ROUTE DIVERTED FLOW FROM CP43-6 TO CPWT4
1182          RS       2              -1       0
1183          RC    .045     .03    .045    4000   .0067
1184          RX     910     940     970     990    1000    1020    1060    1100
1185          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1186          KK  I2CWT4
1187          KM        ADD HYDROGRAPHS AT CPWT4
1188          HC       2     .07
              *

1189          KK   D43-7
1190          KM        RETURN DIVERT AT CP43-7
1191          DR  4DWT#4
              *

1192          KK  RD43-7
1193          KM        ROUTE DIVERTED FLOW FROM CP43-7 TO CPWT4
1194          RS       2              -1       0
1195          RC    .045     .03    .045    4000   .0067
1196          RX     910     940     970     990    1000    1020    1060    1100
1197          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1198          KK  I3CWT4
1199          KM        ADD HYDROGRAPHS AT CPWT4
1200          HC       2     .09
              *
```



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

1201          KK   D43-8
1202          KM        RETURN DIVERT AT CP43-8
1203          DR  5DWT#4
              *

1204          KK  RD43-8
1205          KM        ROUTE DIVERTED FLOW FROM CP43-8 TO CPWT4
1206          RS       2              -1       0
1207          RC    .045     .03    .045    4000   .0067
1208          RX     910     940     970     990    1000    1020    1060    1100
1209          RY    1064    1063    1062    1060    1060    1062    1063    1064
              *

1210          KK  I4CWT4
1211          KM        ADD HYDROGRAPHS AT CPWT4
1212          HC       2     .10
              *
              * ************************************************************************
              * ***THE FOLLOWING SECTION TAKEN FROM NEW SUPER BASIN 24 WITH NEW SOILS*****
```

```
                 * ************************************************************************
                 *
1213             KK      44
1214             KM   BASIN 44
1215             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1216             KM    L=        .8  Lca=        .5   S=   59.2  Kn= .050  LAG=  22.2
1217             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1218             BA     .22
1219             LG     .35     .35    4.40     .36     .00
1220             UI     33.    132.    200.    300.    379.    260.    181.     99.     54.     32.
1221             UI     10.     10.     10.      0.      0.      0.      0.      0.      0.      0.
1222             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *

1223             KK  I5CWT4
1224             KM        ADD HYDROGRAPHS AT CPWT4
1225             HC       2     .32
                 *

1226             KK    CP44
1227             KM        ADD HYDROGRAPHS AT CPWT4.
1228             HC       2   14.12
                 *

1229             KK    45-1
1230             KM   BASIN 45-1
1231             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1232             KM    L=        .6  Lca=        .2   S=   84.7  Kn= .050  LAG=  14.7
1233             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1234             BA     .08
1235             LG     .21     .35    4.45     .37     .00
1236             UI     33.    101.    188.    155.     87.     32.     13.      6.      0.      0.
1237             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
1                                          HEC-1 INPUT                                          PAGE 33

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


1238             KK    D43
1239             KM        RETURN DIVERT AT CP43
1240             DR  DI45-1
                 *

1241             KK  CP45-1
1242             KM        ADD HYDROGRAPHS AT CP45-1
1243             HC       2   13.98
                 *

1244             KK  SR45-1
1245             KM        STORAGE ROUTE THROUGH 1-12X12 BC, 2-42" CMP AND 3-36" CMP FROM STA. 6368
1246             KM        +00 TO STA. 6375+20 ON I-10 (100' TO 800' EAST OF TUTHILL RD.).
1247             RS       1    STOR       0       0
1248             SV       0     .85    2.23    5.73   11.22   14.61   19.71
1249             SQ       0      51     156    1200    3130    4161    5509
1250             SE  1083.1 1084.78    1086  1087.4  1089.0  1089.5  1090.0
                 *

1251             KK   D45-1
1252             KM        DIVERT FLOW AT STA 6375+20
1253             DT  7DWT#4
1254             DI       0      51     156    1200    3130    4161    5509
1255             DQ       0      51     156     305     480     543     610
                 *

1256             KK   R45-1
1257             KM        ROUTE REMAINDER FROM CP45-1 TO CP45
1258             RS       1              -1       0
1259             RC     .04     .03     .04    1200   .0042
1260             RX     850     900     930     965    1000    1020    1030    1040
1261             RY    1086    1085    1084    1083    1083    1086    1090    1091
                 *

1262             KK      45
1263             KM   BASIN 45
1264             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1265             KM    L=        .1  Lca=        .8   S= 1110.0  Kn= .050  LAG=   7.3
1266             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1267             BA     .38
1268             LG     .17     .35    4.70     .31     .00
1269             UI    647.   1636.    554.     86.      0.      0.      0.      0.      0.      0.
1270             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *

1271             KK    CP45
1272             KM        ADD HYDROGRAPHS AT CP45
1273             HC       2   14.36
                 *
1                                          HEC-1 INPUT                                          PAGE 34

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


1274             KK    SR45
```

```
1275          KM        STORAGE ROUTE THROUGH 9-36" CMP'S FROM STA 6379+84 TO STA 6390+50 ON
1276          KM        I-10.
1277          RS       1    STOR       0       0
1278          SV       0    1.84    5.95   18.55   23.27   29.04    30.0
1279          SQ       0      41     132     317    1462    3517  3900.0
1280          SE  1081.1 1082.74  1084.0  1086.0  1086.5  1087.0  1088.5
              *

1281          KK     D45
1282          KM        DIVERT FLOW AT STA 6390+50.
1283          DT  8DWT#4
1284          DI       0      41     132     317    1462    3517
1285          DQ       0      41     132     317     362     392
              *

1286          KK     R45
1287          KM        ROUTE REMAINDER FROM CP45 TO CP46-1.
1288          RS       1              -1       0
1289          RC     .04     .03     .04    1500   .0031
1290          RX     850     900     930     965    1000    1020    1030    1040
1291          RY    1086    1082    1081    1080    1080    1082    1083    1086
              *

1292          KK    46-1
1293          KM   BASIN 46-1
1294          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1295          KM    L=      1.2  Lca=       .5   S=   61.9  Kn= .050  LAG=  27.1
1296          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1297          BA     .15
1298          LG     .19     .35    4.00     .47     .00
1299          UI     19.     51.    108.    152.    175.    169.    134.     97.     71.     51.
1300          UI     37.     27.     20.     13.     11.      5.      5.      5.      5.      0.
1301          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1302          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1303          KK  CP46-1
1304          KM        ADD HYDROGRAPHS AT CP46-1
1305          HC       2   14.51
              *

1306          KK  SR46-1
1307          KM        STORAGE ROUTE THROUGH 5-36 CMP'S FROM STA 6395+75 TO STA 6400+60 ON
1308          KM        I-10.
1309          RS       1    STOR       0       0
1310          SV       0    1.07    4.71     9.0    11.7   14.88   18.65   23.01
1311          SQ       0      39     128     183     199     610    1351    5000
1312          SE  1078.3    1080  1081.5  1082.5  1083.0  1083.5  1084.0  1084.5
              *
```



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

1313          KK   D46-1
1314          KM        DIVERT FLOW AT STA 6400+60.
1315          DT  9DWT#4
1316          DI       0      39     128     183     199     610    1351    2310
1317          DQ       0      39     128     183     199     210     225     244
              *

1318          KK   R46-1
1319          KM        ROUTE REMAINDER FROM CP46-1 TO CP46.
1320          RS       1              -1       0
1321          RC     .04     .03     .04    2355   .0057
1322          RX     700     900     930     965    1000    1020    1030    1040
1323          RY    1076  1075.5    1075    1074    1074    1078    1080    1082
              *

1324          KK      46
1325          KM   BASIN 46
1326          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1327          KM    L=      2.4  Lca=      1.1   S=   59.3  Kn= .050  LAG=  47.9
1328          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1329          BA     .85
1330          LG     .19     .35    4.15     .44     .00
1331          UI     60.     60.    151.    258.    355.    439.    514.    556.    573.    554.
1332          UI    514.    430.    355.    299.    249.    208.    173.    142.    118.    101.
1333          UI     88.     63.     62.     41.     41.     41.     19.     15.     15.     15.
1334          UI     15.     15.     15.     15.     15.      0.      0.      0.      0.      0.
1335          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1336          KK  I1CP46
1337          KM        ADD HYDROGRAPHS AT CP46
1338          HC       2   15.36
              *

1339          KK      28
1340          KM   BASIN 28
1341          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1342          KM    L=      1.7  Lca=       .9   S=   64.2  Kn= .050  LAG=  38.1
1343          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1344          BA     .86
1345          LG     .15     .35    4.10     .46     .00
```

```
1346          UI     76.    119.    295.    391.    469.    578.    795.    931.    712.    588.
1347          UI    474.    382.    273.    154.    127.     90.     76.     25.     23.     23.
1348          UI     23.     23.      0.      0.      0.      0.      0.      0.      0.      0.
1349          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1350          KK     R28
1351          KM        ROUTE FLOW FROM CP28 TO CP30
1352          RS       2              -1
1353          RC     .03     .03     .05    2400    .027
1354          RX    1000    1001    1035    1050    1065    1075    1085    1095
1355          RY    1165    1165    1164    1162    1162    1164    1166    1168
              *
1                                          HEC-1 INPUT                                          PAGE 36

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

1356          KK      30
1357          KM   BASIN 30
1358          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1359          KM    L=      1.1  Lca=       .5   S=   60.9  Kn= .050  LAG=  26.3
1360          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1361          BA     .17
1362          LG     .15     .35    3.95     .49   29.60
1363          UI     22.     68.    114.    151.    231.    236.    171.    125.     85.     41.
1364          UI     29.     18.      7.      7.      7.      0.      0.      0.      0.      0.
1365          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1366          KK  I1CP30
1367          KM        ADD HYDROGRAPHS AT CP30
1368          HC       2
              *

1369          KK      29
1370          KM   BASIN 29
1371          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1372          KM    L=       .9  Lca=       .4   S=   55.6  Kn= .050  LAG=  22.8
1373          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1374          BA     .19
1375          LG     .15     .35    3.95     .49   34.60
1376          UI     28.    108.    164.    239.    328.    230.    162.     99.     48.     31.
1377          UI     12.      9.      9.      0.      0.      0.      0.      0.      0.      0.
1378          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *   SR29
              *       STORAGE ROUTE THROUGH RETENTION BASIN AT CP29
              *      1    STOR       0       0
              *      0    0.99   12.73   23.45   36.25   50.68   54.76   59.33   83.20
              *      0       0       0       0       0       0       0      88    6226
              * 1164.5    1166    1170    1172    1174    1176  1177.5    1178    1180
              *

1379          KK     R29
1380          KM        ROUTE REMAINDER OF FLOW AT CP29 TO CP30
1381          RS       1              -1       0
1382          RC     .05     .03     .05    1200   .0021
1383          RX    1000    1042    1052    1060    1082    1090    1140    1170
1384          RY    1171    1170    1168    1166    1166    1168    1170    1172
              *

1385          KK    CP30
1386          KM        ADD HYDROGRAPHS AT CP30
1387          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 37

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

1388          KK     R30
1389          KM        ROUTE COMBINED HYDROGRAPHS AT CP30 TO CP31
1390          RS       4              -1       0
1391          RC     .03     .03     .05    6770   .0069
1392          RX    1000    1025    1045    1070    1095    1110    1200    1550
1393          RY    1157    1156    1154    1152    1152    1154    1156    1158
              *

1394          KK      31
1395          KM   BASIN 31
1396          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1397          KM    L=      1.8  Lca=       .9   S=   56.7  Kn= .050  LAG=  39.8
1398          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1399          BA     .71
1400          LG     .19     .35    4.00     .47     .00
1401          UI     60.     83.    223.    299.    358.    434.    565.    751.    612.    500.
1402          UI    412.    335.    268.    171.    105.     97.     60.     52.     18.     18.
1403          UI     18.     18.     18.      0.      0.      0.      0.      0.      0.      0.
1404          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1405          KK    CP31
1406          KM        ADD HYDROGRAPHS AT CP31
1407          HC       2
```

```
                *
1408            KK     R31
1409            KM        ROUTE COMBINED HYDROGRAPH AT CP31 TO CP46
1410            RS       5              -1       0
1411            RC     .03     .03     .05    5800   .0082
1412            RX    1000    1012    1024    1035    1045    1053    1065    1098
1413            RY    1093    1092    1090    1088    1088    1090    1092    1094
                *

1414            KK    CP46
1415            KM        ADD HYDROGRAPHS AT CP46.
1416            HC       2   17.43
                *

1417            KK    SR46
1418            KM        STORAGE ROUTE THROUGH 5-10'X4' BC'S AT STA 6419+30 ON I-10.
1419            RS       1    STOR       0       0
1420            SV       0    1.08    3.13    4.28    5.18    7.54   12.96
1421            SQ       0     730    1460    1680    1834    2090    2420
1422            SE  1065.4 1068.42 1070.53  1071.4  1072.0  1073.0  1074.3
                *

1423            KK     R46
1424            KM        ROUTE REMAINDER OF FLOW AT CP46 TO CPWT4
1425            RS       2              -1       0
1426            RC     .03     .03     .05    6800   .0067
1427            RX     910     930     940     950    1000    1020    1200    1400
1428            RY    1065    1064    1064    1060    1060    1064    1064    1065
                *
1                                          HEC-1 INPUT                                          PAGE 38

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

1429            KK   D45-1
1430            KM        RETURN DIVERT AT  CP45-1
1431            DR  7DWT#4
                *

1432            KK  RD45-1
1433            KM        ROUTE DIVERTED FLOW FROM CP45-1 TO CPWT4
1434            RS       2              -1       0
1435            RC    .045     .03    .045    4100   .0067
1436            RX     910     940     970     990    1000    1020    1060    1100
1437            RY    1064    1063    1062    1060    1060    1062    1063    1064
                *

1438            KK     D45
1439            KM        RETURN DIVERT AT CP45
1440            DR  8DWT#4
                *

1441            KK    RD45
1442            KM        ROUTE DIVERTED FLOW FROM  CP45  TO CPWT4.
1443            RS       2              -1       0
1444            RC    .045     .03    .045    4200   .0067
1445            RX     910     940     970     990    1000    1020    1060    1100
1446            RY    1064    1063    1062    1060    1060    1062    1063    1064
                *

1447            KK  I7CWT4
1448            KM        ADD HYDROGRAPHS AT CPWT4
1449            HC       2   14.36
                *

1450            KK   D46-1
1451            KM        RETURN DIVERT AT CP46-1
1452            DR  9DWT#4
                *

1453            KK  RD46-1
1454            KM        ROUTE DIVERTED FLOW FROM CP46-1 TO CPWT4
1455            RS       3              -1       0
1456            RC    .045     .03    .045    4900   .0067
1457            RX     910     940     970     990    1000    1020    1060    1100
1458            RY    1064    1063    1062    1060    1060    1062    1063    1064
                *

1459            KK  I8CWT4
1460            KM        ADD HYDROGRAPHS AT CPWT4
1461            HC       2   14.51
                *
1                                          HEC-1 INPUT                                          PAGE 39

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

1462            KK     WT4
1463            KM   BASIN WT4
1464            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1465            KM    L=        .9  Lca=        .5   S=   54.9  Kn= .050  LAG=  24.2
1466            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1467            BA     .77
1468            LG     .35     .35    4.20     .40     .00
```

```
1469          UI    107.    378.    598.    822.   1269.    977.    711.    497.    239.    156.
1470          UI     94.     33.     33.     33.      0.      0.      0.      0.      0.      0.
1471          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1472          KK  I9CWT4
1473          KM        ADD HYDROGRAPHS AT CPWT4
1474          HC       2   15.28
              *

1475          KK  I10WT4
1476          KM        ADD HYDROGRAPHS AT CPWT4
1477          HC       2    18.2
              *

1478          KK   CPWT4
              *
1479          KO       1
1480          KM        ADD ENTIRE FLOW TOGETHER THAT GETS TO WHITE TANKS STRUCTURE NO 4.
1481          HC       2   18.57
              *

1482          KK    RS47
1483          KM        STORAGE ROUTE TROUGH WHITE TANKS STRUCTURE NO. 4.
1484          RS       1    STOR       0       0
1485          SV       0    2.81      51     148     277     543    1269    1396    1690    2045
1486          SV    2246
1487          SQ       0       0       0       0       0       0       0     375    2600    6150
1488          SQ   14700
1489          SE     997    1000    1010    1020    1030    1040    1049    1050    1052    1054
1490          SE    1055
              *
              * ************************************************************************
              * ***THE FOLLOWING SECTION TAKEN FROM NEW SUPER BASIN 25 WITH NEW SOILS*****
              * ************************************************************************
              *

1491          KK   D43-1
1492          KM        RETURN DIVERT AT CP43-1
1493          DR  1D303A
              *
```



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

1494          KK   R43-1
1495          KM        ROUTE REMAINDER FROM CP43-1 TO CP303A
1496          RS      48              -1       0
1497          RC    .035    .035    .035    5300   .0091
1498          RX    1000    1090    1170    1250    1380    1400    1450    1630
1499          RY    1077  1075.8  1076.5    1076    1076  1076.5    1076    1077
              *

1500          KK   D43-2
1501          KM        RETURN DIVERT AT CP43-2
1502          DR  2D303A
              *

1503          KK   R43-2
1504          KM        ROUTE REMAINDER FROM CP43-2 TO CP303A
1505          RS       8              -1       0
1506          RC    .035    .035    .035    5300   .0091
1507          RX    1000    1090    1170    1250    1380    1400    1450    1630
1508          RY    1077  1075.8  1076.5    1076    1076  1076.5    1076    1077
              *

1509          KK   D43-3
1510          KM        RETURN DIVERT AT CP43-3
1511          DR  3D303A
              *

1512          KK   R43-3
1513          KM        ROUTE REMAINDER FROM CP43-3 TO CP303A
1514          RS      13              -1       0
1515          RC    .035    .035    .035    4840   .0091
1516          RX    1000    1170    1240    1270    1440    1470    1490    1550
1517          RY    1069    1068  1068.5    1068    1068  1068.5  1067.8  1068.5
              *

1518          KK    303A
1519          KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 303A
1520          BA     .42
1521          LG     .35     .35    4.15     .40     .10
1522          UI     56.    182.    299.    400.    629.    559.    409.    297.    178.     95.
1523          UI     63.     32.     17.     17.     17.      0.      0.      0.      0.      0.
1524          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1525          KK  1C303A
1526          KM        ADD HYDROGRAPHS AT CP303A
1527          HC       4    1.06
              *

1528          KK  CP303A
```

```
1529          KM        ADD HYDROGRAPHS AT CP303A
1530          HC       2   1.48
              *
```



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

1531          KK   D41A1
1532          KM        RETURN DIVERT AT CP41A1
1533          DR   1D303
              *

1534          KK   R41A1
1535          KM        ROUTE FLOW FROM CP41A1 TO CP303
1536          RS      18              -1       0
1537          RC    .035    .035    .035    7180    .014
1538          RX    1000    1210    1450    1530    1620    1690    1849    1850
1539          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1540          KK   D41A2
1541          KM        RETURN DIVERT AT CP41A2
1542          DR   2D303
              *

1543          KK   R41A2
1544          KM        ROUTE FLOW FROM CP41A2 TO CP303
1545          RS      19              -1       0
1546          RC    .035    .035    .035    7330    .014
1547          RX    1000    1210    1450    1530    1620    1690    1849    1850
1548          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1549          KK   1I303
1550          KM        ADD HYDROGRAPHS AT CP303
1551          HC       2     .05
              *

1552          KK   D41A3
1553          KM        RETURN DIVERT AT CP41A3
1554          DR   3D303
              *

1555          KK   R41A3
1556          KM        ROUTE FLOW FROM CP41A3 TO CP303
1557          RS      25              -1       0
1558          RC    .035    .035    .035    9360    .010
1559          RX    1000    1210    1450    1530    1620    1690    1849    1850
1560          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1561          KK   2I303
1562          KM        ADD HYDROGRAPHS AT CP303
1563          HC       2     .08
              *
```



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

1564          KK    D41A
1565          KM        RETURN DIVERT AT CP41A
1566          DR   4D303
              *

1567          KK    R41A
1568          KM        ROUTE FLOW FROM CP41A TO CP303
1569          RS      26              -1       0
1570          RC    .035    .035    .035    9360   .0095
1571          RX    1000    1210    1450    1530    1620    1690    1849    1850
1572          RY    1106  1105.5    1106    1104    1104    1106    1107    1107
              *

1573          KK   3I303
1574          KM        ADD HYDROGRAPHS AT CP303
1575          HC       2     .13
              *

1576          KK   D41-1
1577          KM        RETURN DIVERT AT CP41-1
1578          DR   5D303
              *

1579          KK   R41-1
1580          KM        ROUTE FLOW FROM CP41-1 TO CP303
1581          RS      28              -1       0
1582          RC    .035    .035    .035    9200   .0079
1583          RX    1000    1300    1510    1660    1850    1890    1940    2100
1584          RY  1080.5    1079  1080.5    1080    1080    1081  1080.5    1081
              *

1585          KK   4I303
1586          KM        ADD HYDROGRAPHS AT CP303
1587          HC       2     .28
```

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                    *

1588                KK   D41-2
1589                KM        RETURN DIVERT AT CP41-2
1590                DR   6D303
                    *

1591                KK   R41-2
1592                KM        ROUTE FLOW FROM CP41-2 TO CP303
1593                RS      33              -1       0
1594                RC    .035    .035    .035    9360   .0065
1595                RX    1000    1300    1510    1660    1850    1890    1940    2100
1596                RY  1080.5    1079  1080.5    1080    1080    1081  1080.5    1081
                    *
1                                          HEC-1 INPUT                                                    PAGE 43

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


1597                KK   5I303
1598                KM        ADD HYDROGRAPHS AT CP303
1599                HC       2     .38
                    *

1600                KK     D41
1601                KM        RETURN DIVERT AT CP41
1602                DR   7D303
                    *

1603                KK     R41
1604                KM        ROUTE FLOW FROM CP41 TO CP303
1605                RS      30              -1       0
1606                RC    .035    .035    .035    9830   .0056
1607                RX    1000    1300    1510    1660    1850    1890    1940    2100
1608                RY  1080.5    1079  1080.5    1080    1080    1081  1080.5    1081
                    *

1609                KK   6I303
1610                KM        ADD HYDROGRAPHS AT CP303
1611                HC       2     .96
                    *

1612                KK     303
1613                KM        RUNOFF HYDROGRAPH FROM SUB-BASIN 303
1614                BA     .91
1615                IN      15
1616                LG     .35     .35    4.40     .37     .00
1617                UI     59.     59.    145.    237.    294.    337.    388.    452.    566.    748.
1618                UI    670.    551.    480.    411.    354.    297.    247.    166.    105.     99.
1619                UI     84.     59.     59.     19.     18.     18.     18.     18.     18.     18.
1620                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1621                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

1622                KK   CP303
1623                KM        ADD HYDROGRAPHS AT CP303
1624                HC       2    2.17
                    *
1625                ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    77           4
                 .
                 .
    84           .           5
                 .           .
                 .           .
    91         CP5............
                 V
                 V
    94        RCP5
                 .
                 .
   100           .           6
                 .           .
                 .           .
   106         CP6............
                 V
                 V
   109        RCP6
                 .
                 .
   115           .           7
                 .           .
                 .           .
   121         CP7............
                 V
                 V
   124        RCP7
                 .
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130          .          9
             .          .
             .          .
137     I1CP9............
             .
             .
140          .         14
             .          V
             .          V
147          .      RCP14
             .          .
             .          .
153          .          .         15
             .          .          .
             .          .          .
161          .     I1CP15............
             .          .
             .          .
164          .          .         16
             .          .          V
             .          .          V
172          .          .      SR16
             .          .          .
             .          .          .
178          .       CP15............
             .          V
             .          V
181          .      RCP15
             .          .
             .          .
187          .          .         18
             .          .          V
             .          .          V
199          .          .       R18
             .          .          .
             .          .          .
205          .          .          .         19
             .          .          .          .
             .          .          .          .
215          .          .     CP19............
             .          .          V
             .          .          V
218          .          .       R19
             .          .          .
             .          .          .
224          .          .          .         21
             .          .          .          .
             .          .          .          .
235          .          .   I1CP21............
             .          .          .
             .          .          .
238          .          .          .         20
             .          .          .          V
             .          .          .          V
248          .          .          .      SR20
             .          .          .          V
             .          .          .          V
257          .          .          .       R20
             .          .          .          .
             .          .          .          .
263          .          .     CP21............
             .          .          V
             .          .          V
266          .          .     SR21
             .          .          V
             .          .          V
272          .          .       R21
             .          .          .
             .          .          .
278          .          .          .         23
             .          .          .          .
             .          .          .          .
287          .          .     CP23............
             .          .          V
             .          .          V
290          .          .     SR23
             .          .          V
             .          .          V
299          .          .       R23
             .          .          .
             .          .          .
305          .          .          .         22
             .          .          .          V
             .          .          .          V
315          .          .          .       R22
             .          .          .          .
             .          .          .          .
321          .          .          .          .         22A
             .          .          .          .           .
             .          .          .          .           .
331          .          .          .   I1C22A............
             .          .          .          .
             .          .          .          .
334          .          .     CP22A............
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                .         .         .
                .         .         .
340             .         .         .-------->   GOB2
337             .         .      DGOB2
                .         .         V
                .         .         V
343             .         .      R22A
                .         .         .
                .         .         .
349             .         .         .         25
                .         .         .          .
                .         .         .          .
359             .         .      I1CP25............
                .         .         .
                .         .         .
362             .         .         .         24
                .         .         .          V
                .         .         .          V
372             .         .         .        R24
                .         .         .          .
                .         .         .          .
378             .         .      CP25............
                .         .         .
                .         .         .
381             .         .         .        26N
                .         .         .          .
                .         .         .          .
394             .         .         .          .-------->   GOB4
391             .         .         .     DGOB4
                .         .         .          V
                .         .         .          V
397             .         .         .        R26
                .         .         .          .
                .         .         .          .
403             .         .         .          .        26S
                .         .         .          .          V
                .         .         .          .          V
413             .         .         .          .       R26S
                .         .         .          .          .
                .         .         .          .          .
419             .         .         .          .          .         27
                .         .         .          .          .          .
                .         .         .          .          .          .
430             .         .         .     I1CP27......................
                .         .         .          .
                .         .         .          .
436             .         .         .          .-------->   SPOB1
433             .         .         .     DSPOB1
                .         .         .          .
                .         .         .          .
439             .         .      CP27............
                .         .         V
                .         .         V
442             .         .      R27
                .         .         .
                .         .         .
448             .         .         .         34
                .         .         .          .
                .         .         .          .
458             .         .         .          .         33
                .         .         .          .          .
                .         .         .          .          .
468             .         .         .       CP33............
                .         .         .          V
                .         .         .          V
471             .         .         .        R33
                .         .         .          .
                .         .         .          .
477             .         .         .          .         35
                .         .         .          .          .
                .         .         .          .          .
487             .         .         .     I1CP35............
                .         .         .          .
                .         .         .          .
490             .         .         .          .         32
                .         .         .          .          .
                .         .         .          .          .
501             .         .         .       CP35............
                .         .         .          V
                .         .         .          V
504             .         .         .        R35
                .         .         .          .
                .         .         .          .
510             .         .         .          .         36
                .         .         .          .          .
                .         .         .          .          .
520             .         .         .     I1CP36............
                .         .         .          .
                .         .         .          .
523             .         .         .          .         37
                .         .         .          .          .
                .         .         .          .          .
534             .         .         .       CP36............
                .         .         .          V
                .         .         .          V
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537          .          .          .          R36
             .          .          .           .
             .          .          .           .
543          .          .          .           .          38
             .          .          .           .           .
             .          .          .           .           .
553          .          .          .        CP38............
             .          .          .           .
             .          .          .           .
560          .          .          .           .-------->    GOB3
556          .          .          .      DGOB3
             .          .          .          V
             .          .          .          V
563          .          .          .        R38
             .          .          .           .
             .          .          .           .
569          .          .          .           .          39
             .          .          .           .           .
             .          .          .           .           .
580          .          .          .     I1CP39............
             .          .          .           .
             .          .          .           .
583          .          .       CP39............
             .          .          V
             .          .          V
586          .          .       R39
             .          .          .
             .          .          .
592          .          .          .          40
             .          .          .           .
             .          .          .           .
604          .          .          .           .-------->    GOB5
602          .          .          .      DGOB5
             .          .          .          V
             .          .          .          V
607          .          .          .        R40
             .          .          .           .
             .          .          .           .
613          .          .          .           .          42
             .          .          .           .           .
             .          .          .           .           .
624          .          .          .     I1CP42............
             .          .          .           .
             .          .          .           .
627          .          .       CP42............
             .          .          V
             .          .          V
630          .          .       SR42
             .          .          V
             .          .          V
638          .          .     SR42-2
             .          .          V
             .          .          V
649          .          .       R42
             .          .          .
             .          .          .
655          .          .          .       41A1
             .          .          .          V
             .          .          .          V
664          .          .          .     SR41A1
             .          .          .           .
             .          .          .           .
672          .          .          .           .-------->   1D303
670          .          .          .     CP41A1
             .          .          .          V
             .          .          .          V
675          .          .          .      R41A1
             .          .          .           .
             .          .          .           .
681          .          .          .           .        41A2
             .          .          .           .           .
             .          .          .           .           .
690          .          .          .     CP41A2............
             .          .          .          V
             .          .          .          V
693          .          .          .     SR41A2
             .          .          .           .
             .          .          .           .
701          .          .          .           .-------->   2D303
699          .          .          .      D41A2
             .          .          .          V
             .          .          .          V
704          .          .          .      R41A2
             .          .          .           .
             .          .          .           .
710          .          .          .           .        41A3
             .          .          .           .           .
             .          .          .           .           .
719          .          .          .     CP41A3............
             .          .          .          V
             .          .          .          V
722          .          .          .     SR41A3
             .          .          .           .
             .          .          .           .
730          .          .          .           .-------->   3D303
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728          .          .          .        D41A3
             .          .          .            V
             .          .          .            V
733          .          .          .        R41A3
             .          .          .            .
             .          .          .            .
739          .          .          .            .         41A
             .          .          .            .           .
             .          .          .            .           .
748          .          .          .        CP41A............
             .          .          .            V
             .          .          .            V
751          .          .          .        SR41A
             .          .          .            .
             .          .          .            .
759          .          .          .            .-------->   4D303
757          .          .          .         D41A
             .          .          .            V
             .          .          .            V
762          .          .          .         R41A
             .          .          .            .
             .          .          .            .
768          .          .          .            .        41-1
             .          .          .            .           .
             .          .          .            .           .
778          .          .          .      CP41-1............
             .          .          .            V
             .          .          .            V
781          .          .          .      SR41-1
             .          .          .            .
             .          .          .            .
789          .          .          .            .-------->   5D303
787          .          .          .       D41-1
             .          .          .            V
             .          .          .            V
792          .          .          .       R41-1
             .          .          .            .
             .          .          .            .
798          .          .          .            .        41-2
             .          .          .            .           .
             .          .          .            .           .
808          .          .          .      CP41-2............
             .          .          .            V
             .          .          .            V
811          .          .          .      SR41-2
             .          .          .            .
             .          .          .            .
822          .          .          .            .-------->   6D303
820          .          .          .       D41-2
             .          .          .            V
             .          .          .            V
827          .          .          .       R41-2
             .          .          .            .
             .          .          .            .
833          .          .          .            .          41
             .          .          .            .           .
             .          .          .            .           .
844          .          .          .         CP41............
             .          .          .            V
             .          .          .            V
847          .          .          .         SR41
             .          .          .            .
             .          .          .            .
858          .          .          .            .-------->   7D303
856          .          .          .          D41
             .          .          .            V
             .          .          .            V
863          .          .          .          R41
             .          .          .            .
             .          .          .            .
869          .          .          .            .        43-1
             .          .          .            .           .
             .          .          .            .           .
878          .          .          .      CP43-1............
             .          .          .            V
             .          .          .            V
881          .          .          .      SR43-1
             .          .          .            .
             .          .          .            .
892          .          .          .            .-------->  1D303A
890          .          .          .       D43-1
             .          .          .            V
             .          .          .            V
897          .          .          .       R43-1
             .          .          .            .
             .          .          .            .
903          .          .          .            .        43-2
             .          .          .            .           .
             .          .          .            .           .
912          .          .          .      CP43-2............
             .          .          .            V
             .          .          .            V
915          .          .          .      SR43-2
             .          .          .            .
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923                 .-------> 2D303A
921            D43-2
                   V
                   V
926            R43-2
                   .
                   .
932                .        43-3
                   .           .
                   .           .
941           CP43-3............
                   V
                   V
944           SR43-3
                   .
                   .
952                .-------> 3D303A
950            D43-3
                   V
                   V
955            R43-3
                   .
                   .
961                .        43-4
                   .           .
                   .           .
970           CP43-4............
                   V
                   V
973           SR43-4
                   .
                   .
981                .-------> 1DWT#4
979            D43-4
                   V
                   V
984            R43-4
                   .
                   .
990                .        43-5
                   .           .
                   .           .
999           CP43-5............
                   V
                   V
1002          SR43-5
                   .
                   .
1013               .-------> 2DWT#4
1011           D43-5
                   V
                   V
1018           R43-5
                   .
                   .
1024               .        43-6
                   .           .
                   .           .
1033          CP43-6............
                   V
                   V
1036          SR43-6
                   .
                   .
1047               .-------> 3DWT#4
1045           D43-6
                   V
                   V
1052           R43-6
                   .
                   .
1058               .        43-7
                   .           .
                   .           .
1067          CP43-7............
                   V
                   V
1070          SR43-7
                   .
                   .
1078               .-------> 4DWT#4
1076           D43-7
                   V
                   V
1081           R43-7
                   .
                   .
1087               .        43-8
                   .           .
                   .           .
1096          CP43-8............
                   V
                   V
1099          SR43-8
                   .
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                                                  .
1110                                              .-------> 5DWT#4
1108                                       D43-8
                                                  V
                                                  V
1115                                       R43-8
                                                  .
                                                  .
1121                                              .          43
                                                  .           .
                                                  .           .
1130                                       I1CP43............
                                                  .
                                                  .
1133                                  CP43............
                                         V
                                         V
1136                                  SR43
                                         .
                                         .
1147                                     .-------> DI45-1
1145                                  D43
                                         V
                                         V
1150                                  RD43
                                         .
                                         .
1158                                              .<-------  1DWT#4
1156                                       D43-4
                                                  V
                                                  V
1159                                       RD43-4
                                                  .
                                                  .
1167                                              .           .<-------  2DWT#4
1165                                              .       D43-5
                                                  .           V
                                                  .           V
1168                                              .      RD43-5
                                                  .           .
                                                  .           .
1174                                       I1CWT4............
                                                  .
                                                  .
1179                                              .           .<-------  3DWT#4
1177                                              .       D43-6
                                                  .           V
                                                  .           V
1180                                              .      RD43-6
                                                  .           .
                                                  .           .
1186                                       I2CWT4............
                                                  .
                                                  .
1191                                              .           .<-------  4DWT#4
1189                                              .       D43-7
                                                  .           V
                                                  .           V
1192                                              .      RD43-7
                                                  .           .
                                                  .           .
1198                                       I3CWT4............
                                                  .
                                                  .
1203                                              .           .<-------  5DWT#4
1201                                              .       D43-8
                                                  .           V
                                                  .           V
1204                                              .      RD43-8
                                                  .           .
                                                  .           .
1210                                       I4CWT4............
                                                  .
                                                  .
1213                                              .          44
                                                  .           .
                                                  .           .
1223                                       I5CWT4............
                                                  .
                                                  .
1226                                  CP44............
                                                  .
                                                  .
1229                                         45-1
                                                  .
                                                  .
1240                                              .           .<-------  DI45-1
1238                                              .        D43
                                                  .           .
                                                  .           .
1241                                       CP45-1............
                                                  V
                                                  V
1244                                       SR45-1
                                                  .
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                                  .
1253                              .-------> 7DWT#4
1251                          D45-1
                                  V
                                  V
1256                          R45-1
                                  .
                                  .
1262                              .          45
                                  .           .
                                  .           .
1271                           CP45............
                                  V
                                  V
1274                           SR45
                                  .
                                  .
1283                              .-------> 8DWT#4
1281                           D45
                                  V
                                  V
1286                           R45
                                  .
                                  .
1292                              .        46-1
                                  .           .
                                  .           .
1303                       CP46-1............
                                  V
                                  V
1306                       SR46-1
                                  .
                                  .
1315                              .-------> 9DWT#4
1313                        D46-1
                                  V
                                  V
1318                        R46-1
                                  .
                                  .
1324                              .          46
                                  .           .
                                  .           .
1336                       I1CP46............
                                  .
                                  .
1339                              .          28
                                  .           V
                                  .           V
1350                              .         R28
                                  .           .
                                  .           .
1356                              .           .          30
                                  .           .           .
                                  .           .           .
1366                              .      I1CP30............
                                  .           .
                                  .           .
1369                              .           .          29
                                  .           .           V
                                  .           .           V
1379                              .           .         R29
                                  .           .           .
                                  .           .           .
1385                              .        CP30............
                                  .           V
                                  .           V
1388                              .         R30
                                  .           .
                                  .           .
1394                              .           .          31
                                  .           .           .
                                  .           .           .
1405                              .        CP31............
                                  .           V
                                  .           V
1408                              .         R31
                                  .           .
                                  .           .
1414                           CP46............
                                  V
                                  V
1417                           SR46
                                  V
                                  V
1423                           R46
                                  .
                                  .
1431                              .           .<-------  7DWT#4
1429                              .       D45-1
                                  .           V
                                  .           V
1432                              .      RD45-1
                                  .           .
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1440                                                  .<-------  8DWT#4
1438                                              D45
                                                    V
                                                    V
1441                                             RD45
                                                    .
                                                    .
1447                                      I7CWT4............
                                                    .
                                                    .
1452                                                  .<-------  9DWT#4
1450                                          D46-1
                                                    V
                                                    V
1453                                         RD46-1
                                                    .
                                                    .
1459                                      I8CWT4............
                                                    .
                                                    .
1462                                              WT4
                                                    .
                                                    .
1472                                      I9CWT4............
                                                    .
                                                    .
1475                                 I10WT4............
                                                 .
                                                 .
1478                            CPWT4............
                                    V
                                    V
1482                             RS47
                                    .
                                    .
1493                                    .<-------  1D303A
1491                                 D43-1
                                        V
                                        V
1494                                 R43-1
                                        .
                                        .
1502                                            .<-------  2D303A
1500                                      D43-2
                                                V
                                                V
1503                                      R43-2
                                                .
                                                .
1511                                                  .<-------  3D303A
1509                                          D43-3
                                                    V
                                                    V
1512                                          R43-3
                                                    .
                                                    .
1518                                                  .        303A
                                                      .          .
                                                      .          .
1525                                 1C303A.................................
                                                 .
                                                 .
1528                            CP303A............
                                    .
                                    .
1533                                    .<-------   1D303
1531                                 D41A1
                                        V
                                        V
1534                                 R41A1
                                        .
                                        .
1542                                            .<-------   2D303
1540                                      D41A2
                                                V
                                                V
1543                                      R41A2
                                                .
                                                .
1549                                 1I303............
                                                 .
                                                 .
1554                                            .<-------   3D303
1552                                      D41A3
                                                V
                                                V
1555                                      R41A3
                                                .
                                                .
1561                                 2I303............
                                                 .
                                                 .
1566                                            .<-------   4D303
1564                                       D41A
                                                V
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                .         .         .         .         V
 1567           .         .         .         .       R41A
                .         .         .         .         .
                .         .         .         .         .
 1573           .         .         .      3I303.........
                .         .         .         .
                .         .         .         .
 1578           .         .         .         .         .<-------   5D303
 1576           .         .         .         .      D41-1
                .         .         .         .         V
                .         .         .         .         V
 1579           .         .         .         .      R41-1
                .         .         .         .         .
                .         .         .         .         .
 1585           .         .         .      4I303.........
                .         .         .         .
                .         .         .         .
 1590           .         .         .         .         .<-------   6D303
 1588           .         .         .         .      D41-2
                .         .         .         .         V
                .         .         .         .         V
 1591           .         .         .         .      R41-2
                .         .         .         .         .
                .         .         .         .         .
 1597           .         .         .      5I303.........
                .         .         .         .
                .         .         .         .
 1602           .         .         .         .         .<-------   7D303
 1600           .         .         .         .        D41
                .         .         .         .         V
                .         .         .         .         V
 1603           .         .         .         .        R41
                .         .         .         .         .
                .         .         .         .         .
 1609           .         .         .      6I303.........
                .         .         .         .
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 1612           .         .         .         .        303
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                .         .         .         .         .
 1622           .         .         .      CP303.........
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   27AUG02  TIME  15:35:22  *
 *                                      *
 ****************************************
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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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*******************************************
VERRADO PROPOSED CONDITION HYDROLGY
DESIGN EVENT: 100-YEAR - 24-HOUR FLOOD EVENT
DATE:         AUGUST 27, 2002
FILENAME:     M:\2000\ 001081\HYDRO\HYDROLOGY\
              31JULY2002 DEVELOPED CONDITION HEC-1\1479D100.DAT
*******************************************

     ***HC CARDS FOR CP2711, I2712, CP255A & 1I287C UPDATED
     ***TO INCLUDE AN AREA AT THE POINT OF COMBINATION

      3 - 27 - 02
      **ADOT BASIN GEOMETRY REPRESENTS MOST RECENT 2' CONTOURS**
      WHITE TANKS AREA DRAINAGE MASTER STUDY *UPDATE*
      Original MODEL BY THE WLB Group for FCDMC AS PART OF THE WHITE
      TANKS/AGUA FRIA ADMS, Date: October 1991

      REVISED HYDROLOGY HEC-1 RUN FOR WHITE TANKS ADMS
      100-YEAR, 24-HOUR STORM                  original file: WTADMS.24

      SOME NOMENCLATURE CHANGES HAVE BEEN MADE PER REQUEST OF
      FCDMC - 5-09-01

      INCORPORATED CHANGES PROPOSED BY DAVID EVANS AND ASSOCIATES
      AT CACTUS AND REEMS IN REGARD TO RANCHO GABRIELA AT THE
      DIRECTION OF THE FCDMC 9-20-01

      REVISED CONTRIBUTING AREAS ALONG CACTUS WEST OF REEMS AND
      IN ADOT WATERSHED AREA


                                        REVISED BY URS     DATE: 3-27-02
                                                           FILE: L303M3K.DAT

     NOTES:
     1. THIS HEC-1 MODEL CONTAINS THE FOLLOWING SUPER BASINS: WHITE TANKS 3,
        2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2 & 3, 4 THRU 26.
```

2. REVISED TO REFLECT UPDATED SOILS MAPS AND NEW DEVELOPMENT.
3. AVERAGE XKSAT VALUES FOR EACH SUBBASIN WAS RECEIVED FROM FCDMC GIS DATA AND THEN ADJUSTED FOR VEGETATION, OR LEFT AS ORIGINALLY IN THE WLB MODEL.
4. FOR NEW DEVELOPMENTS ONLY 80% OF REPORTED PROVIDED RETENTION WAS INCLUDED IN THIS MODEL (AS A CONSERVATIVE ESTIMATE). RETENTION CAPACITIES WERE ESTIMATED BY EEC FOR DEVELOPMENTS WITH NO DRAINAGE REPORTS.
5. REVISED DRAINAGE BOUNDARIES BASED UPON FIELD INSPECTION OF SUN CITY. GRAND. COMBINED SEVERAL BASINS TOGETHER TO MAKE NEW BASINS 114 &115. ALSO REROUTED SUBBASINS 100A, 101, 102A AND 106 TO THE SOUTH TO 113A.
6. CHANNEL ROUTE ALONG REEMS ROAD UPDATED TO REFLECT NEW CONSTRUCTION.
7. REVISED SCS TYPE II RAINFALL DISTRIBUTION FOR THE 24-HOUR GENERAL STORM.
8. REVISED RAINFALL DEPTH-AREA REDUCTION FACTORS.
9. PSIF WERE ADJUSTED BASED ON THE VALUES OF XKSAT AND WERE EDITED INTO THE DATA FILE BY THE FCDMC.
10. AVERAGE XKSAT VALUES FOR SUBBASINS WITH BORROW PITS (WHITE TANKS AREAS #3 & #4) WERE ESTIMATED BY EEC.

```
60 IO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1   0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      3   0  ENDING DATE
                    NDTIME       0155  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

62 JD          INDEX STORM NO. 1
                      STRM       4.03  PRECIPITATION DEPTH
                      TRDA        .00  TRANSPOSITION DRAINAGE AREA

63 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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73 JD          INDEX STORM NO. 2
                      STRM       3.79  PRECIPITATION DEPTH
                      TRDA      10.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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74 JD INDEX STORM NO. 3

STRM 3.51 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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75 JD INDEX STORM NO. 4

STRM 3.39 PRECIPITATION DEPTH

TRDA 100.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

76 JD INDEX STORM NO. 5

STRM 3.29 PRECIPITATION DEPTH

TRDA 200.00 TRANSPOSITION DRAINAGE AREA

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 0 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                     .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                     .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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            *            *
1478 KK     *     CPWT4  *
            *            *
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1479 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           1  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                            ADD ENTIRE FLOW TOGETHER THAT GETS TO WHITE TANKS STRUCTURE NO 4.

1481 HC          HYDROGRAPH COMBINATION
                      ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

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HYDROGRAPH AT CPWT4
TRANSPOSITION AREA .0 SQ MI

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	*	1		1230	151	3483.	*	2		0100	301	60.	*	2		1330	451	2.
1		0005	2	0.	*	1		1235	152	4579.	*	2		0105	302	59.	*	2		1335	452	2.
1		0010	3	0.	*	1		1240	153	5508.	*	2		0110	303	59.	*	2		1340	453	2.
1		0015	4	0.	*	1		1245	154	6117.	*	2		0115	304	58.	*	2		1345	454	2.
1		0020	5	0.	*	1		1250	155	6494.	*	2		0120	305	58.	*	2		1350	455	2.
1		0025	6	0.	*	1		1255	156	6658.	*	2		0125	306	57.	*	2		1355	456	2.
1		0030	7	0.	*	1		1300	157	6593.	*	2		0130	307	56.	*	2		1400	457	2.
1		0035	8	0.	*	1		1305	158	6373.	*	2		0135	308	56.	*	2		1405	458	2.
1		0040	9	0.	*	1		1310	159	6045.	*	2		0140	309	55.	*	2		1410	459	2.
1		0045	10	0.	*	1		1315	160	5595.	*	2		0145	310	54.	*	2		1415	460	2.
1		0050	11	0.	*	1		1320	161	5050.	*	2		0150	311	53.	*	2		1420	461	1.
1		0055	12	0.	*	1		1325	162	4514.	*	2		0155	312	52.	*	2		1425	462	1.
1		0100	13	0.	*	1		1330	163	3941.	*	2		0200	313	51.	*	2		1430	463	1.
1		0105	14	0.	*	1		1335	164	3396.	*	2		0205	314	50.	*	2		1435	464	1.
1		0110	15	0.	*	1		1340	165	2897.	*	2		0210	315	49.	*	2		1440	465	1.
1		0115	16	0.	*	1		1345	166	2438.	*	2		0215	316	48.	*	2		1445	466	1.
1		0120	17	0.	*	1		1350	167	2067.	*	2		0220	317	46.	*	2		1450	467	1.
1		0125	18	0.	*	1		1355	168	1799.	*	2		0225	318	45.	*	2		1455	468	1.
1		0130	19	0.	*	1		1400	169	1581.	*	2		0230	319	44.	*	2		1500	469	1.
1		0135	20	0.	*	1		1405	170	1387.	*	2		0235	320	42.	*	2		1505	470	1.
1		0140	21	0.	*	1		1410	171	1237.	*	2		0240	321	41.	*	2		1510	471	1.
1		0145	22	0.	*	1		1415	172	1115.	*	2		0245	322	40.	*	2		1515	472	1.
1		0150	23	0.	*	1		1420	173	1009.	*	2		0250	323	39.	*	2		1520	473	1.
1		0155	24	0.	*	1		1425	174	910.	*	2		0255	324	37.	*	2		1525	474	1.
1		0200	25	0.	*	1		1430	175	822.	*	2		0300	325	36.	*	2		1530	475	1.
1		0205	26	0.	*	1		1435	176	747.	*	2		0305	326	35.	*	2		1535	476	1.
1		0210	27	0.	*	1		1440	177	685.	*	2		0310	327	33.	*	2		1540	477	1.
1		0215	28	0.	*	1		1445	178	636.	*	2		0315	328	32.	*	2		1545	478	1.
1		0220	29	0.	*	1		1450	179	592.	*	2		0320	329	31.	*	2		1550	479	1.
1		0225	30	0.	*	1		1455	180	552.	*	2		0325	330	29.	*	2		1555	480	1.
1		0230	31	0.	*	1		1500	181	515.	*	2		0330	331	28.	*	2		1600	481	1.
1		0235	32	0.	*	1		1505	182	481.	*	2		0335	332	27.	*	2		1605	482	1.

1	0240	33	1.	*	1	1510	183	451.	*	2	0340	333	25.	*	2	1610	483	1.
1	0245	34	1.	*	1	1515	184	424.	*	2	0345	334	24.	*	2	1615	484	1.
1	0250	35	1.	*	1	1520	185	397.	*	2	0350	335	23.	*	2	1620	485	1.
1	0255	36	1.	*	1	1525	186	372.	*	2	0355	336	22.	*	2	1625	486	1.
1	0300	37	1.	*	1	1530	187	351.	*	2	0400	337	21.	*	2	1630	487	1.
1	0305	38	1.	*	1	1535	188	331.	*	2	0405	338	21.	*	2	1635	488	1.
1	0310	39	1.	*	1	1540	189	314.	*	2	0410	339	20.	*	2	1640	489	1.
1	0315	40	1.	*	1	1545	190	298.	*	2	0415	340	19.	*	2	1645	490	1.
1	0320	41	1.	*	1	1550	191	284.	*	2	0420	341	19.	*	2	1650	491	1.
1	0325	42	2.	*	1	1555	192	270.	*	2	0425	342	18.	*	2	1655	492	1.
1	0330	43	2.	*	1	1600	193	259.	*	2	0430	343	18.	*	2	1700	493	1.
1	0335	44	2.	*	1	1605	194	248.	*	2	0435	344	18.	*	2	1705	494	1.
1	0340	45	2.	*	1	1610	195	238.	*	2	0440	345	17.	*	2	1710	495	1.
1	0345	46	2.	*	1	1615	196	229.	*	2	0445	346	17.	*	2	1715	496	1.
1	0350	47	2.	*	1	1620	197	220.	*	2	0450	347	16.	*	2	1720	497	1.
1	0355	48	2.	*	1	1625	198	212.	*	2	0455	348	16.	*	2	1725	498	1.
1	0400	49	2.	*	1	1630	199	204.	*	2	0500	349	16.	*	2	1730	499	1.
1	0405	50	2.	*	1	1635	200	197.	*	2	0505	350	15.	*	2	1735	500	1.
1	0410	51	2.	*	1	1640	201	190.	*	2	0510	351	15.	*	2	1740	501	1.
1	0415	52	3.	*	1	1645	202	184.	*	2	0515	352	15.	*	2	1745	502	1.
1	0420	53	3.	*	1	1650	203	179.	*	2	0520	353	14.	*	2	1750	503	1.
1	0425	54	3.	*	1	1655	204	174.	*	2	0525	354	14.	*	2	1755	504	1.
1	0430	55	3.	*	1	1700	205	170.	*	2	0530	355	14.	*	2	1800	505	1.
1	0435	56	3.	*	1	1705	206	166.	*	2	0535	356	13.	*	2	1805	506	1.
1	0440	57	3.	*	1	1710	207	163.	*	2	0540	357	13.	*	2	1810	507	1.
1	0445	58	3.	*	1	1715	208	159.	*	2	0545	358	13.	*	2	1815	508	1.
1	0450	59	3.	*	1	1720	209	156.	*	2	0550	359	13.	*	2	1820	509	1.
1	0455	60	3.	*	1	1725	210	153.	*	2	0555	360	12.	*	2	1825	510	1.
1	0500	61	3.	*	1	1730	211	150.	*	2	0600	361	12.	*	2	1830	511	1.
1	0505	62	3.	*	1	1735	212	147.	*	2	0605	362	12.	*	2	1835	512	1.
1	0510	63	3.	*	1	1740	213	144.	*	2	0610	363	11.	*	2	1840	513	0.
1	0515	64	3.	*	1	1745	214	141.	*	2	0615	364	11.	*	2	1845	514	0.
1	0520	65	3.	*	1	1750	215	139.	*	2	0620	365	11.	*	2	1850	515	0.
1	0525	66	3.	*	1	1755	216	137.	*	2	0625	366	11.	*	2	1855	516	0.
1	0530	67	3.	*	1	1800	217	134.	*	2	0630	367	11.	*	2	1900	517	0.
1	0535	68	3.	*	1	1805	218	132.	*	2	0635	368	10.	*	2	1905	518	0.
1	0540	69	3.	*	1	1810	219	130.	*	2	0640	369	10.	*	2	1910	519	0.
1	0545	70	3.	*	1	1815	220	128.	*	2	0645	370	10.	*	2	1915	520	0.
1	0550	71	4.	*	1	1820	221	126.	*	2	0650	371	10.	*	2	1920	521	0.
1	0555	72	4.	*	1	1825	222	124.	*	2	0655	372	9.	*	2	1925	522	0.
1	0600	73	4.	*	1	1830	223	122.	*	2	0700	373	9.	*	2	1930	523	0.
1	0605	74	4.	*	1	1835	224	120.	*	2	0705	374	9.	*	2	1935	524	0.
1	0610	75	4.	*	1	1840	225	119.	*	2	0710	375	9.	*	2	1940	525	0.
1	0615	76	4.	*	1	1845	226	117.	*	2	0715	376	9.	*	2	1945	526	0.
1	0620	77	4.	*	1	1850	227	116.	*	2	0720	377	9.	*	2	1950	527	0.
1	0625	78	4.	*	1	1855	228	115.	*	2	0725	378	8.	*	2	1955	528	0.
1	0630	79	4.	*	1	1900	229	114.	*	2	0730	379	8.	*	2	2000	529	0.
1	0635	80	4.	*	1	1905	230	113.	*	2	0735	380	8.	*	2	2005	530	0.
1	0640	81	4.	*	1	1910	231	112.	*	2	0740	381	8.	*	2	2010	531	0.
1	0645	82	4.	*	1	1915	232	110.	*	2	0745	382	8.	*	2	2015	532	0.
1	0650	83	4.	*	1	1920	233	109.	*	2	0750	383	8.	*	2	2020	533	0.
1	0655	84	4.	*	1	1925	234	108.	*	2	0755	384	7.	*	2	2025	534	0.
1	0700	85	4.	*	1	1930	235	106.	*	2	0800	385	7.	*	2	2030	535	0.
1	0705	86	4.	*	1	1935	236	105.	*	2	0805	386	7.	*	2	2035	536	0.
1	0710	87	4.	*	1	1940	237	104.	*	2	0810	387	7.	*	2	2040	537	0.
1	0715	88	4.	*	1	1945	238	102.	*	2	0815	388	7.	*	2	2045	538	0.
1	0720	89	4.	*	1	1950	239	101.	*	2	0820	389	7.	*	2	2050	539	0.
1	0725	90	4.	*	1	1955	240	100.	*	2	0825	390	6.	*	2	2055	540	0.
1	0730	91	4.	*	1	2000	241	99.	*	2	0830	391	6.	*	2	2100	541	0.
1	0735	92	4.	*	1	2005	242	97.	*	2	0835	392	6.	*	2	2105	542	0.
1	0740	93	4.	*	1	2010	243	96.	*	2	0840	393	6.	*	2	2110	543	0.
1	0745	94	4.	*	1	2015	244	95.	*	2	0845	394	6.	*	2	2115	544	0.
1	0750	95	4.	*	1	2020	245	94.	*	2	0850	395	6.	*	2	2120	545	0.
1	0755	96	4.	*	1	2025	246	93.	*	2	0855	396	6.	*	2	2125	546	0.
1	0800	97	5.	*	1	2030	247	92.	*	2	0900	397	6.	*	2	2130	547	0.
1	0805	98	5.	*	1	2035	248	91.	*	2	0905	398	5.	*	2	2135	548	0.
1	0810	99	5.	*	1	2040	249	90.	*	2	0910	399	5.	*	2	2140	549	0.
1	0815	100	5.	*	1	2045	250	89.	*	2	0915	400	5.	*	2	2145	550	0.
1	0820	101	5.	*	1	2050	251	88.	*	2	0920	401	5.	*	2	2150	551	0.
1	0825	102	5.	*	1	2055	252	87.	*	2	0925	402	5.	*	2	2155	552	0.
1	0830	103	5.	*	1	2100	253	86.	*	2	0930	403	5.	*	2	2200	553	0.
1	0835	104	5.	*	1	2105	254	85.	*	2	0935	404	5.	*	2	2205	554	0.
1	0840	105	5.	*	1	2110	255	84.	*	2	0940	405	5.	*	2	2210	555	0.
1	0845	106	5.	*	1	2115	256	83.	*	2	0945	406	5.	*	2	2215	556	0.
1	0850	107	5.	*	1	2120	257	82.	*	2	0950	407	5.	*	2	2220	557	0.
1	0855	108	5.	*	1	2125	258	81.	*	2	0955	408	4.	*	2	2225	558	0.
1	0900	109	5.	*	1	2130	259	80.	*	2	1000	409	4.	*	2	2230	559	0.
1	0905	110	5.	*	1	2135	260	80.	*	2	1005	410	4.	*	2	2235	560	0.
1	0910	111	5.	*	1	2140	261	79.	*	2	1010	411	4.	*	2	2240	561	0.
1	0915	112	5.	*	1	2145	262	78.	*	2	1015	412	4.	*	2	2245	562	0.
1	0920	113	5.	*	1	2150	263	77.	*	2	1020	413	4.	*	2	2250	563	0.
1	0925	114	5.	*	1	2155	264	76.	*	2	1025	414	4.	*	2	2255	564	0.
1	0930	115	5.	*	1	2200	265	75.	*	2	1030	415	4.	*	2	2300	565	0.
1	0935	116	5.	*	1	2205	266	75.	*	2	1035	416	4.	*	2	2305	566	0.
1	0940	117	5.	*	1	2210	267	74.	*	2	1040	417	4.	*	2	2310	567	0.
1	0945	118	5.	*	1	2215	268	73.	*	2	1045	418	4.	*	2	2315	568	0.
1	0950	119	6.	*	1	2220	269	73.	*	2	1050	419	4.	*	2	2320	569	0.
1	0955	120	6.	*	1	2225	270	72.	*	2	1055	420	3.	*	2	2325	570	0.
1	1000	121	6.	*	1	2230	271	72.	*	2	1100	421	3.	*	2	2330	571	0.
1	1005	122	6.	*	1	2235	272	71.	*	2	1105	422	3.	*	2	2335	572	0.
1	1010	123	6.	*	1	2240	273	70.	*	2	1110	423	3.	*	2	2340	573	0.
1	1015	124	6.	*	1	2245	274	70.	*	2	1115	424	3.	*	2	2345	574	0.
1	1020	125	6.	*	1	2250	275	69.	*	2	1120	425	3.	*	2	2350	575	0.
1	1025	126	7.	*	1	2255	276	69.	*	2	1125	426	3.	*	2	2355	576	0.
1	1030	127	7.	*	1	2300	277	68.	*	2	1130	427	3.	*	3	0000	577	0.

1	1035	128	9.	*	1	2305	278	68.	*	2	1135	428	3.	*	3	0005	578	0.
1	1040	129	10.	*	1	2310	279	67.	*	2	1140	429	3.	*	3	0010	579	0.
1	1045	130	12.	*	1	2315	280	67.	*	2	1145	430	3.	*	3	0015	580	0.
1	1050	131	15.	*	1	2320	281	66.	*	2	1150	431	3.	*	3	0020	581	0.
1	1055	132	17.	*	1	2325	282	66.	*	2	1155	432	3.	*	3	0025	582	0.
1	1100	133	20.	*	1	2330	283	65.	*	2	1200	433	3.	*	3	0030	583	0.
1	1105	134	24.	*	1	2335	284	65.	*	2	1205	434	3.	*	3	0035	584	0.
1	1110	135	29.	*	1	2340	285	65.	*	2	1210	435	3.	*	3	0040	585	0.
1	1115	136	34.	*	1	2345	286	64.	*	2	1215	436	2.	*	3	0045	586	0.
1	1120	137	40.	*	1	2350	287	64.	*	2	1220	437	2.	*	3	0050	587	0.
1	1125	138	46.	*	1	2355	288	64.	*	2	1225	438	2.	*	3	0055	588	0.
1	1130	139	52.	*	2	0000	289	63.	*	2	1230	439	2.	*	3	0100	589	0.
1	1135	140	66.	*	2	0005	290	63.	*	2	1235	440	2.	*	3	0105	590	0.
1	1140	141	100.	*	2	0010	291	63.	*	2	1240	441	2.	*	3	0110	591	0.
1	1145	142	154.	*	2	0015	292	62.	*	2	1245	442	2.	*	3	0115	592	0.
1	1150	143	264.	*	2	0020	293	62.	*	2	1250	443	2.	*	3	0120	593	0.
1	1155	144	504.	*	2	0025	294	62.	*	2	1255	444	2.	*	3	0125	594	0.
1	1200	145	825.	*	2	0030	295	61.	*	2	1300	445	2.	*	3	0130	595	0.
1	1205	146	1215.	*	2	0035	296	61.	*	2	1305	446	2.	*	3	0135	596	0.
1	1210	147	1643.	*	2	0040	297	61.	*	2	1310	447	2.	*	3	0140	597	0.
1	1215	148	1939.	*	2	0045	298	61.	*	2	1315	448	2.	*	3	0145	598	0.
1	1220	149	2222.	*	2	0050	299	60.	*	2	1320	449	2.	*	3	0150	599	0.
1	1225	150	2634.	*	2	0055	300	60.	*	2	1325	450	2.	*	3	0155	600	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 6658.	12.92		1592.	434.	210.	210.
		(INCHES)	.797	.870	.874	.874
		(AC-FT)	790.	862.	865.	865.

CUMULATIVE AREA = 18.57 SQ MI

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HYDROGRAPH AT CPWT4
TRANSPOSITION AREA 10.0 SQ MI

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	*	1		1230	151	2912.	*	2		0100	301	56.	*	2		1330	451	2.
1		0005	2	0.	*	1		1235	152	3940.	*	2		0105	302	56.	*	2		1335	452	2.
1		0010	3	0.	*	1		1240	153	4947.	*	2		0110	303	56.	*	2		1340	453	2.
1		0015	4	0.	*	1		1245	154	5659.	*	2		0115	304	55.	*	2		1345	454	2.
1		0020	5	0.	*	1		1250	155	6039.	*	2		0120	305	55.	*	2		1350	455	2.
1		0025	6	0.	*	1		1255	156	6185.	*	2		0125	306	54.	*	2		1355	456	2.
1		0030	7	0.	*	1		1300	157	6127.	*	2		0130	307	53.	*	2		1400	457	2.
1		0035	8	0.	*	1		1305	158	5958.	*	2		0135	308	53.	*	2		1405	458	2.
1		0040	9	0.	*	1		1310	159	5646.	*	2		0140	309	52.	*	2		1410	459	2.
1		0045	10	0.	*	1		1315	160	5159.	*	2		0145	310	51.	*	2		1415	460	1.
1		0050	11	0.	*	1		1320	161	4671.	*	2		0150	311	50.	*	2		1420	461	1.
1		0055	12	0.	*	1		1325	162	4164.	*	2		0155	312	49.	*	2		1425	462	1.
1		0100	13	0.	*	1		1330	163	3587.	*	2		0200	313	48.	*	2		1430	463	1.
1		0105	14	0.	*	1		1335	164	3071.	*	2		0205	314	47.	*	2		1435	464	1.
1		0110	15	0.	*	1		1340	165	2591.	*	2		0210	315	46.	*	2		1440	465	1.
1		0115	16	0.	*	1		1345	166	2169.	*	2		0215	316	45.	*	2		1445	466	1.
1		0120	17	0.	*	1		1350	167	1833.	*	2		0220	317	44.	*	2		1450	467	1.
1		0125	18	0.	*	1		1355	168	1598.	*	2		0225	318	43.	*	2		1455	468	1.
1		0130	19	0.	*	1		1400	169	1396.	*	2		0230	319	41.	*	2		1500	469	1.
1		0135	20	0.	*	1		1405	170	1228.	*	2		0235	320	40.	*	2		1505	470	1.
1		0140	21	0.	*	1		1410	171	1099.	*	2		0240	321	39.	*	2		1510	471	1.
1		0145	22	0.	*	1		1415	172	996.	*	2		0245	322	38.	*	2		1515	472	1.
1		0150	23	0.	*	1		1420	173	900.	*	2		0250	323	37.	*	2		1520	473	1.
1		0155	24	0.	*	1		1425	174	812.	*	2		0255	324	35.	*	2		1525	474	1.
1		0200	25	0.	*	1		1430	175	735.	*	2		0300	325	34.	*	2		1530	475	1.
1		0205	26	0.	*	1		1435	176	672.	*	2		0305	326	33.	*	2		1535	476	1.
1		0210	27	0.	*	1		1440	177	622.	*	2		0310	327	31.	*	2		1540	477	1.
1		0215	28	0.	*	1		1445	178	582.	*	2		0315	328	30.	*	2		1545	478	1.
1		0220	29	0.	*	1		1450	179	544.	*	2		0320	329	29.	*	2		1550	479	1.
1		0225	30	0.	*	1		1455	180	509.	*	2		0325	330	28.	*	2		1555	480	1.
1		0230	31	0.	*	1		1500	181	477.	*	2		0330	331	26.	*	2		1600	481	1.
1		0235	32	0.	*	1		1505	182	447.	*	2		0335	332	25.	*	2		1605	482	1.
1		0240	33	1.	*	1		1510	183	422.	*	2		0340	333	24.	*	2		1610	483	1.
1		0245	34	1.	*	1		1515	184	396.	*	2		0345	334	23.	*	2		1615	484	1.
1		0250	35	1.	*	1		1520	185	372.	*	2		0350	335	22.	*	2		1620	485	1.
1		0255	36	1.	*	1		1525	186	350.	*	2		0355	336	21.	*	2		1625	486	1.
1		0300	37	1.	*	1		1530	187	331.	*	2		0400	337	21.	*	2		1630	487	1.
1		0305	38	1.	*	1		1535	188	313.	*	2		0405	338	20.	*	2		1635	488	1.
1		0310	39	1.	*	1		1540	189	297.	*	2		0410	339	19.	*	2		1640	489	1.
1		0315	40	1.	*	1		1545	190	283.	*	2		0415	340	19.	*	2		1645	490	1.
1		0320	41	1.	*	1		1550	191	269.	*	2		0420	341	18.	*	2		1650	491	1.
1		0325	42	1.	*	1		1555	192	257.	*	2		0425	342	18.	*	2		1655	492	1.
1		0330	43	2.	*	1		1600	193	246.	*	2		0430	343	18.	*	2		1700	493	1.
1		0335	44	2.	*	1		1605	194	236.	*	2		0435	344	17.	*	2		1705	494	1.
1		0340	45	2.	*	1		1610	195	226.	*	2		0440	345	17.	*	2		1710	495	1.
1		0345	46	2.	*	1		1615	196	217.	*	2		0445	346	16.	*	2		1715	496	1.
1		0350	47	2.	*	1		1620	197	209.	*	2		0450	347	16.	*	2		1720	497	1.
1		0355	48	2.	*	1		1625	198	201.	*	2		0455	348	16.	*	2		1725	498	1.
1		0400	49	2.	*	1		1630	199	193.	*	2		0500	349	15.	*	2		1730	499	1.

1	0405	50	2.	*	1	1635	200	186.	*	2	0505	350	15.	*	2	1735	500	1.
1	0410	51	2.	*	1	1640	201	181.	*	2	0510	351	15.	*	2	1740	501	1.
1	0415	52	2.	*	1	1645	202	175.	*	2	0515	352	14.	*	2	1745	502	1.
1	0420	53	2.	*	1	1650	203	171.	*	2	0520	353	14.	*	2	1750	503	1.
1	0425	54	3.	*	1	1655	204	167.	*	2	0525	354	14.	*	2	1755	504	1.
1	0430	55	3.	*	1	1700	205	163.	*	2	0530	355	13.	*	2	1800	505	1.
1	0435	56	3.	*	1	1705	206	159.	*	2	0535	356	13.	*	2	1805	506	1.
1	0440	57	3.	*	1	1710	207	155.	*	2	0540	357	13.	*	2	1810	507	1.
1	0445	58	3.	*	1	1715	208	152.	*	2	0545	358	12.	*	2	1815	508	1.
1	0450	59	3.	*	1	1720	209	149.	*	2	0550	359	12.	*	2	1820	509	1.
1	0455	60	3.	*	1	1725	210	146.	*	2	0555	360	12.	*	2	1825	510	1.
1	0500	61	3.	*	1	1730	211	143.	*	2	0600	361	12.	*	2	1830	511	1.
1	0505	62	3.	*	1	1735	212	140.	*	2	0605	362	11.	*	2	1835	512	0.
1	0510	63	3.	*	1	1740	213	137.	*	2	0610	363	11.	*	2	1840	513	0.
1	0515	64	3.	*	1	1745	214	135.	*	2	0615	364	11.	*	2	1845	514	0.
1	0520	65	3.	*	1	1750	215	132.	*	2	0620	365	11.	*	2	1850	515	0.
1	0525	66	3.	*	1	1755	216	130.	*	2	0625	366	11.	*	2	1855	516	0.
1	0530	67	3.	*	1	1800	217	128.	*	2	0630	367	10.	*	2	1900	517	0.
1	0535	68	3.	*	1	1805	218	126.	*	2	0635	368	10.	*	2	1905	518	0.
1	0540	69	3.	*	1	1810	219	124.	*	2	0640	369	10.	*	2	1910	519	0.
1	0545	70	3.	*	1	1815	220	122.	*	2	0645	370	10.	*	2	1915	520	0.
1	0550	71	3.	*	1	1820	221	120.	*	2	0650	371	9.	*	2	1920	521	0.
1	0555	72	3.	*	1	1825	222	118.	*	2	0655	372	9.	*	2	1925	522	0.
1	0600	73	3.	*	1	1830	223	117.	*	2	0700	373	9.	*	2	1930	523	0.
1	0605	74	3.	*	1	1835	224	116.	*	2	0705	374	9.	*	2	1935	524	0.
1	0610	75	3.	*	1	1840	225	114.	*	2	0710	375	9.	*	2	1940	525	0.
1	0615	76	3.	*	1	1845	226	113.	*	2	0715	376	9.	*	2	1945	526	0.
1	0620	77	3.	*	1	1850	227	112.	*	2	0720	377	8.	*	2	1950	527	0.
1	0625	78	4.	*	1	1855	228	110.	*	2	0725	378	8.	*	2	1955	528	0.
1	0630	79	4.	*	1	1900	229	109.	*	2	0730	379	8.	*	2	2000	529	0.
1	0635	80	4.	*	1	1905	230	108.	*	2	0735	380	8.	*	2	2005	530	0.
1	0640	81	4.	*	1	1910	231	106.	*	2	0740	381	8.	*	2	2010	531	0.
1	0645	82	4.	*	1	1915	232	105.	*	2	0745	382	8.	*	2	2015	532	0.
1	0650	83	4.	*	1	1920	233	104.	*	2	0750	383	7.	*	2	2020	533	0.
1	0655	84	4.	*	1	1925	234	102.	*	2	0755	384	7.	*	2	2025	534	0.
1	0700	85	4.	*	1	1930	235	101.	*	2	0800	385	7.	*	2	2030	535	0.
1	0705	86	4.	*	1	1935	236	100.	*	2	0805	386	7.	*	2	2035	536	0.
1	0710	87	4.	*	1	1940	237	98.	*	2	0810	387	7.	*	2	2040	537	0.
1	0715	88	4.	*	1	1945	238	97.	*	2	0815	388	7.	*	2	2045	538	0.
1	0720	89	4.	*	1	1950	239	96.	*	2	0820	389	6.	*	2	2050	539	0.
1	0725	90	4.	*	1	1955	240	94.	*	2	0825	390	6.	*	2	2055	540	0.
1	0730	91	4.	*	1	2000	241	93.	*	2	0830	391	6.	*	2	2100	541	0.
1	0735	92	4.	*	1	2005	242	92.	*	2	0835	392	6.	*	2	2105	542	0.
1	0740	93	4.	*	1	2010	243	91.	*	2	0840	393	6.	*	2	2110	543	0.
1	0745	94	4.	*	1	2015	244	90.	*	2	0845	394	6.	*	2	2115	544	0.
1	0750	95	4.	*	1	2020	245	89.	*	2	0850	395	6.	*	2	2120	545	0.
1	0755	96	4.	*	1	2025	246	88.	*	2	0855	396	6.	*	2	2125	546	0.
1	0800	97	4.	*	1	2030	247	87.	*	2	0900	397	5.	*	2	2130	547	0.
1	0805	98	4.	*	1	2035	248	86.	*	2	0905	398	5.	*	2	2135	548	0.
1	0810	99	4.	*	1	2040	249	85.	*	2	0910	399	5.	*	2	2140	549	0.
1	0815	100	4.	*	1	2045	250	84.	*	2	0915	400	5.	*	2	2145	550	0.
1	0820	101	4.	*	1	2050	251	83.	*	2	0920	401	5.	*	2	2150	551	0.
1	0825	102	4.	*	1	2055	252	82.	*	2	0925	402	5.	*	2	2155	552	0.
1	0830	103	4.	*	1	2100	253	81.	*	2	0930	403	5.	*	2	2200	553	0.
1	0835	104	5.	*	1	2105	254	80.	*	2	0935	404	5.	*	2	2205	554	0.
1	0840	105	5.	*	1	2110	255	79.	*	2	0940	405	5.	*	2	2210	555	0.
1	0845	106	5.	*	1	2115	256	78.	*	2	0945	406	5.	*	2	2215	556	0.
1	0850	107	5.	*	1	2120	257	78.	*	2	0950	407	4.	*	2	2220	557	0.
1	0855	108	5.	*	1	2125	258	77.	*	2	0955	408	4.	*	2	2225	558	0.
1	0900	109	5.	*	1	2130	259	76.	*	2	1000	409	4.	*	2	2230	559	0.
1	0905	110	5.	*	1	2135	260	75.	*	2	1005	410	4.	*	2	2235	560	0.
1	0910	111	5.	*	1	2140	261	75.	*	2	1010	411	4.	*	2	2240	561	0.
1	0915	112	5.	*	1	2145	262	74.	*	2	1015	412	4.	*	2	2245	562	0.
1	0920	113	5.	*	1	2150	263	73.	*	2	1020	413	4.	*	2	2250	563	0.
1	0925	114	5.	*	1	2155	264	73.	*	2	1025	414	4.	*	2	2255	564	0.
1	0930	115	5.	*	1	2200	265	72.	*	2	1030	415	4.	*	2	2300	565	0.
1	0935	116	5.	*	1	2205	266	72.	*	2	1035	416	4.	*	2	2305	566	0.
1	0940	117	5.	*	1	2210	267	71.	*	2	1040	417	4.	*	2	2310	567	0.
1	0945	118	5.	*	1	2215	268	70.	*	2	1045	418	4.	*	2	2315	568	0.
1	0950	119	5.	*	1	2220	269	70.	*	2	1050	419	3.	*	2	2320	569	0.
1	0955	120	5.	*	1	2225	270	69.	*	2	1055	420	3.	*	2	2325	570	0.
1	1000	121	5.	*	1	2230	271	69.	*	2	1100	421	3.	*	2	2330	571	0.
1	1005	122	5.	*	1	2235	272	68.	*	2	1105	422	3.	*	2	2335	572	0.
1	1010	123	5.	*	1	2240	273	67.	*	2	1110	423	3.	*	2	2340	573	0.
1	1015	124	5.	*	1	2245	274	67.	*	2	1115	424	3.	*	2	2345	574	0.
1	1020	125	6.	*	1	2250	275	66.	*	2	1120	425	3.	*	2	2350	575	0.
1	1025	126	6.	*	1	2255	276	66.	*	2	1125	426	3.	*	2	2355	576	0.
1	1030	127	6.	*	1	2300	277	65.	*	2	1130	427	3.	*	3	0000	577	0.
1	1035	128	6.	*	1	2305	278	65.	*	2	1135	428	3.	*	3	0005	578	0.
1	1040	129	6.	*	1	2310	279	64.	*	2	1140	429	3.	*	3	0010	579	0.
1	1045	130	7.	*	1	2315	280	64.	*	2	1145	430	3.	*	3	0015	580	0.
1	1050	131	8.	*	1	2320	281	63.	*	2	1150	431	3.	*	3	0020	581	0.
1	1055	132	9.	*	1	2325	282	63.	*	2	1155	432	3.	*	3	0025	582	0.
1	1100	133	11.	*	1	2330	283	62.	*	2	1200	433	3.	*	3	0030	583	0.
1	1105	134	13.	*	1	2335	284	62.	*	2	1205	434	3.	*	3	0035	584	0.
1	1110	135	16.	*	1	2340	285	61.	*	2	1210	435	2.	*	3	0040	585	0.
1	1115	136	19.	*	1	2345	286	61.	*	2	1215	436	2.	*	3	0045	586	0.
1	1120	137	22.	*	1	2350	287	61.	*	2	1220	437	2.	*	3	0050	587	0.
1	1125	138	27.	*	1	2355	288	60.	*	2	1225	438	2.	*	3	0055	588	0.
1	1130	139	32.	*	2	0000	289	60.	*	2	1230	439	2.	*	3	0100	589	0.
1	1135	140	43.	*	2	0005	290	60.	*	2	1235	440	2.	*	3	0105	590	0.
1	1140	141	70.	*	2	0010	291	59.	*	2	1240	441	2.	*	3	0110	591	0.
1	1145	142	111.	*	2	0015	292	59.	*	2	1245	442	2.	*	3	0115	592	0.
1	1150	143	203.	*	2	0020	293	59.	*	2	1250	443	2.	*	3	0120	593	0.
1	1155	144	411.	*	2	0025	294	58.	*	2	1255	444	2.	*	3	0125	594	0.

1	1200	145	696.	*	2	0030	295	58.	*	2	1300	445	2.	*	3	0130	595	0.
1	1205	146	1037.	*	2	0035	296	58.	*	2	1305	446	2.	*	3	0135	596	0.
1	1210	147	1430.	*	2	0040	297	58.	*	2	1310	447	2.	*	3	0140	597	0.
1	1215	148	1696.	*	2	0045	298	57.	*	2	1315	448	2.	*	3	0145	598	0.
1	1220	149	1903.	*	2	0050	299	57.	*	2	1320	449	2.	*	3	0150	599	0.
1	1225	150	2188.	*	2	0055	300	57.	*	2	1325	450	2.	*	3	0155	600	0.
				*					*					*				

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 6185.	12.92	1445.	395.	191.	191.
		(INCHES) .723	.791	.795	.795
		(AC-FT) 716.	784.	787.	787.

CUMULATIVE AREA = 18.57 SQ MI

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HYDROGRAPH AT CPWT4
TRANSPOSITION AREA 50.0 SQ MI

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	*	1		1230	151	2230.	*	2		0100	301	52.	*	2		1330	451	2.
1		0005	2	0.	*	1		1235	152	3195.	*	2		0105	302	52.	*	2		1335	452	2.
1		0010	3	0.	*	1		1240	153	4265.	*	2		0110	303	52.	*	2		1340	453	2.
1		0015	4	0.	*	1		1245	154	5087.	*	2		0115	304	51.	*	2		1345	454	2.
1		0020	5	0.	*	1		1250	155	5514.	*	2		0120	305	51.	*	2		1350	455	2.
1		0025	6	0.	*	1		1255	156	5651.	*	2		0125	306	50.	*	2		1355	456	2.
1		0030	7	0.	*	1		1300	157	5673.	*	2		0130	307	49.	*	2		1400	457	2.
1		0035	8	0.	*	1		1305	158	5500.	*	2		0135	308	49.	*	2		1405	458	1.
1		0040	9	0.	*	1		1310	159	5087.	*	2		0140	309	48.	*	2		1410	459	1.
1		0045	10	0.	*	1		1315	160	4678.	*	2		0145	310	47.	*	2		1415	460	1.
1		0050	11	0.	*	1		1320	161	4261.	*	2		0150	311	46.	*	2		1420	461	1.
1		0055	12	0.	*	1		1325	162	3729.	*	2		0155	312	46.	*	2		1425	462	1.
1		0100	13	0.	*	1		1330	163	3208.	*	2		0200	313	45.	*	2		1430	463	1.
1		0105	14	0.	*	1		1335	164	2733.	*	2		0205	314	44.	*	2		1435	464	1.
1		0110	15	0.	*	1		1340	165	2286.	*	2		0210	315	43.	*	2		1440	465	1.
1		0115	16	0.	*	1		1345	166	1914.	*	2		0215	316	42.	*	2		1445	466	1.
1		0120	17	0.	*	1		1350	167	1634.	*	2		0220	317	41.	*	2		1450	467	1.
1		0125	18	0.	*	1		1355	168	1421.	*	2		0225	318	40.	*	2		1455	468	1.
1		0130	19	0.	*	1		1400	169	1233.	*	2		0230	319	39.	*	2		1500	469	1.
1		0135	20	0.	*	1		1405	170	1091.	*	2		0235	320	37.	*	2		1505	470	1.
1		0140	21	0.	*	1		1410	171	981.	*	2		0240	321	36.	*	2		1510	471	1.
1		0145	22	0.	*	1		1415	172	887.	*	2		0245	322	35.	*	2		1515	472	1.
1		0150	23	0.	*	1		1420	173	799.	*	2		0250	323	34.	*	2		1520	473	1.
1		0155	24	0.	*	1		1425	174	721.	*	2		0255	324	33.	*	2		1525	474	1.
1		0200	25	0.	*	1		1430	175	656.	*	2		0300	325	31.	*	2		1530	475	1.
1		0205	26	0.	*	1		1435	176	606.	*	2		0305	326	30.	*	2		1535	476	1.
1		0210	27	0.	*	1		1440	177	565.	*	2		0310	327	29.	*	2		1540	477	1.
1		0215	28	0.	*	1		1445	178	529.	*	2		0315	328	28.	*	2		1545	478	1.
1		0220	29	0.	*	1		1450	179	496.	*	2		0320	329	27.	*	2		1550	479	1.
1		0225	30	0.	*	1		1455	180	466.	*	2		0325	330	26.	*	2		1555	480	1.
1		0230	31	0.	*	1		1500	181	438.	*	2		0330	331	24.	*	2		1600	481	1.
1		0235	32	0.	*	1		1505	182	414.	*	2		0335	332	23.	*	2		1605	482	1.
1		0240	33	0.	*	1		1510	183	389.	*	2		0340	333	23.	*	2		1610	483	1.
1		0245	34	1.	*	1		1515	184	366.	*	2		0345	334	22.	*	2		1615	484	1.
1		0250	35	1.	*	1		1520	185	344.	*	2		0350	335	21.	*	2		1620	485	1.
1		0255	36	1.	*	1		1525	186	324.	*	2		0355	336	20.	*	2		1625	486	1.
1		0300	37	1.	*	1		1530	187	307.	*	2		0400	337	20.	*	2		1630	487	1.
1		0305	38	1.	*	1		1535	188	291.	*	2		0405	338	19.	*	2		1635	488	1.
1		0310	39	1.	*	1		1540	189	277.	*	2		0410	339	19.	*	2		1640	489	1.
1		0315	40	1.	*	1		1545	190	264.	*	2		0415	340	18.	*	2		1645	490	1.
1		0320	41	1.	*	1		1550	191	251.	*	2		0420	341	18.	*	2		1650	491	1.
1		0325	42	1.	*	1		1555	192	240.	*	2		0425	342	17.	*	2		1655	492	1.
1		0330	43	1.	*	1		1600	193	230.	*	2		0430	343	17.	*	2		1700	493	1.
1		0335	44	2.	*	1		1605	194	220.	*	2		0435	344	17.	*	2		1705	494	1.
1		0340	45	2.	*	1		1610	195	211.	*	2		0440	345	16.	*	2		1710	495	1.
1		0345	46	2.	*	1		1615	196	202.	*	2		0445	346	16.	*	2		1715	496	1.
1		0350	47	2.	*	1		1620	197	194.	*	2		0450	347	15.	*	2		1720	497	1.
1		0355	48	2.	*	1		1625	198	187.	*	2		0455	348	15.	*	2		1725	498	1.
1		0400	49	2.	*	1		1630	199	181.	*	2		0500	349	15.	*	2		1730	499	1.
1		0405	50	2.	*	1		1635	200	175.	*	2		0505	350	14.	*	2		1735	500	1.
1		0410	51	2.	*	1		1640	201	170.	*	2		0510	351	14.	*	2		1740	501	1.
1		0415	52	2.	*	1		1645	202	166.	*	2		0515	352	14.	*	2		1745	502	1.
1		0420	53	2.	*	1		1650	203	161.	*	2		0520	353	14.	*	2		1750	503	1.
1		0425	54	2.	*	1		1655	204	157.	*	2		0525	354	13.	*	2		1755	504	1.
1		0430	55	2.	*	1		1700	205	154.	*	2		0530	355	13.	*	2		1800	505	1.
1		0435	56	2.	*	1		1705	206	150.	*	2		0535	356	13.	*	2		1805	506	1.
1		0440	57	3.	*	1		1710	207	146.	*	2		0540	357	12.	*	2		1810	507	1.
1		0445	58	3.	*	1		1715	208	143.	*	2		0545	358	12.	*	2		1815	508	1.
1		0450	59	3.	*	1		1720	209	140.	*	2		0550	359	12.	*	2		1820	509	1.
1		0455	60	3.	*	1		1725	210	137.	*	2		0555	360	12.	*	2		1825	510	1.
1		0500	61	3.	*	1		1730	211	134.	*	2		0600	361	11.	*	2		1830	511	0.
1		0505	62	3.	*	1		1735	212	131.	*	2		0605	362	11.	*	2		1835	512	0.
1		0510	63	3.	*	1		1740	213	129.	*	2		0610	363	11.	*	2		1840	513	0.
1		0515	64	3.	*	1		1745	214	126.	*	2		0615	364	11.	*	2		1845	514	0.
1		0520	65	3.	*	1		1750	215	124.	*	2		0620	365	10.	*	2		1850	515	0.
1		0525	66	3.	*	1		1755	216	122.	*	2		0625	366	10.	*	2		1855	516	0.

1	0530	67	3.	*	1	1800	217	120.	*	2	0630	367	10.	*	2	1900	517	0.
1	0535	68	3.	*	1	1805	218	118.	*	2	0635	368	10.	*	2	1905	518	0.
1	0540	69	3.	*	1	1810	219	117.	*	2	0640	369	10.	*	2	1910	519	0.
1	0545	70	3.	*	1	1815	220	115.	*	2	0645	370	9.	*	2	1915	520	0.
1	0550	71	3.	*	1	1820	221	114.	*	2	0650	371	9.	*	2	1920	521	0.
1	0555	72	3.	*	1	1825	222	113.	*	2	0655	372	9.	*	2	1925	522	0.
1	0600	73	3.	*	1	1830	223	111.	*	2	0700	373	9.	*	2	1930	523	0.
1	0605	74	3.	*	1	1835	224	110.	*	2	0705	374	9.	*	2	1935	524	0.
1	0610	75	3.	*	1	1840	225	108.	*	2	0710	375	8.	*	2	1940	525	0.
1	0615	76	3.	*	1	1845	226	107.	*	2	0715	376	8.	*	2	1945	526	0.
1	0620	77	3.	*	1	1850	227	105.	*	2	0720	377	8.	*	2	1950	527	0.
1	0625	78	3.	*	1	1855	228	104.	*	2	0725	378	8.	*	2	1955	528	0.
1	0630	79	3.	*	1	1900	229	102.	*	2	0730	379	8.	*	2	2000	529	0.
1	0635	80	3.	*	1	1905	230	101.	*	2	0735	380	8.	*	2	2005	530	0.
1	0640	81	3.	*	1	1910	231	99.	*	2	0740	381	7.	*	2	2010	531	0.
1	0645	82	3.	*	1	1915	232	98.	*	2	0745	382	7.	*	2	2015	532	0.
1	0650	83	3.	*	1	1920	233	97.	*	2	0750	383	7.	*	2	2020	533	0.
1	0655	84	3.	*	1	1925	234	95.	*	2	0755	384	7.	*	2	2025	534	0.
1	0700	85	4.	*	1	1930	235	94.	*	2	0800	385	7.	*	2	2030	535	0.
1	0705	86	4.	*	1	1935	236	93.	*	2	0805	386	7.	*	2	2035	536	0.
1	0710	87	4.	*	1	1940	237	91.	*	2	0810	387	7.	*	2	2040	537	0.
1	0715	88	4.	*	1	1945	238	90.	*	2	0815	388	6.	*	2	2045	538	0.
1	0720	89	4.	*	1	1950	239	89.	*	2	0820	389	6.	*	2	2050	539	0.
1	0725	90	4.	*	1	1955	240	88.	*	2	0825	390	6.	*	2	2055	540	0.
1	0730	91	4.	*	1	2000	241	87.	*	2	0830	391	6.	*	2	2100	541	0.
1	0735	92	4.	*	1	2005	242	86.	*	2	0835	392	6.	*	2	2105	542	0.
1	0740	93	4.	*	1	2010	243	84.	*	2	0840	393	6.	*	2	2110	543	0.
1	0745	94	4.	*	1	2015	244	83.	*	2	0845	394	6.	*	2	2115	544	0.
1	0750	95	4.	*	1	2020	245	82.	*	2	0850	395	6.	*	2	2120	545	0.
1	0755	96	4.	*	1	2025	246	81.	*	2	0855	396	5.	*	2	2125	546	0.
1	0800	97	4.	*	1	2030	247	80.	*	2	0900	397	5.	*	2	2130	547	0.
1	0805	98	4.	*	1	2035	248	79.	*	2	0905	398	5.	*	2	2135	548	0.
1	0810	99	4.	*	1	2040	249	78.	*	2	0910	399	5.	*	2	2140	549	0.
1	0815	100	4.	*	1	2045	250	78.	*	2	0915	400	5.	*	2	2145	550	0.
1	0820	101	4.	*	1	2050	251	77.	*	2	0920	401	5.	*	2	2150	551	0.
1	0825	102	4.	*	1	2055	252	76.	*	2	0925	402	5.	*	2	2155	552	0.
1	0830	103	4.	*	1	2100	253	75.	*	2	0930	403	5.	*	2	2200	553	0.
1	0835	104	4.	*	1	2105	254	75.	*	2	0935	404	5.	*	2	2205	554	0.
1	0840	105	4.	*	1	2110	255	74.	*	2	0940	405	4.	*	2	2210	555	0.
1	0845	106	4.	*	1	2115	256	73.	*	2	0945	406	4.	*	2	2215	556	0.
1	0850	107	4.	*	1	2120	257	73.	*	2	0950	407	4.	*	2	2220	557	0.
1	0855	108	4.	*	1	2125	258	72.	*	2	0955	408	4.	*	2	2225	558	0.
1	0900	109	4.	*	1	2130	259	72.	*	2	1000	409	4.	*	2	2230	559	0.
1	0905	110	4.	*	1	2135	260	71.	*	2	1005	410	4.	*	2	2235	560	0.
1	0910	111	4.	*	1	2140	261	70.	*	2	1010	411	4.	*	2	2240	561	0.
1	0915	112	5.	*	1	2145	262	70.	*	2	1015	412	4.	*	2	2245	562	0.
1	0920	113	5.	*	1	2150	263	69.	*	2	1020	413	4.	*	2	2250	563	0.
1	0925	114	5.	*	1	2155	264	69.	*	2	1025	414	4.	*	2	2255	564	0.
1	0930	115	5.	*	1	2200	265	68.	*	2	1030	415	4.	*	2	2300	565	0.
1	0935	116	5.	*	1	2205	266	67.	*	2	1035	416	4.	*	2	2305	566	0.
1	0940	117	5.	*	1	2210	267	67.	*	2	1040	417	3.	*	2	2310	567	0.
1	0945	118	5.	*	1	2215	268	66.	*	2	1045	418	3.	*	2	2315	568	0.
1	0950	119	5.	*	1	2220	269	66.	*	2	1050	419	3.	*	2	2320	569	0.
1	0955	120	5.	*	1	2225	270	65.	*	2	1055	420	3.	*	2	2325	570	0.
1	1000	121	5.	*	1	2230	271	64.	*	2	1100	421	3.	*	2	2330	571	0.
1	1005	122	5.	*	1	2235	272	64.	*	2	1105	422	3.	*	2	2335	572	0.
1	1010	123	5.	*	1	2240	273	63.	*	2	1110	423	3.	*	2	2340	573	0.
1	1015	124	5.	*	1	2245	274	63.	*	2	1115	424	3.	*	2	2345	574	0.
1	1020	125	5.	*	1	2250	275	62.	*	2	1120	425	3.	*	2	2350	575	0.
1	1025	126	5.	*	1	2255	276	61.	*	2	1125	426	3.	*	2	2355	576	0.
1	1030	127	5.	*	1	2300	277	61.	*	2	1130	427	3.	*	3	0000	577	0.
1	1035	128	5.	*	1	2305	278	60.	*	2	1135	428	3.	*	3	0005	578	0.
1	1040	129	5.	*	1	2310	279	60.	*	2	1140	429	3.	*	3	0010	579	0.
1	1045	130	5.	*	1	2315	280	59.	*	2	1145	430	3.	*	3	0015	580	0.
1	1050	131	6.	*	1	2320	281	59.	*	2	1150	431	3.	*	3	0020	581	0.
1	1055	132	6.	*	1	2325	282	58.	*	2	1155	432	3.	*	3	0025	582	0.
1	1100	133	6.	*	1	2330	283	58.	*	2	1200	433	3.	*	3	0030	583	0.
1	1105	134	6.	*	1	2335	284	58.	*	2	1205	434	2.	*	3	0035	584	0.
1	1110	135	7.	*	1	2340	285	57.	*	2	1210	435	2.	*	3	0040	585	0.
1	1115	136	9.	*	1	2345	286	57.	*	2	1215	436	2.	*	3	0045	586	0.
1	1120	137	11.	*	1	2350	287	56.	*	2	1220	437	2.	*	3	0050	587	0.
1	1125	138	13.	*	1	2355	288	56.	*	2	1225	438	2.	*	3	0055	588	0.
1	1130	139	15.	*	2	0000	289	56.	*	2	1230	439	2.	*	3	0100	589	0.
1	1135	140	21.	*	2	0005	290	55.	*	2	1235	440	2.	*	3	0105	590	0.
1	1140	141	36.	*	2	0010	291	55.	*	2	1240	441	2.	*	3	0110	591	0.
1	1145	142	63.	*	2	0015	292	55.	*	2	1245	442	2.	*	3	0115	592	0.
1	1150	143	133.	*	2	0020	293	55.	*	2	1250	443	2.	*	3	0120	593	0.
1	1155	144	303.	*	2	0025	294	54.	*	2	1255	444	2.	*	3	0125	594	0.
1	1200	145	551.	*	2	0030	295	54.	*	2	1300	445	2.	*	3	0130	595	0.
1	1205	146	852.	*	2	0035	296	54.	*	2	1305	446	2.	*	3	0135	596	0.
1	1210	147	1190.	*	2	0040	297	54.	*	2	1310	447	2.	*	3	0140	597	0.
1	1215	148	1405.	*	2	0045	298	53.	*	2	1315	448	2.	*	3	0145	598	0.
1	1220	149	1553.	*	2	0050	299	53.	*	2	1320	449	2.	*	3	0150	599	0.
1	1225	150	1683.	*	2	0055	300	53.	*	2	1325	450	2.	*	3	0155	600	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 5673.	13.00		1282.	352.	170.	170.
		(INCHES)	.642	.705	.708	.708
		(AC-FT)	636.	698.	701.	701.

CUMULATIVE AREA = 18.57 SQ MI

HYDROGRAPH AT CPWT4
TRANSPOSITION AREA 100.0 SQ MI

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		1230	151	1957.	2		0100	301	51.	2		1330	451	2.
1		0005	2	0.	1		1235	152	2852.	2		0105	302	50.	2		1335	452	2.
1		0010	3	0.	1		1240	153	3879.	2		0110	303	50.	2		1340	453	2.
1		0015	4	0.	1		1245	154	4788.	2		0115	304	49.	2		1345	454	2.
1		0020	5	0.	1		1250	155	5371.	2		0120	305	49.	2		1350	455	2.
1		0025	6	0.	1		1255	156	5538.	2		0125	306	48.	2		1355	456	2.
1		0030	7	0.	1		1300	157	5445.	2		0130	307	48.	2		1400	457	1.
1		0035	8	0.	1		1305	158	5206.	2		0135	308	47.	2		1405	458	1.
1		0040	9	0.	1		1310	159	4886.	2		0140	309	46.	2		1410	459	1.
1		0045	10	0.	1		1315	160	4539.	2		0145	310	46.	2		1415	460	1.
1		0050	11	0.	1		1320	161	4106.	2		0150	311	45.	2		1420	461	1.
1		0055	12	0.	1		1325	162	3568.	2		0155	312	44.	2		1425	462	1.
1		0100	13	0.	1		1330	163	3061.	2		0200	313	43.	2		1430	463	1.
1		0105	14	0.	1		1335	164	2595.	2		0205	314	42.	2		1435	464	1.
1		0110	15	0.	1		1340	165	2159.	2		0210	315	41.	2		1440	465	1.
1		0115	16	0.	1		1345	166	1802.	2		0215	316	40.	2		1445	466	1.
1		0120	17	0.	1		1350	167	1546.	2		0220	317	39.	2		1450	467	1.
1		0125	18	0.	1		1355	168	1340.	2		0225	318	38.	2		1455	468	1.
1		0130	19	0.	1		1400	169	1162.	2		0230	319	37.	2		1500	469	1.
1		0135	20	0.	1		1405	170	1032.	2		0235	320	36.	2		1505	470	1.
1		0140	21	0.	1		1410	171	932.	2		0240	321	35.	2		1510	471	1.
1		0145	22	0.	1		1415	172	842.	2		0245	322	34.	2		1515	472	1.
1		0150	23	0.	1		1420	173	758.	2		0250	323	33.	2		1520	473	1.
1		0155	24	0.	1		1425	174	685.	2		0255	324	32.	2		1525	474	1.
1		0200	25	0.	1		1430	175	625.	2		0300	325	30.	2		1530	475	1.
1		0205	26	0.	1		1435	176	580.	2		0305	326	29.	2		1535	476	1.
1		0210	27	0.	1		1440	177	543.	2		0310	327	28.	2		1540	477	1.
1		0215	28	0.	1		1445	178	509.	2		0315	328	27.	2		1545	478	1.
1		0220	29	0.	1		1450	179	478.	2		0320	329	26.	2		1550	479	1.
1		0225	30	0.	1		1455	180	449.	2		0325	330	25.	2		1555	480	1.
1		0230	31	0.	1		1500	181	423.	2		0330	331	24.	2		1600	481	1.
1		0235	32	0.	1		1505	182	400.	2		0335	332	23.	2		1605	482	1.
1		0240	33	0.	1		1510	183	376.	2		0340	333	22.	2		1610	483	1.
1		0245	34	1.	1		1515	184	353.	2		0345	334	21.	2		1615	484	1.
1		0250	35	1.	1		1520	185	333.	2		0350	335	20.	2		1620	485	1.
1		0255	36	1.	1		1525	186	314.	2		0355	336	20.	2		1625	486	1.
1		0300	37	1.	1		1530	187	298.	2		0400	337	19.	2		1630	487	1.
1		0305	38	1.	1		1535	188	283.	2		0405	338	19.	2		1635	488	1.
1		0310	39	1.	1		1540	189	269.	2		0410	339	18.	2		1640	489	1.
1		0315	40	1.	1		1545	190	256.	2		0415	340	18.	2		1645	490	1.
1		0320	41	1.	1		1550	191	244.	2		0420	341	17.	2		1650	491	1.
1		0325	42	1.	1		1555	192	233.	2		0425	342	17.	2		1655	492	1.
1		0330	43	1.	1		1600	193	223.	2		0430	343	17.	2		1700	493	1.
1		0335	44	1.	1		1605	194	213.	2		0435	344	16.	2		1705	494	1.
1		0340	45	2.	1		1610	195	205.	2		0440	345	16.	2		1710	495	1.
1		0345	46	2.	1		1615	196	197.	2		0445	346	16.	2		1715	496	1.
1		0350	47	2.	1		1620	197	189.	2		0450	347	15.	2		1720	497	1.
1		0355	48	2.	1		1625	198	182.	2		0455	348	15.	2		1725	498	1.
1		0400	49	2.	1		1630	199	176.	2		0500	349	15.	2		1730	499	1.
1		0405	50	2.	1		1635	200	171.	2		0505	350	14.	2		1735	500	1.
1		0410	51	2.	1		1640	201	166.	2		0510	351	14.	2		1740	501	1.
1		0415	52	2.	1		1645	202	162.	2		0515	352	14.	2		1745	502	1.
1		0420	53	2.	1		1650	203	158.	2		0520	353	13.	2		1750	503	1.
1		0425	54	2.	1		1655	204	154.	2		0525	354	13.	2		1755	504	1.
1		0430	55	2.	1		1700	205	150.	2		0530	355	13.	2		1800	505	1.
1		0435	56	2.	1		1705	206	146.	2		0535	356	12.	2		1805	506	1.
1		0440	57	2.	1		1710	207	143.	2		0540	357	12.	2		1810	507	1.
1		0445	58	3.	1		1715	208	139.	2		0545	358	12.	2		1815	508	1.
1		0450	59	3.	1		1720	209	136.	2		0550	359	12.	2		1820	509	1.
1		0455	60	3.	1		1725	210	133.	2		0555	360	11.	2		1825	510	0.
1		0500	61	3.	1		1730	211	131.	2		0600	361	11.	2		1830	511	0.
1		0505	62	3.	1		1735	212	128.	2		0605	362	11.	2		1835	512	0.
1		0510	63	3.	1		1740	213	125.	2		0610	363	11.	2		1840	513	0.
1		0515	64	3.	1		1745	214	123.	2		0615	364	10.	2		1845	514	0.
1		0520	65	3.	1		1750	215	121.	2		0620	365	10.	2		1850	515	0.
1		0525	66	3.	1		1755	216	118.	2		0625	366	10.	2		1855	516	0.
1		0530	67	3.	1		1800	217	117.	2		0630	367	10.	2		1900	517	0.
1		0535	68	3.	1		1805	218	116.	2		0635	368	10.	2		1905	518	0.
1		0540	69	3.	1		1810	219	114.	2		0640	369	9.	2		1910	519	0.
1		0545	70	3.	1		1815	220	113.	2		0645	370	9.	2		1915	520	0.
1		0550	71	3.	1		1820	221	111.	2		0650	371	9.	2		1920	521	0.
1		0555	72	3.	1		1825	222	110.	2		0655	372	9.	2		1925	522	0.
1		0600	73	3.	1		1830	223	108.	2		0700	373	9.	2		1930	523	0.
1		0605	74	3.	1		1835	224	107.	2		0705	374	8.	2		1935	524	0.
1		0610	75	3.	1		1840	225	105.	2		0710	375	8.	2		1940	525	0.
1		0615	76	3.	1		1845	226	104.	2		0715	376	8.	2		1945	526	0.
1		0620	77	3.	1		1850	227	102.	2		0720	377	8.	2		1950	527	0.
1		0625	78	3.	1		1855	228	101.	2		0725	378	8.	2		1955	528	0.
1		0630	79	3.	1		1900	229	99.	2		0730	379	8.	2		2000	529	0.
1		0635	80	3.	1		1905	230	98.	2		0735	380	7.	2		2005	530	0.
1		0640	81	3.	1		1910	231	96.	2		0740	381	7.	2		2010	531	0.
1		0645	82	3.	1		1915	232	95.	2		0745	382	7.	2		2015	532	0.
1		0650	83	3.	1		1920	233	94.	2		0750	383	7.	2		2020	533	0.

1	0655	84	3.	*	1	1925	234	92.	*	2	0755	384	7.	*	2	2025	534	0.
1	0700	85	3.	*	1	1930	235	91.	*	2	0800	385	7.	*	2	2030	535	0.
1	0705	86	3.	*	1	1935	236	90.	*	2	0805	386	7.	*	2	2035	536	0.
1	0710	87	3.	*	1	1940	237	89.	*	2	0810	387	6.	*	2	2040	537	0.
1	0715	88	4.	*	1	1945	238	87.	*	2	0815	388	6.	*	2	2045	538	0.
1	0720	89	4.	*	1	1950	239	86.	*	2	0820	389	6.	*	2	2050	539	0.
1	0725	90	4.	*	1	1955	240	85.	*	2	0825	390	6.	*	2	2055	540	0.
1	0730	91	4.	*	1	2000	241	84.	*	2	0830	391	6.	*	2	2100	541	0.
1	0735	92	4.	*	1	2005	242	83.	*	2	0835	392	6.	*	2	2105	542	0.
1	0740	93	4.	*	1	2010	243	82.	*	2	0840	393	6.	*	2	2110	543	0.
1	0745	94	4.	*	1	2015	244	81.	*	2	0845	394	6.	*	2	2115	544	0.
1	0750	95	4.	*	1	2020	245	80.	*	2	0850	395	5.	*	2	2120	545	0.
1	0755	96	4.	*	1	2025	246	79.	*	2	0855	396	5.	*	2	2125	546	0.
1	0800	97	4.	*	1	2030	247	78.	*	2	0900	397	5.	*	2	2130	547	0.
1	0805	98	4.	*	1	2035	248	77.	*	2	0905	398	5.	*	2	2135	548	0.
1	0810	99	4.	*	1	2040	249	76.	*	2	0910	399	5.	*	2	2140	549	0.
1	0815	100	4.	*	1	2045	250	75.	*	2	0915	400	5.	*	2	2145	550	0.
1	0820	101	4.	*	1	2050	251	75.	*	2	0920	401	5.	*	2	2150	551	0.
1	0825	102	4.	*	1	2055	252	74.	*	2	0925	402	5.	*	2	2155	552	0.
1	0830	103	4.	*	1	2100	253	73.	*	2	0930	403	5.	*	2	2200	553	0.
1	0835	104	4.	*	1	2105	254	73.	*	2	0935	404	5.	*	2	2205	554	0.
1	0840	105	4.	*	1	2110	255	72.	*	2	0940	405	4.	*	2	2210	555	0.
1	0845	106	4.	*	1	2115	256	72.	*	2	0945	406	4.	*	2	2215	556	0.
1	0850	107	4.	*	1	2120	257	71.	*	2	0950	407	4.	*	2	2220	557	0.
1	0855	108	4.	*	1	2125	258	70.	*	2	0955	408	4.	*	2	2225	558	0.
1	0900	109	4.	*	1	2130	259	70.	*	2	1000	409	4.	*	2	2230	559	0.
1	0905	110	4.	*	1	2135	260	69.	*	2	1005	410	4.	*	2	2235	560	0.
1	0910	111	4.	*	1	2140	261	69.	*	2	1010	411	4.	*	2	2240	561	0.
1	0915	112	4.	*	1	2145	262	68.	*	2	1015	412	4.	*	2	2245	562	0.
1	0920	113	4.	*	1	2150	263	67.	*	2	1020	413	4.	*	2	2250	563	0.
1	0925	114	4.	*	1	2155	264	67.	*	2	1025	414	4.	*	2	2255	564	0.
1	0930	115	4.	*	1	2200	265	66.	*	2	1030	415	4.	*	2	2300	565	0.
1	0935	116	5.	*	1	2205	266	66.	*	2	1035	416	4.	*	2	2305	566	0.
1	0940	117	5.	*	1	2210	267	65.	*	2	1040	417	3.	*	2	2310	567	0.
1	0945	118	5.	*	1	2215	268	64.	*	2	1045	418	3.	*	2	2315	568	0.
1	0950	119	5.	*	1	2220	269	64.	*	2	1050	419	3.	*	2	2320	569	0.
1	0955	120	5.	*	1	2225	270	63.	*	2	1055	420	3.	*	2	2325	570	0.
1	1000	121	5.	*	1	2230	271	63.	*	2	1100	421	3.	*	2	2330	571	0.
1	1005	122	5.	*	1	2235	272	62.	*	2	1105	422	3.	*	2	2335	572	0.
1	1010	123	5.	*	1	2240	273	61.	*	2	1110	423	3.	*	2	2340	573	0.
1	1015	124	5.	*	1	2245	274	61.	*	2	1115	424	3.	*	2	2345	574	0.
1	1020	125	5.	*	1	2250	275	60.	*	2	1120	425	3.	*	2	2350	575	0.
1	1025	126	5.	*	1	2255	276	60.	*	2	1125	426	3.	*	2	2355	576	0.
1	1030	127	5.	*	1	2300	277	59.	*	2	1130	427	3.	*	3	0000	577	0.
1	1035	128	5.	*	1	2305	278	59.	*	2	1135	428	3.	*	3	0005	578	0.
1	1040	129	5.	*	1	2310	279	58.	*	2	1140	429	3.	*	3	0010	579	0.
1	1045	130	5.	*	1	2315	280	58.	*	2	1145	430	3.	*	3	0015	580	0.
1	1050	131	5.	*	1	2320	281	57.	*	2	1150	431	3.	*	3	0020	581	0.
1	1055	132	5.	*	1	2325	282	57.	*	2	1155	432	3.	*	3	0025	582	0.
1	1100	133	5.	*	1	2330	283	56.	*	2	1200	433	2.	*	3	0030	583	0.
1	1105	134	6.	*	1	2335	284	56.	*	2	1205	434	2.	*	3	0035	584	0.
1	1110	135	6.	*	1	2340	285	55.	*	2	1210	435	2.	*	3	0040	585	0.
1	1115	136	6.	*	1	2345	286	55.	*	2	1215	436	2.	*	3	0045	586	0.
1	1120	137	7.	*	1	2350	287	55.	*	2	1220	437	2.	*	3	0050	587	0.
1	1125	138	9.	*	1	2355	288	54.	*	2	1225	438	2.	*	3	0055	588	0.
1	1130	139	11.	*	2	0000	289	54.	*	2	1230	439	2.	*	3	0100	589	0.
1	1135	140	15.	*	2	0005	290	54.	*	2	1235	440	2.	*	3	0105	590	0.
1	1140	141	25.	*	2	0010	291	53.	*	2	1240	441	2.	*	3	0110	591	0.
1	1145	142	45.	*	2	0015	292	53.	*	2	1245	442	2.	*	3	0115	592	0.
1	1150	143	105.	*	2	0020	293	53.	*	2	1250	443	2.	*	3	0120	593	0.
1	1155	144	257.	*	2	0025	294	53.	*	2	1255	444	2.	*	3	0125	594	0.
1	1200	145	488.	*	2	0030	295	52.	*	2	1300	445	2.	*	3	0130	595	0.
1	1205	146	775.	*	2	0035	296	52.	*	2	1305	446	2.	*	3	0135	596	0.
1	1210	147	1096.	*	2	0040	297	52.	*	2	1310	447	2.	*	3	0140	597	0.
1	1215	148	1295.	*	2	0045	298	52.	*	2	1315	448	2.	*	3	0145	598	0.
1	1220	149	1399.	*	2	0050	299	51.	*	2	1320	449	2.	*	3	0150	599	0.
1	1225	150	1482.	*	2	0055	300	51.	*	2	1325	450	2.	*	3	0155	600	0.

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	49.92-HR
+ 5538.	12.92	(CFS)	1215.	334.	161.	161.
		(INCHES)	.608	.669	.672	.672
		(AC-FT)	602.	662.	666.	666.

CUMULATIVE AREA = 18.57 SQ MI

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HYDROGRAPH AT CPWT4
TRANSPOSITION AREA 200.0 SQ MI

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DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		1230	151	1713.	2		0100	301	49.	2		1330	451	2.
1		0005	2	0.	1		1235	152	2535.	2		0105	302	49.	2		1335	452	2.
1		0010	3	0.	1		1240	153	3561.	2		0110	303	48.	2		1340	453	2.
1		0015	4	0.	1		1245	154	4515.	2		0115	304	48.	2		1345	454	2.
1		0020	5	0.	1		1250	155	5130.	2		0120	305	48.	2		1350	455	2.

1	0025	6	0.	*	1	1255	156	5345.	*	2	0125	306	47.	*	2	1355	456	2.
1	0030	7	0.	*	1	1300	157	5267.	*	2	0130	307	46.	*	2	1400	457	1.
1	0035	8	0.	*	1	1305	158	5039.	*	2	0135	308	46.	*	2	1405	458	1.
1	0040	9	0.	*	1	1310	159	4742.	*	2	0140	309	45.	*	2	1410	459	1.
1	0045	10	0.	*	1	1315	160	4405.	*	2	0145	310	44.	*	2	1415	460	1.
1	0050	11	0.	*	1	1320	161	3964.	*	2	0150	311	44.	*	2	1420	461	1.
1	0055	12	0.	*	1	1325	162	3430.	*	2	0155	312	43.	*	2	1425	462	1.
1	0100	13	0.	*	1	1330	163	2941.	*	2	0200	313	42.	*	2	1430	463	1.
1	0105	14	0.	*	1	1335	164	2486.	*	2	0205	314	41.	*	2	1435	464	1.
1	0110	15	0.	*	1	1340	165	2061.	*	2	0210	315	40.	*	2	1440	465	1.
1	0115	16	0.	*	1	1345	166	1719.	*	2	0215	316	39.	*	2	1445	466	1.
1	0120	17	0.	*	1	1350	167	1482.	*	2	0220	317	38.	*	2	1450	467	1.
1	0125	18	0.	*	1	1355	168	1283.	*	2	0225	318	37.	*	2	1455	468	1.
1	0130	19	0.	*	1	1400	169	1116.	*	2	0230	319	36.	*	2	1500	469	1.
1	0135	20	0.	*	1	1405	170	995.	*	2	0235	320	35.	*	2	1505	470	1.
1	0140	21	0.	*	1	1410	171	900.	*	2	0240	321	34.	*	2	1510	471	1.
1	0145	22	0.	*	1	1415	172	812.	*	2	0245	322	33.	*	2	1515	472	1.
1	0150	23	0.	*	1	1420	173	732.	*	2	0250	323	32.	*	2	1520	473	1.
1	0155	24	0.	*	1	1425	174	662.	*	2	0255	324	31.	*	2	1525	474	1.
1	0200	25	0.	*	1	1430	175	607.	*	2	0300	325	30.	*	2	1530	475	1.
1	0205	26	0.	*	1	1435	176	564.	*	2	0305	326	28.	*	2	1535	476	1.
1	0210	27	0.	*	1	1440	177	528.	*	2	0310	327	27.	*	2	1540	477	1.
1	0215	28	0.	*	1	1445	178	495.	*	2	0315	328	26.	*	2	1545	478	1.
1	0220	29	0.	*	1	1450	179	466.	*	2	0320	329	25.	*	2	1550	479	1.
1	0225	30	0.	*	1	1455	180	437.	*	2	0325	330	24.	*	2	1555	480	1.
1	0230	31	0.	*	1	1500	181	413.	*	2	0330	331	23.	*	2	1600	481	1.
1	0235	32	0.	*	1	1505	182	390.	*	2	0335	332	22.	*	2	1605	482	1.
1	0240	33	0.	*	1	1510	183	367.	*	2	0340	333	21.	*	2	1610	483	1.
1	0245	34	1.	*	1	1515	184	345.	*	2	0345	334	21.	*	2	1615	484	1.
1	0250	35	1.	*	1	1520	185	325.	*	2	0350	335	20.	*	2	1620	485	1.
1	0255	36	1.	*	1	1525	186	307.	*	2	0355	336	20.	*	2	1625	486	1.
1	0300	37	1.	*	1	1530	187	291.	*	2	0400	337	19.	*	2	1630	487	1.
1	0305	38	1.	*	1	1535	188	276.	*	2	0405	338	19.	*	2	1635	488	1.
1	0310	39	1.	*	1	1540	189	262.	*	2	0410	339	18.	*	2	1640	489	1.
1	0315	40	1.	*	1	1545	190	250.	*	2	0415	340	18.	*	2	1645	490	1.
1	0320	41	1.	*	1	1550	191	238.	*	2	0420	341	17.	*	2	1650	491	1.
1	0325	42	1.	*	1	1555	192	228.	*	2	0425	342	17.	*	2	1655	492	1.
1	0330	43	1.	*	1	1600	193	218.	*	2	0430	343	16.	*	2	1700	493	1.
1	0335	44	1.	*	1	1605	194	209.	*	2	0435	344	16.	*	2	1705	494	1.
1	0340	45	2.	*	1	1610	195	200.	*	2	0440	345	16.	*	2	1710	495	1.
1	0345	46	2.	*	1	1615	196	192.	*	2	0445	346	15.	*	2	1715	496	1.
1	0350	47	2.	*	1	1620	197	185.	*	2	0450	347	15.	*	2	1720	497	1.
1	0355	48	2.	*	1	1625	198	178.	*	2	0455	348	15.	*	2	1725	498	1.
1	0400	49	2.	*	1	1630	199	173.	*	2	0500	349	14.	*	2	1730	499	1.
1	0405	50	2.	*	1	1635	200	168.	*	2	0505	350	14.	*	2	1735	500	1.
1	0410	51	2.	*	1	1640	201	163.	*	2	0510	351	14.	*	2	1740	501	1.
1	0415	52	2.	*	1	1645	202	159.	*	2	0515	352	13.	*	2	1745	502	1.
1	0420	53	2.	*	1	1650	203	154.	*	2	0520	353	13.	*	2	1750	503	1.
1	0425	54	2.	*	1	1655	204	150.	*	2	0525	354	13.	*	2	1755	504	1.
1	0430	55	2.	*	1	1700	205	147.	*	2	0530	355	13.	*	2	1800	505	1.
1	0435	56	2.	*	1	1705	206	143.	*	2	0535	356	12.	*	2	1805	506	1.
1	0440	57	2.	*	1	1710	207	140.	*	2	0540	357	12.	*	2	1810	507	1.
1	0445	58	2.	*	1	1715	208	136.	*	2	0545	358	12.	*	2	1815	508	1.
1	0450	59	2.	*	1	1720	209	133.	*	2	0550	359	12.	*	2	1820	509	0.
1	0455	60	3.	*	1	1725	210	130.	*	2	0555	360	11.	*	2	1825	510	0.
1	0500	61	3.	*	1	1730	211	128.	*	2	0600	361	11.	*	2	1830	511	0.
1	0505	62	3.	*	1	1735	212	125.	*	2	0605	362	11.	*	2	1835	512	0.
1	0510	63	3.	*	1	1740	213	122.	*	2	0610	363	11.	*	2	1840	513	0.
1	0515	64	3.	*	1	1745	214	120.	*	2	0615	364	10.	*	2	1845	514	0.
1	0520	65	3.	*	1	1750	215	118.	*	2	0620	365	10.	*	2	1850	515	0.
1	0525	66	3.	*	1	1755	216	117.	*	2	0625	366	10.	*	2	1855	516	0.
1	0530	67	3.	*	1	1800	217	115.	*	2	0630	367	10.	*	2	1900	517	0.
1	0535	68	3.	*	1	1805	218	114.	*	2	0635	368	10.	*	2	1905	518	0.
1	0540	69	3.	*	1	1810	219	112.	*	2	0640	369	9.	*	2	1910	519	0.
1	0545	70	3.	*	1	1815	220	111.	*	2	0645	370	9.	*	2	1915	520	0.
1	0550	71	3.	*	1	1820	221	109.	*	2	0650	371	9.	*	2	1920	521	0.
1	0555	72	3.	*	1	1825	222	108.	*	2	0655	372	9.	*	2	1925	522	0.
1	0600	73	3.	*	1	1830	223	106.	*	2	0700	373	9.	*	2	1930	523	0.
1	0605	74	3.	*	1	1835	224	104.	*	2	0705	374	8.	*	2	1935	524	0.
1	0610	75	3.	*	1	1840	225	103.	*	2	0710	375	8.	*	2	1940	525	0.
1	0615	76	3.	*	1	1845	226	101.	*	2	0715	376	8.	*	2	1945	526	0.
1	0620	77	3.	*	1	1850	227	100.	*	2	0720	377	8.	*	2	1950	527	0.
1	0625	78	3.	*	1	1855	228	98.	*	2	0725	378	8.	*	2	1955	528	0.
1	0630	79	3.	*	1	1900	229	97.	*	2	0730	379	8.	*	2	2000	529	0.
1	0635	80	3.	*	1	1905	230	95.	*	2	0735	380	7.	*	2	2005	530	0.
1	0640	81	3.	*	1	1910	231	94.	*	2	0740	381	7.	*	2	2010	531	0.
1	0645	82	3.	*	1	1915	232	93.	*	2	0745	382	7.	*	2	2015	532	0.
1	0650	83	3.	*	1	1920	233	91.	*	2	0750	383	7.	*	2	2020	533	0.
1	0655	84	3.	*	1	1925	234	90.	*	2	0755	384	7.	*	2	2025	534	0.
1	0700	85	3.	*	1	1930	235	89.	*	2	0800	385	7.	*	2	2030	535	0.
1	0705	86	3.	*	1	1935	236	87.	*	2	0805	386	7.	*	2	2035	536	0.
1	0710	87	3.	*	1	1940	237	86.	*	2	0810	387	6.	*	2	2040	537	0.
1	0715	88	3.	*	1	1945	238	85.	*	2	0815	388	6.	*	2	2045	538	0.
1	0720	89	3.	*	1	1950	239	84.	*	2	0820	389	6.	*	2	2050	539	0.
1	0725	90	3.	*	1	1955	240	83.	*	2	0825	390	6.	*	2	2055	540	0.
1	0730	91	4.	*	1	2000	241	82.	*	2	0830	391	6.	*	2	2100	541	0.
1	0735	92	4.	*	1	2005	242	80.	*	2	0835	392	6.	*	2	2105	542	0.
1	0740	93	4.	*	1	2010	243	79.	*	2	0840	393	6.	*	2	2110	543	0.
1	0745	94	4.	*	1	2015	244	78.	*	2	0845	394	6.	*	2	2115	544	0.
1	0750	95	4.	*	1	2020	245	77.	*	2	0850	395	5.	*	2	2120	545	0.
1	0755	96	4.	*	1	2025	246	77.	*	2	0855	396	5.	*	2	2125	546	0.
1	0800	97	4.	*	1	2030	247	76.	*	2	0900	397	5.	*	2	2130	547	0.
1	0805	98	4.	*	1	2035	248	75.	*	2	0905	398	5.	*	2	2135	548	0.
1	0810	99	4.	*	1	2040	249	74.	*	2	0910	399	5.	*	2	2140	549	0.
1	0815	100	4.	*	1	2045	250	74.	*	2	0915	400	5.	*	2	2145	550	0.

1	0820	101	4.	*	1	2050	251	73.	*	2	0920	401	5.	*	2	2150	551	0.
1	0825	102	4.	*	1	2055	252	72.	*	2	0925	402	5.	*	2	2155	552	0.
1	0830	103	4.	*	1	2100	253	72.	*	2	0930	403	5.	*	2	2200	553	0.
1	0835	104	4.	*	1	2105	254	71.	*	2	0935	404	4.	*	2	2205	554	0.
1	0840	105	4.	*	1	2110	255	71.	*	2	0940	405	4.	*	2	2210	555	0.
1	0845	106	4.	*	1	2115	256	70.	*	2	0945	406	4.	*	2	2215	556	0.
1	0850	107	4.	*	1	2120	257	70.	*	2	0950	407	4.	*	2	2220	557	0.
1	0855	108	4.	*	1	2125	258	69.	*	2	0955	408	4.	*	2	2225	558	0.
1	0900	109	4.	*	1	2130	259	68.	*	2	1000	409	4.	*	2	2230	559	0.
1	0905	110	4.	*	1	2135	260	68.	*	2	1005	410	4.	*	2	2235	560	0.
1	0910	111	4.	*	1	2140	261	67.	*	2	1010	411	4.	*	2	2240	561	0.
1	0915	112	4.	*	1	2145	262	67.	*	2	1015	412	4.	*	2	2245	562	0.
1	0920	113	4.	*	1	2150	263	66.	*	2	1020	413	4.	*	2	2250	563	0.
1	0925	114	4.	*	1	2155	264	65.	*	2	1025	414	4.	*	2	2255	564	0.
1	0930	115	4.	*	1	2200	265	65.	*	2	1030	415	4.	*	2	2300	565	0.
1	0935	116	4.	*	1	2205	266	64.	*	2	1035	416	3.	*	2	2305	566	0.
1	0940	117	4.	*	1	2210	267	63.	*	2	1040	417	3.	*	2	2310	567	0.
1	0945	118	4.	*	1	2215	268	63.	*	2	1045	418	3.	*	2	2315	568	0.
1	0950	119	5.	*	1	2220	269	62.	*	2	1050	419	3.	*	2	2320	569	0.
1	0955	120	5.	*	1	2225	270	62.	*	2	1055	420	3.	*	2	2325	570	0.
1	1000	121	5.	*	1	2230	271	61.	*	2	1100	421	3.	*	2	2330	571	0.
1	1005	122	5.	*	1	2235	272	60.	*	2	1105	422	3.	*	2	2335	572	0.
1	1010	123	5.	*	1	2240	273	60.	*	2	1110	423	3.	*	2	2340	573	0.
1	1015	124	5.	*	1	2245	274	59.	*	2	1115	424	3.	*	2	2345	574	0.
1	1020	125	5.	*	1	2250	275	59.	*	2	1120	425	3.	*	2	2350	575	0.
1	1025	126	5.	*	1	2255	276	58.	*	2	1125	426	3.	*	2	2355	576	0.
1	1030	127	5.	*	1	2300	277	58.	*	2	1130	427	3.	*	3	0000	577	0.
1	1035	128	5.	*	1	2305	278	57.	*	2	1135	428	3.	*	3	0005	578	0.
1	1040	129	5.	*	1	2310	279	57.	*	2	1140	429	3.	*	3	0010	579	0.
1	1045	130	5.	*	1	2315	280	56.	*	2	1145	430	3.	*	3	0015	580	0.
1	1050	131	5.	*	1	2320	281	56.	*	2	1150	431	3.	*	3	0020	581	0.
1	1055	132	5.	*	1	2325	282	55.	*	2	1155	432	2.	*	3	0025	582	0.
1	1100	133	5.	*	1	2330	283	55.	*	2	1200	433	2.	*	3	0030	583	0.
1	1105	134	5.	*	1	2335	284	54.	*	2	1205	434	2.	*	3	0035	584	0.
1	1110	135	5.	*	1	2340	285	54.	*	2	1210	435	2.	*	3	0040	585	0.
1	1115	136	6.	*	1	2345	286	54.	*	2	1215	436	2.	*	3	0045	586	0.
1	1120	137	6.	*	1	2350	287	53.	*	2	1220	437	2.	*	3	0050	587	0.
1	1125	138	7.	*	1	2355	288	53.	*	2	1225	438	2.	*	3	0055	588	0.
1	1130	139	8.	*	2	0000	289	53.	*	2	1230	439	2.	*	3	0100	589	0.
1	1135	140	10.	*	2	0005	290	52.	*	2	1235	440	2.	*	3	0105	590	0.
1	1140	141	17.	*	2	0010	291	52.	*	2	1240	441	2.	*	3	0110	591	0.
1	1145	142	31.	*	2	0015	292	52.	*	2	1245	442	2.	*	3	0115	592	0.
1	1150	143	82.	*	2	0020	293	51.	*	2	1250	443	2.	*	3	0120	593	0.
1	1155	144	221.	*	2	0025	294	51.	*	2	1255	444	2.	*	3	0125	594	0.
1	1200	145	438.	*	2	0030	295	51.	*	2	1300	445	2.	*	3	0130	595	0.
1	1205	146	711.	*	2	0035	296	51.	*	2	1305	446	2.	*	3	0135	596	0.
1	1210	147	1020.	*	2	0040	297	50.	*	2	1310	447	2.	*	3	0140	597	0.
1	1215	148	1207.	*	2	0045	298	50.	*	2	1315	448	2.	*	3	0145	598	0.
1	1220	149	1283.	*	2	0050	299	50.	*	2	1320	449	2.	*	3	0150	599	0.
1	1225	150	1334.	*	2	0055	300	50.	*	2	1325	450	2.	*	3	0155	600	0.

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	49.92-HR
+ 5345.	12.92	(CFS)	1159.	319.	154.	154.
		(INCHES)	.580	.639	.642	.642
		(AC-FT)	574.	633.	636.	636.

CUMULATIVE AREA = 18.57 SQ MI

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INTERPOLATED HYDROGRAPH AT CPWT4

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DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		1230	151	2649.	2		0100	301	55.	2		1330	451	2.
1		0005	2	0.	1		1235	152	3654.	2		0105	302	54.	2		1335	452	2.
1		0010	3	0.	1		1240	153	4685.	2		0110	303	54.	2		1340	453	2.
1		0015	4	0.	1		1245	154	5439.	2		0115	304	54.	2		1345	454	2.
1		0020	5	0.	1		1250	155	5837.	2		0120	305	53.	2		1350	455	2.
1		0025	6	0.	1		1255	156	5980.	2		0125	306	52.	2		1355	456	2.
1		0030	7	0.	1		1300	157	5952.	2		0130	307	52.	2		1400	457	2.
1		0035	8	0.	1		1305	158	5782.	2		0135	308	51.	2		1405	458	2.
1		0040	9	0.	1		1310	159	5431.	2		0140	309	50.	2		1410	459	1.
1		0045	10	0.	1		1315	160	4974.	2		0145	310	50.	2		1415	460	1.
1		0050	11	0.	1		1320	161	4513.	2		0150	311	49.	2		1420	461	1.
1		0055	12	0.	1		1325	162	3996.	2		0155	312	48.	2		1425	462	1.
1		0100	13	0.	1		1330	163	3442.	2		0200	313	47.	2		1430	463	1.
1		0105	14	0.	1		1335	164	2941.	2		0205	314	46.	2		1435	464	1.
1		0110	15	0.	1		1340	165	2474.	2		0210	315	45.	2		1440	465	1.
1		0115	16	0.	1		1345	166	2071.	2		0215	316	44.	2		1445	466	1.
1		0120	17	0.	1		1350	167	1756.	2		0220	317	43.	2		1450	467	1.
1		0125	18	0.	1		1355	168	1530.	2		0225	318	41.	2		1455	468	1.
1		0130	19	0.	1		1400	169	1334.	2		0230	319	40.	2		1500	469	1.
1		0135	20	0.	1		1405	170	1175.	2		0235	320	39.	2		1505	470	1.
1		0140	21	0.	1		1410	171	1054.	2		0240	321	38.	2		1510	471	1.
1		0145	22	0.	1		1415	172	954.	2		0245	322	37.	2		1515	472	1.
1		0150	23	0.	1		1420	173	861.	2		0250	323	35.	2		1520	473	1.

1	0155	24	0.	*	1	1425	174	777.	*	2	0255	324	34.	*	2	1525	474	1.
1	0200	25	0.	*	1	1430	175	705.	*	2	0300	325	33.	*	2	1530	475	1.
1	0205	26	0.	*	1	1435	176	646.	*	2	0305	326	32.	*	2	1535	476	1.
1	0210	27	0.	*	1	1440	177	601.	*	2	0310	327	30.	*	2	1540	477	1.
1	0215	28	0.	*	1	1445	178	562.	*	2	0315	328	29.	*	2	1545	478	1.
1	0220	29	0.	*	1	1450	179	526.	*	2	0320	329	28.	*	2	1550	479	1.
1	0225	30	0.	*	1	1455	180	493.	*	2	0325	330	27.	*	2	1555	480	1.
1	0230	31	0.	*	1	1500	181	462.	*	2	0330	331	26.	*	2	1600	481	1.
1	0235	32	0.	*	1	1505	182	434.	*	2	0335	332	25.	*	2	1605	482	1.
1	0240	33	0.	*	1	1510	183	409.	*	2	0340	333	23.	*	2	1610	483	1.
1	0245	34	1.	*	1	1515	184	385.	*	2	0345	334	23.	*	2	1615	484	1.
1	0250	35	1.	*	1	1520	185	361.	*	2	0350	335	22.	*	2	1620	485	1.
1	0255	36	1.	*	1	1525	186	340.	*	2	0355	336	21.	*	2	1625	486	1.
1	0300	37	1.	*	1	1530	187	322.	*	2	0400	337	20.	*	2	1630	487	1.
1	0305	38	1.	*	1	1535	188	305.	*	2	0405	338	20.	*	2	1635	488	1.
1	0310	39	1.	*	1	1540	189	290.	*	2	0410	339	19.	*	2	1640	489	1.
1	0315	40	1.	*	1	1545	190	275.	*	2	0415	340	19.	*	2	1645	490	1.
1	0320	41	1.	*	1	1550	191	262.	*	2	0420	341	18.	*	2	1650	491	1.
1	0325	42	1.	*	1	1555	192	251.	*	2	0425	342	18.	*	2	1655	492	1.
1	0330	43	1.	*	1	1600	193	240.	*	2	0430	343	17.	*	2	1700	493	1.
1	0335	44	2.	*	1	1605	194	230.	*	2	0435	344	17.	*	2	1705	494	1.
1	0340	45	2.	*	1	1610	195	220.	*	2	0440	345	16.	*	2	1710	495	1.
1	0345	46	2.	*	1	1615	196	211.	*	2	0445	346	16.	*	2	1715	496	1.
1	0350	47	2.	*	1	1620	197	203.	*	2	0450	347	16.	*	2	1720	497	1.
1	0355	48	2.	*	1	1625	198	195.	*	2	0455	348	15.	*	2	1725	498	1.
1	0400	49	2.	*	1	1630	199	188.	*	2	0500	349	15.	*	2	1730	499	1.
1	0405	50	2.	*	1	1635	200	182.	*	2	0505	350	15.	*	2	1735	500	1.
1	0410	51	2.	*	1	1640	201	177.	*	2	0510	351	14.	*	2	1740	501	1.
1	0415	52	2.	*	1	1645	202	172.	*	2	0515	352	14.	*	2	1745	502	1.
1	0420	53	2.	*	1	1650	203	167.	*	2	0520	353	14.	*	2	1750	503	1.
1	0425	54	2.	*	1	1655	204	163.	*	2	0525	354	13.	*	2	1755	504	1.
1	0430	55	3.	*	1	1700	205	159.	*	2	0530	355	13.	*	2	1800	505	1.
1	0435	56	3.	*	1	1705	206	155.	*	2	0535	356	13.	*	2	1805	506	1.
1	0440	57	3.	*	1	1710	207	152.	*	2	0540	357	13.	*	2	1810	507	1.
1	0445	58	3.	*	1	1715	208	149.	*	2	0545	358	12.	*	2	1815	508	1.
1	0450	59	3.	*	1	1720	209	145.	*	2	0550	359	12.	*	2	1820	509	1.
1	0455	60	3.	*	1	1725	210	142.	*	2	0555	360	12.	*	2	1825	510	1.
1	0500	61	3.	*	1	1730	211	139.	*	2	0600	361	12.	*	2	1830	511	1.
1	0505	62	3.	*	1	1735	212	137.	*	2	0605	362	11.	*	2	1835	512	0.
1	0510	63	3.	*	1	1740	213	134.	*	2	0610	363	11.	*	2	1840	513	0.
1	0515	64	3.	*	1	1745	214	132.	*	2	0615	364	11.	*	2	1845	514	0.
1	0520	65	3.	*	1	1750	215	129.	*	2	0620	365	11.	*	2	1850	515	0.
1	0525	66	3.	*	1	1755	216	127.	*	2	0625	366	10.	*	2	1855	516	0.
1	0530	67	3.	*	1	1800	217	125.	*	2	0630	367	10.	*	2	1900	517	0.
1	0535	68	3.	*	1	1805	218	123.	*	2	0635	368	10.	*	2	1905	518	0.
1	0540	69	3.	*	1	1810	219	121.	*	2	0640	369	10.	*	2	1910	519	0.
1	0545	70	3.	*	1	1815	220	119.	*	2	0645	370	10.	*	2	1915	520	0.
1	0550	71	3.	*	1	1820	221	117.	*	2	0650	371	9.	*	2	1920	521	0.
1	0555	72	3.	*	1	1825	222	116.	*	2	0655	372	9.	*	2	1925	522	0.
1	0600	73	3.	*	1	1830	223	114.	*	2	0700	373	9.	*	2	1930	523	0.
1	0605	74	3.	*	1	1835	224	113.	*	2	0705	374	9.	*	2	1935	524	0.
1	0610	75	3.	*	1	1840	225	112.	*	2	0710	375	9.	*	2	1940	525	0.
1	0615	76	3.	*	1	1845	226	111.	*	2	0715	376	8.	*	2	1945	526	0.
1	0620	77	3.	*	1	1850	227	109.	*	2	0720	377	8.	*	2	1950	527	0.
1	0625	78	3.	*	1	1855	228	108.	*	2	0725	378	8.	*	2	1955	528	0.
1	0630	79	3.	*	1	1900	229	106.	*	2	0730	379	8.	*	2	2000	529	0.
1	0635	80	3.	*	1	1905	230	105.	*	2	0735	380	8.	*	2	2005	530	0.
1	0640	81	4.	*	1	1910	231	104.	*	2	0740	381	8.	*	2	2010	531	0.
1	0645	82	4.	*	1	1915	232	102.	*	2	0745	382	7.	*	2	2015	532	0.
1	0650	83	4.	*	1	1920	233	101.	*	2	0750	383	7.	*	2	2020	533	0.
1	0655	84	4.	*	1	1925	234	100.	*	2	0755	384	7.	*	2	2025	534	0.
1	0700	85	4.	*	1	1930	235	98.	*	2	0800	385	7.	*	2	2030	535	0.
1	0705	86	4.	*	1	1935	236	97.	*	2	0805	386	7.	*	2	2035	536	0.
1	0710	87	4.	*	1	1940	237	96.	*	2	0810	387	7.	*	2	2040	537	0.
1	0715	88	4.	*	1	1945	238	94.	*	2	0815	388	7.	*	2	2045	538	0.
1	0720	89	4.	*	1	1950	239	93.	*	2	0820	389	6.	*	2	2050	539	0.
1	0725	90	4.	*	1	1955	240	92.	*	2	0825	390	6.	*	2	2055	540	0.
1	0730	91	4.	*	1	2000	241	91.	*	2	0830	391	6.	*	2	2100	541	0.
1	0735	92	4.	*	1	2005	242	90.	*	2	0835	392	6.	*	2	2105	542	0.
1	0740	93	4.	*	1	2010	243	88.	*	2	0840	393	6.	*	2	2110	543	0.
1	0745	94	4.	*	1	2015	244	87.	*	2	0845	394	6.	*	2	2115	544	0.
1	0750	95	4.	*	1	2020	245	86.	*	2	0850	395	6.	*	2	2120	545	0.
1	0755	96	4.	*	1	2025	246	85.	*	2	0855	396	6.	*	2	2125	546	0.
1	0800	97	4.	*	1	2030	247	84.	*	2	0900	397	5.	*	2	2130	547	0.
1	0805	98	4.	*	1	2035	248	83.	*	2	0905	398	5.	*	2	2135	548	0.
1	0810	99	4.	*	1	2040	249	82.	*	2	0910	399	5.	*	2	2140	549	0.
1	0815	100	4.	*	1	2045	250	81.	*	2	0915	400	5.	*	2	2145	550	0.
1	0820	101	4.	*	1	2050	251	80.	*	2	0920	401	5.	*	2	2150	551	0.
1	0825	102	4.	*	1	2055	252	80.	*	2	0925	402	5.	*	2	2155	552	0.
1	0830	103	4.	*	1	2100	253	79.	*	2	0930	403	5.	*	2	2200	553	0.
1	0835	104	4.	*	1	2105	254	78.	*	2	0935	404	5.	*	2	2205	554	0.
1	0840	105	4.	*	1	2110	255	77.	*	2	0940	405	5.	*	2	2210	555	0.
1	0845	106	4.	*	1	2115	256	76.	*	2	0945	406	4.	*	2	2215	556	0.
1	0850	107	5.	*	1	2120	257	76.	*	2	0950	407	4.	*	2	2220	557	0.
1	0855	108	5.	*	1	2125	258	75.	*	2	0955	408	4.	*	2	2225	558	0.
1	0900	109	5.	*	1	2130	259	74.	*	2	1000	409	4.	*	2	2230	559	0.
1	0905	110	5.	*	1	2135	260	74.	*	2	1005	410	4.	*	2	2235	560	0.
1	0910	111	5.	*	1	2140	261	73.	*	2	1010	411	4.	*	2	2240	561	0.
1	0915	112	5.	*	1	2145	262	72.	*	2	1015	412	4.	*	2	2245	562	0.
1	0920	113	5.	*	1	2150	263	72.	*	2	1020	413	4.	*	2	2250	563	0.
1	0925	114	5.	*	1	2155	264	71.	*	2	1025	414	4.	*	2	2255	564	0.
1	0930	115	5.	*	1	2200	265	71.	*	2	1030	415	4.	*	2	2300	565	0.
1	0935	116	5.	*	1	2205	266	70.	*	2	1035	416	4.	*	2	2305	566	0.
1	0940	117	5.	*	1	2210	267	69.	*	2	1040	417	4.	*	2	2310	567	0.
1	0945	118	5.	*	1	2215	268	69.	*	2	1045	418	3.	*	2	2315	568	0.

1	0950	119	5.	*	1	2220	269	68.	*	2	1050	419	3.	*	2	2320	569	0.
1	0955	120	5.	*	1	2225	270	68.	*	2	1055	420	3.	*	2	2325	570	0.
1	1000	121	5.	*	1	2230	271	67.	*	2	1100	421	3.	*	2	2330	571	0.
1	1005	122	5.	*	1	2235	272	66.	*	2	1105	422	3.	*	2	2335	572	0.
1	1010	123	5.	*	1	2240	273	66.	*	2	1110	423	3.	*	2	2340	573	0.
1	1015	124	5.	*	1	2245	274	65.	*	2	1115	424	3.	*	2	2345	574	0.
1	1020	125	5.	*	1	2250	275	65.	*	2	1120	425	3.	*	2	2350	575	0.
1	1025	126	5.	*	1	2255	276	64.	*	2	1125	426	3.	*	2	2355	576	0.
1	1030	127	5.	*	1	2300	277	63.	*	2	1130	427	3.	*	3	0000	577	0.
1	1035	128	6.	*	1	2305	278	63.	*	2	1135	428	3.	*	3	0005	578	0.
1	1040	129	6.	*	1	2310	279	62.	*	2	1140	429	3.	*	3	0010	579	0.
1	1045	130	6.	*	1	2315	280	62.	*	2	1145	430	3.	*	3	0015	580	0.
1	1050	131	7.	*	1	2320	281	62.	*	2	1150	431	3.	*	3	0020	581	0.
1	1055	132	8.	*	1	2325	282	61.	*	2	1155	432	3.	*	3	0025	582	0.
1	1100	133	9.	*	1	2330	283	61.	*	2	1200	433	3.	*	3	0030	583	0.
1	1105	134	11.	*	1	2335	284	60.	*	2	1205	434	3.	*	3	0035	584	0.
1	1110	135	13.	*	1	2340	285	60.	*	2	1210	435	2.	*	3	0040	585	0.
1	1115	136	15.	*	1	2345	286	59.	*	2	1215	436	2.	*	3	0045	586	0.
1	1120	137	18.	*	1	2350	287	59.	*	2	1220	437	2.	*	3	0050	587	0.
1	1125	138	21.	*	1	2355	288	59.	*	2	1225	438	2.	*	3	0055	588	0.
1	1130	139	26.	*	2	0000	289	58.	*	2	1230	439	2.	*	3	0100	589	0.
1	1135	140	35.	*	2	0005	290	58.	*	2	1235	440	2.	*	3	0105	590	0.
1	1140	141	57.	*	2	0010	291	58.	*	2	1240	441	2.	*	3	0110	591	0.
1	1145	142	93.	*	2	0015	292	57.	*	2	1245	442	2.	*	3	0115	592	0.
1	1150	143	176.	*	2	0020	293	57.	*	2	1250	443	2.	*	3	0120	593	0.
1	1155	144	369.	*	2	0025	294	57.	*	2	1255	444	2.	*	3	0125	594	0.
1	1200	145	640.	*	2	0030	295	57.	*	2	1300	445	2.	*	3	0130	595	0.
1	1205	146	966.	*	2	0035	296	56.	*	2	1305	446	2.	*	3	0135	596	0.
1	1210	147	1338.	*	2	0040	297	56.	*	2	1310	447	2.	*	3	0140	597	0.
1	1215	148	1584.	*	2	0045	298	56.	*	2	1315	448	2.	*	3	0145	598	0.
1	1220	149	1768.	*	2	0050	299	55.	*	2	1320	449	2.	*	3	0150	599	0.
1	1225	150	1994.	*	2	0055	300	55.	*	2	1325	450	2.	*	3	0155	600	0.
				*					*					*				

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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	49.92-HR
5980.	12.92	(CFS)	1382.	378.	183.	183.
		(INCHES)	.692	.758	.761	.761
		(AC-FT)	685.	751.	754.	754.

CUMULATIVE AREA = 18.57 SQ MI

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	4	427.	12.25	46.	14.	7.	.30		
HYDROGRAPH AT	5	927.	12.25	86.	23.	11.	.72		
2 COMBINED AT	CP5	1346.	12.25	131.	37.	18.	1.02		
ROUTED TO	RCP5	1344.	12.25	131.	37.	18.	1.02		
HYDROGRAPH AT	6	746.	12.08	52.	14.	7.	.45		
2 COMBINED AT	CP6	1886.	12.17	182.	51.	25.	1.47		
ROUTED TO	RCP6	1818.	12.17	182.	51.	25.	1.47		
HYDROGRAPH AT	7	494.	12.08	36.	10.	5.	.31		
2 COMBINED AT	CP7	2279.	12.17	217.	61.	29.	1.78		
ROUTED TO	RCP7	1981.	12.33	217.	61.	29.	1.78		
HYDROGRAPH AT	9	1402.	12.33	161.	44.	21.	1.40		
2 COMBINED AT	I1CP9	3358.	12.33	375.	104.	50.	3.18		
HYDROGRAPH AT	14	1548.	12.33	173.	47.	23.	1.47		
ROUTED TO	RCP14	1392.	12.58	173.	47.	23.	1.47		

+	HYDROGRAPH AT	15	1272.	12.42	149.	40.	19.	1.26
+	2 COMBINED AT	I1CP15	2485.	12.50	319.	86.	42.	2.73
+	HYDROGRAPH AT	16	1252.	12.42	166.	48.	23.	1.13
+	ROUTED TO	SR16	0.	.00	0.	0.	0.	1.13
+	2 COMBINED AT	CP15	2485.	12.50	319.	86.	42.	3.90
+	ROUTED TO	RCP15	2108.	12.75	318.	86.	41.	3.90
+	HYDROGRAPH AT	18	1192.	12.17	99.	28.	13.	.81
+	ROUTED TO	R18	1010.	12.33	99.	28.	13.	.81
+	HYDROGRAPH AT	19	809.	12.33	96.	26.	13.	.77
+	2 COMBINED AT	CP19	1806.	12.33	194.	54.	26.	1.58
+	ROUTED TO	R19	1719.	12.42	194.	54.	26.	1.58
+	HYDROGRAPH AT	21	749.	12.42	93.	25.	12.	.64
+	2 COMBINED AT	I1CP21	2452.	12.42	285.	79.	38.	2.22
+	HYDROGRAPH AT	20	1220.	12.33	138.	37.	18.	1.07
+	ROUTED TO	SR20	0.	.00	0.	0.	0.	1.07
+	ROUTED TO	R20	0.	.00	0.	0.	0.	1.07
+	2 COMBINED AT	CP21	2452.	12.42	285.	79.	38.	3.29
+	ROUTED TO	SR21	844.	12.83	139.	40.	19.	3.29
+	ROUTED TO	R21	788.	12.92	139.	40.	19.	3.29
+	HYDROGRAPH AT	23	281.	12.08	24.	8.	4.	.14
+	2 COMBINED AT	CP23	797.	12.92	155.	47.	23.	3.43
+	ROUTED TO	SR23	0.	.00	0.	0.	0.	3.43
+	ROUTED TO	R23	0.	.00	0.	0.	0.	3.43
+	HYDROGRAPH AT	22	658.	12.25	66.	18.	9.	.51
+	ROUTED TO	R22	618.	12.42	66.	18.	9.	.51
+	HYDROGRAPH AT	22A	340.	12.25	40.	12.	6.	.22
+	2 COMBINED AT	I1C22A	903.	12.33	105.	30.	14.	.73
+	2 COMBINED AT	CP22A	887.	12.33	103.	29.	14.	4.16
+	DIVERSION TO	GOB2	681.	12.33	60.	15.	7.	4.16
+	HYDROGRAPH AT	DGOB2	206.	12.33	44.	14.	7.	4.16
+	ROUTED TO	R22A	186.	12.67	44.	14.	7.	4.16
	HYDROGRAPH AT							

+	25	484.	12.33	67.	20.	10.	.36
+ 2 COMBINED AT	I1CP25	597.	12.42	109.	34.	17.	4.52
+ HYDROGRAPH AT	24	154.	12.17	18.	6.	3.	.10
+ ROUTED TO	R24	149.	12.25	18.	6.	3.	.10
+ 2 COMBINED AT	CP25	726.	12.33	126.	40.	19.	4.62
+ HYDROGRAPH AT	26N	1003.	12.33	117.	31.	15.	.70
+ DIVERSION TO	GOB4	509.	12.33	40.	10.	5.	.70
+ HYDROGRAPH AT	DGOB4	494.	12.33	77.	21.	10.	.70
+ ROUTED TO	R26	469.	12.50	77.	21.	10.	.70
+ HYDROGRAPH AT	26S	418.	12.25	44.	12.	6.	.29
+ ROUTED TO	R26S	367.	12.42	44.	12.	6.	.29
+ HYDROGRAPH AT	27	616.	12.42	91.	28.	13.	.47
+ 3 COMBINED AT	I1CP27	1418.	12.42	210.	60.	29.	1.46
+ DIVERSION TO	SPOB1	691.	12.42	62.	16.	7.	1.46
+ HYDROGRAPH AT	DSPOB1	727.	12.42	148.	44.	21.	1.46
+ 2 COMBINED AT	CP27	1425.	12.42	272.	84.	40.	6.08
+ ROUTED TO	R27	1350.	12.58	272.	84.	40.	6.08
+ HYDROGRAPH AT	34	457.	12.25	42.	11.	6.	.36
+ HYDROGRAPH AT	33	811.	12.25	75.	21.	10.	.65
+ 2 COMBINED AT	CP33	1259.	12.25	116.	32.	15.	1.01
+ ROUTED TO	R33	1203.	12.33	116.	32.	15.	1.01
+ HYDROGRAPH AT	35	512.	12.17	46.	13.	6.	.39
+ 2 COMBINED AT	I1CP35	1656.	12.25	160.	44.	21.	1.40
+ HYDROGRAPH AT	32	1291.	12.33	206.	63.	30.	1.29
+ 2 COMBINED AT	CP35	2856.	12.25	363.	107.	51.	2.69
+ ROUTED TO	R35	2794.	12.33	363.	107.	51.	2.69
+ HYDROGRAPH AT	36	247.	12.25	24.	7.	3.	.19
+ 2 COMBINED AT	I1CP36	3014.	12.33	387.	113.	54.	2.88
+ HYDROGRAPH AT	37	917.	12.42	118.	33.	16.	.95
+ 2 COMBINED AT	CP36	3836.	12.33	502.	145.	70.	3.83
+ ROUTED TO	R36	3774.	12.42	502.	145.	70.	3.83
+ HYDROGRAPH AT	38	523.	12.25	55.	15.	7.	.42

+	2 COMBINED AT	CP38	4154.	12.42	555.	160.	77.	4.25
+	DIVERSION TO	GOB3	1148.	12.42	84.	21.	10.	4.25
+	HYDROGRAPH AT	DGOB3	3006.	12.42	470.	138.	67.	4.25
+	ROUTED TO	R38	2886.	12.58	470.	138.	67.	4.25
+	HYDROGRAPH AT	39	585.	12.50	94.	28.	13.	.63
+	2 COMBINED AT	I1CP39	3448.	12.58	562.	166.	80.	4.88
+	2 COMBINED AT	CP39	4743.	12.58	824.	246.	119.	10.96
+	ROUTED TO	R39	4705.	12.58	824.	246.	119.	10.96
+	HYDROGRAPH AT	40	633.	12.25	64.	18.	9.	.51
+	DIVERSION TO	GOB5	470.	12.25	34.	9.	4.	.51
+	HYDROGRAPH AT	DGOB5	163.	12.25	30.	10.	5.	.51
+	ROUTED TO	R40	145.	12.58	30.	10.	5.	.51
+	HYDROGRAPH AT	42	844.	12.50	139.	42.	20.	.81
+	2 COMBINED AT	I1CP42	978.	12.50	168.	52.	25.	1.32
+	2 COMBINED AT	CP42	5599.	12.58	981.	295.	142.	12.28
+	ROUTED TO	SR42	5500.	12.67	981.	280.	135.	12.28
+	ROUTED TO	SR42-2	5458.	12.67	962.	270.	130.	12.28
+	ROUTED TO	R42	5429.	12.67	962.	270.	130.	12.28
+	HYDROGRAPH AT	41A1	47.	12.00	3.	1.	0.	.02
+	ROUTED TO	SR41A1	23.	12.17	3.	1.	0.	.02
+	DIVERSION TO	1D303	23.	12.17	3.	1.	0.	.02
+	HYDROGRAPH AT	CP41A1	0.	.00	0.	0.	0.	.02
+	ROUTED TO	R41A1	0.	.00	0.	0.	0.	.02
+	HYDROGRAPH AT	41A2	64.	12.00	3.	1.	0.	.03
+	2 COMBINED AT	CP41A2	63.	12.00	3.	1.	0.	.05
+	ROUTED TO	SR41A2	74.	12.00	3.	1.	0.	.05
+	DIVERSION TO	2D303	24.	12.00	2.	1.	0.	.05
+	HYDROGRAPH AT	D41A2	49.	12.00	1.	0.	0.	.05
+	ROUTED TO	R41A2	30.	12.08	1.	0.	0.	.05
+	HYDROGRAPH AT	41A3	61.	12.00	3.	1.	0.	.03
+	2 COMBINED AT	CP41A3	83.	12.08	4.	1.	0.	.08
+	ROUTED TO	SR41A3	23.	12.25	4.	1.	0.	.08

+	DIVERSION TO	3D303	23.	12.25	4.	1.	0.	.08
+	HYDROGRAPH AT	D41A3	0.	.00	0.	0.	0.	.08
+	ROUTED TO	R41A3	0.	.00	0.	0.	0.	.08
+	HYDROGRAPH AT	41A	92.	12.00	5.	1.	1.	.05
+	2 COMBINED AT	CP41A	91.	12.00	5.	1.	1.	.13
+	ROUTED TO	SR41A	24.	12.25	5.	1.	1.	.13
+	DIVERSION TO	4D303	24.	12.25	5.	1.	1.	.13
+	HYDROGRAPH AT	D41A	0.	.00	0.	0.	0.	.13
+	ROUTED TO	R41A	0.	.00	0.	0.	0.	.13
+	HYDROGRAPH AT	41-1	223.	12.17	15.	4.	2.	.15
+	2 COMBINED AT	CP41-1	222.	12.17	15.	4.	2.	.28
+	ROUTED TO	SR41-1	222.	12.25	15.	4.	2.	.28
+	DIVERSION TO	5D303	45.	12.25	12.	3.	1.	.28
+	HYDROGRAPH AT	D41-1	177.	12.25	4.	1.	0.	.28
+	ROUTED TO	R41-1	64.	12.33	4.	1.	0.	.28
+	HYDROGRAPH AT	41-2	150.	12.17	10.	3.	1.	.10
+	2 COMBINED AT	CP41-2	149.	12.17	14.	3.	2.	.38
+	ROUTED TO	SR41-2	38.	12.50	14.	3.	2.	.38
+	DIVERSION TO	6D303	38.	12.50	14.	3.	2.	.38
+	HYDROGRAPH AT	D41-2	0.	.00	0.	0.	0.	.38
+	ROUTED TO	R41-2	0.	.00	0.	0.	0.	.38
+	HYDROGRAPH AT	41	536.	12.42	60.	15.	7.	.58
+	2 COMBINED AT	CP41	535.	12.42	60.	15.	7.	.68
+	ROUTED TO	SR41	477.	12.50	60.	15.	7.	.68
+	DIVERSION TO	7D303	46.	12.50	26.	7.	3.	.68
+	HYDROGRAPH AT	D41	431.	12.50	34.	8.	4.	.68
+	ROUTED TO	R41	423.	12.58	34.	8.	4.	.68
+	HYDROGRAPH AT	43-1	73.	12.08	4.	1.	1.	.04
+	2 COMBINED AT	CP43-1	423.	12.58	38.	10.	5.	1.00
+	ROUTED TO	SR43-1	262.	12.83	38.	9.	5.	1.00
+	DIVERSION TO	1D303A	262.	12.83	38.	9.	5.	1.00
	HYDROGRAPH AT							

+		D43-1	0.	.00	0.	0.	0.	1.00
	ROUTED TO							
+		R43-1	0.	.00	0.	0.	0.	1.00
	HYDROGRAPH AT							
+		43-2	19.	12.00	1.	0.	0.	.01
	2 COMBINED AT							
+		CP43-2	18.	12.00	1.	0.	0.	1.01
	ROUTED TO							
+		SR43-2	10.	12.17	1.	0.	0.	1.01
	DIVERSION TO							
+		2D303A	10.	12.17	1.	0.	0.	1.01
	HYDROGRAPH AT							
+		D43-2	0.	.00	0.	0.	0.	1.01
	ROUTED TO							
+		R43-2	0.	.00	0.	0.	0.	1.01
	HYDROGRAPH AT							
+		43-3	106.	12.00	5.	1.	1.	.05
	2 COMBINED AT							
+		CP43-3	103.	12.00	5.	1.	1.	1.06
	ROUTED TO							
+		SR43-3	22.	12.17	5.	1.	1.	1.06
	DIVERSION TO							
+		3D303A	22.	12.17	5.	1.	1.	1.06
	HYDROGRAPH AT							
+		D43-3	0.	.00	0.	0.	0.	1.06
	ROUTED TO							
+		R43-3	0.	.00	0.	0.	0.	1.06
	HYDROGRAPH AT							
+		43-4	64.	12.00	3.	1.	0.	.03
	2 COMBINED AT							
+		CP43-4	61.	12.00	3.	1.	0.	1.09
	ROUTED TO							
+		SR43-4	21.	12.17	3.	1.	0.	1.09
	DIVERSION TO							
+		1DWT#4	21.	12.17	3.	1.	0.	1.09
	HYDROGRAPH AT							
+		D43-4	0.	.00	0.	0.	0.	1.09
	ROUTED TO							
+		R43-4	0.	.00	0.	0.	0.	1.09
	HYDROGRAPH AT							
+		43-5	44.	12.00	2.	1.	0.	.02
	2 COMBINED AT							
+		CP43-5	42.	12.00	2.	1.	0.	1.11
	ROUTED TO							
+		SR43-5	19.	12.17	2.	1.	0.	1.11
	DIVERSION TO							
+		2DWT#4	19.	12.17	2.	1.	0.	1.11
	HYDROGRAPH AT							
+		D43-5	0.	.00	0.	0.	0.	1.11
	ROUTED TO							
+		R43-5	0.	.00	0.	0.	0.	1.11
	HYDROGRAPH AT							
+		43-6	44.	12.00	2.	1.	0.	.02
	2 COMBINED AT							
+		CP43-6	43.	12.00	2.	1.	0.	1.13
	ROUTED TO							
+		SR43-6	5.	12.25	2.	1.	0.	1.13
	DIVERSION TO							
+		3DWT#4	5.	12.25	2.	1.	0.	1.13
	HYDROGRAPH AT							
+		D43-6	0.	.00	0.	0.	0.	1.13
	ROUTED TO							
+		R43-6	0.	.00	0.	0.	0.	1.13

+	HYDROGRAPH AT	43-7	46.	12.00	2.	1.	0.	.02
+	2 COMBINED AT	CP43-7	44.	12.00	2.	1.	0.	1.15
+	ROUTED TO	SR43-7	20.	12.08	2.	1.	0.	1.15
+	DIVERSION TO	4DWT#4	20.	12.08	2.	1.	0.	1.15
+	HYDROGRAPH AT	D43-7	0.	.00	0.	0.	0.	1.15
+	ROUTED TO	R43-7	0.	.00	0.	0.	0.	1.15
+	HYDROGRAPH AT	43-8	23.	12.00	1.	0.	0.	.01
+	2 COMBINED AT	CP43-8	22.	12.00	1.	0.	0.	1.16
+	ROUTED TO	SR43-8	12.	12.08	1.	0.	0.	1.16
+	DIVERSION TO	5DWT#4	12.	12.08	1.	0.	0.	1.16
+	HYDROGRAPH AT	D43-8	0.	.00	0.	0.	0.	1.16
+	ROUTED TO	R43-8	0.	.00	0.	0.	0.	1.16
+	HYDROGRAPH AT	43	23.	12.00	1.	0.	0.	.01
+	2 COMBINED AT	I1CP43	22.	12.00	1.	0.	0.	1.17
+	2 COMBINED AT	CP43	5429.	12.67	963.	271.	130.	13.90
+	ROUTED TO	SR43	5073.	12.83	955.	269.	129.	13.90
+	DIVERSION TO	DI45-1	1146.	12.83	71.	18.	9.	13.90
+	HYDROGRAPH AT	D43	3927.	12.83	884.	251.	121.	13.90
+	ROUTED TO	RD43	3902.	12.92	883.	251.	121.	13.90
+	HYDROGRAPH AT	D43-4	21.	12.17	3.	1.	0.	1.09
+	ROUTED TO	RD43-4	13.	12.67	3.	1.	0.	1.09
+	HYDROGRAPH AT	D43-5	19.	12.17	2.	1.	0.	1.11
+	ROUTED TO	RD43-5	13.	12.58	2.	1.	0.	1.11
+	2 COMBINED AT	I1CWT4	27.	12.67	5.	1.	1.	.05
+	HYDROGRAPH AT	D43-6	5.	12.25	2.	1.	0.	1.13
+	ROUTED TO	RD43-6	4.	13.25	2.	1.	0.	1.13
+	2 COMBINED AT	I2CWT4	29.	12.67	7.	2.	1.	.07
+	HYDROGRAPH AT	D43-7	20.	12.08	2.	1.	0.	1.15
+	ROUTED TO	RD43-7	12.	12.58	2.	1.	0.	1.15
+	2 COMBINED AT	I3CWT4	41.	12.58	10.	2.	1.	.09
+	HYDROGRAPH AT	D43-8	12.	12.08	1.	0.	0.	1.16
+	ROUTED TO	RD43-8	5.	12.58	1.	0.	0.	1.16

	2 COMBINED AT							
+		I4CWT4	46.	12.58	11.	3.	1.	.10
	HYDROGRAPH AT							
+		44	287.	12.25	24.	6.	3.	.22
	2 COMBINED AT							
+		I5CWT4	308.	12.25	35.	9.	4.	.32
	2 COMBINED AT							
+		CP44	3940.	12.92	912.	259.	125.	14.12
	HYDROGRAPH AT							
+		45-1	137.	12.08	9.	2.	1.	.08
	HYDROGRAPH AT							
+		D43	1146.	12.83	71.	18.	9.	13.90
	2 COMBINED AT							
+		CP45-1	1144.	12.83	79.	20.	9.	13.98
	ROUTED TO							
+		SR45-1	1114.	12.83	79.	20.	9.	13.98
	DIVERSION TO							
+		7DWT#4	292.	12.83	33.	8.	4.	13.98
	HYDROGRAPH AT							
+		D45-1	821.	12.83	46.	12.	6.	13.98
	ROUTED TO							
+		R45-1	749.	12.92	46.	12.	6.	13.98
	HYDROGRAPH AT							
+		45	845.	12.00	44.	11.	5.	.38
	2 COMBINED AT							
+		CP45	803.	12.00	87.	22.	10.	14.36
	ROUTED TO							
+		SR45	401.	13.17	87.	22.	10.	14.36
	DIVERSION TO							
+		8DWT#4	297.	13.17	86.	21.	10.	14.36
	HYDROGRAPH AT							
+		D45	105.	13.17	1.	0.	0.	14.36
	ROUTED TO							
+		R45	25.	13.25	1.	0.	0.	14.36
	HYDROGRAPH AT							
+		46-1	151.	12.25	15.	4.	2.	.15
	2 COMBINED AT							
+		CP46-1	140.	12.25	16.	4.	2.	14.51
	ROUTED TO							
+		SR46-1	82.	12.50	16.	4.	2.	14.51
	DIVERSION TO							
+		9DWT#4	82.	12.50	16.	4.	2.	14.51
	HYDROGRAPH AT							
+		D46-1	0.	.00	0.	0.	0.	14.51
	ROUTED TO							
+		R46-1	0.	.00	0.	0.	0.	14.51
	HYDROGRAPH AT							
+		46	525.	12.58	88.	22.	11.	.85
	2 COMBINED AT							
+		I1CP46	493.	12.58	83.	21.	10.	15.36
	HYDROGRAPH AT							
+		28	734.	12.50	88.	22.	11.	.86
	ROUTED TO							
+		R28	727.	12.50	88.	22.	11.	.86
	HYDROGRAPH AT							
+		30	217.	12.25	27.	8.	4.	.17
	2 COMBINED AT							
+		I1CP30	857.	12.50	115.	30.	15.	1.03
	HYDROGRAPH AT							
+		29	272.	12.25	32.	10.	5.	.19
	ROUTED TO							
+		R29	257.	12.33	32.	10.	5.	.19
	2 COMBINED AT							

+		CP30	1047.	12.42	146.	40.	19.	1.22
	ROUTED TO							
+		R30	976.	12.67	146.	40.	19.	1.22
	HYDROGRAPH AT							
+		31	580.	12.50	72.	18.	9.	.71
	2 COMBINED AT							
+		CP31	1491.	12.58	216.	58.	28.	1.93
	ROUTED TO							
+		R31	1445.	12.75	216.	58.	28.	1.93
	2 COMBINED AT							
+		CP46	1781.	12.75	285.	75.	36.	17.43
	ROUTED TO							
+		SR46	1751.	12.75	285.	75.	36.	17.43
	ROUTED TO							
+		R46	1657.	12.92	284.	74.	36.	17.43
	HYDROGRAPH AT							
+		D45-1	292.	12.83	33.	8.	4.	13.98
	ROUTED TO							
+		RD45-1	247.	13.08	33.	8.	4.	13.98
	HYDROGRAPH AT							
+		D45	297.	13.17	86.	21.	10.	14.36
	ROUTED TO							
+		RD45	277.	13.33	86.	21.	10.	14.36
	2 COMBINED AT							
+		I7CWT4	475.	13.17	118.	30.	14.	14.36
	HYDROGRAPH AT							
+		D46-1	82.	12.50	16.	4.	2.	14.51
	ROUTED TO							
+		RD46-1	72.	12.83	16.	4.	2.	14.51
	2 COMBINED AT							
+		I8CWT4	535.	13.17	134.	33.	16.	14.51
	HYDROGRAPH AT							
+		WT4	919.	12.25	80.	20.	10.	.77
	2 COMBINED AT							
+		I9CWT4	1090.	12.33	207.	52.	25.	15.28
	2 COMBINED AT							
+		I10WT4	2103.	13.00	485.	125.	60.	18.20
	2 COMBINED AT							
+		CPWT4	5980.	12.92	1382.	378.	183.	18.57
	ROUTED TO							
+		RS47	0.	.00	0.	0.	0.	18.57
	HYDROGRAPH AT							
+		D43-1	262.	12.83	38.	9.	5.	1.00
	ROUTED TO							
+		R43-1	265.	13.42	38.	9.	5.	1.00
	HYDROGRAPH AT							
+		D43-2	10.	12.17	1.	0.	0.	1.01
	ROUTED TO							
+		R43-2	4.	13.92	1.	0.	0.	1.01
	HYDROGRAPH AT							
+		D43-3	22.	12.17	5.	1.	1.	1.06
	ROUTED TO							
+		R43-3	14.	13.75	5.	1.	1.	1.06
	HYDROGRAPH AT							
+		303A	486.	12.25	44.	11.	5.	.42
	4 COMBINED AT							
+		1C303A	481.	12.25	87.	22.	11.	1.06
	2 COMBINED AT							
+		CP303A	479.	12.25	87.	22.	10.	1.48
	HYDROGRAPH AT							
+		D41A1	23.	12.17	3.	1.	0.	.02
	ROUTED TO							
+		R41A1	13.	13.58	3.	1.	0.	.02

+	HYDROGRAPH AT	D41A2	24.	12.00	2.	1.	0.	.05
+	ROUTED TO	R41A2	13.	13.50	2.	1.	0.	.05
+	2 COMBINED AT	1I303	26.	13.50	5.	1.	1.	.05
+	HYDROGRAPH AT	D41A3	23.	12.25	4.	1.	0.	.08
+	ROUTED TO	R41A3	13.	14.58	4.	1.	0.	.08
+	2 COMBINED AT	2I303	27.	13.58	9.	2.	1.	.08
+	HYDROGRAPH AT	D41A	24.	12.25	5.	1.	1.	.13
+	ROUTED TO	R41A	14.	14.67	5.	1.	1.	.13
+	2 COMBINED AT	3I303	31.	14.42	14.	4.	2.	.13
+	HYDROGRAPH AT	D41-1	45.	12.25	12.	3.	1.	.28
+	ROUTED TO	R41-1	34.	14.17	11.	3.	1.	.28
+	2 COMBINED AT	4I303	64.	14.17	25.	6.	3.	.28
+	HYDROGRAPH AT	D41-2	38.	12.50	14.	3.	2.	.38
+	ROUTED TO	R41-2	33.	14.58	13.	3.	2.	.38
+	2 COMBINED AT	5I303	93.	14.42	37.	10.	5.	.38
+	HYDROGRAPH AT	D41	46.	12.50	26.	7.	3.	.68
+	ROUTED TO	R41	44.	14.67	25.	7.	3.	.68
+	2 COMBINED AT	6I303	134.	14.50	61.	16.	8.	.96
+	HYDROGRAPH AT	303	626.	12.67	96.	24.	12.	.91
+	2 COMBINED AT	CP303	621.	12.67	150.	40.	19.	2.17

*** NORMAL END OF HEC-1 ***

APPENDIX C

Infiltration & Transmission Losses Calculations

UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
NATIONAL ENGINEERING HANDBOOK

SECTION 4 - HYDROLOGY
CHAPTER 19 - TRANSMISSION LOSSES

BASIN ID	K (in/hr)	VOLUME P (ac-ft)	DURATION D (hrs.)	CHANNEL BOTTOM WIDTH w (ft.)	WASH REACH LENGTH x (miles)	PEAK RATE OF INFLOW p (cfs)	a(D) (ac.-ft.)	k(D,P) (ft.-miles)^-1	b	b(x,w)	a(x,w) (ac.-ft)	Po(x,w)	OUTFLOW VOLUME Q(x,w) (ac.-ft.)	OUTFLOW PEAK RATE q(x,w) (cfs)
SR20	2	11.0	36	20	1.04	3.7	-0.335	0.0396	0.961	0.439	-4.839	11.03	0.000	0.0
SR21	2	9.0	36	20	0.85	3.0	-0.335	0.0486	0.953	0.438	-3.969	9.07	0.000	0.0
GOB2	2	13.2	36	25	1	4.4	-0.335	0.0329	0.968	0.439	-5.800	13.20	0.000	0.0
GOB4	2	8.0	36	15	1	2.7	-0.335	0.0548	0.947	0.439	-3.518	8.01	0.000	0.0
GOB3	2	40.7	36	30	2.6	13.7	-0.335	0.0106	0.989	0.439	-17.886	40.76	0.000	0.0
SPOB1	2	10.6	36	20	1	3.6	-0.335	0.0411	0.960	0.439	-4.659	10.60	0.000	0.0

SYMBOLS & NOTATIONS:
K = effective hydraulic conductivity (inches per hour)
P = inflow volume (acre-feet)
D = duration of streamflow (hours)
x = length of reach (miles)
w = average width of flow (feet)
p = peak rate of inflow (cubic feet per second)
a(D) = regression intercept for unit channel with a flow of duration D (acre-feet)
k(D,P) = decay factor for unit channel with a flow duration D and volume P (foot-miles)^-1
b = regression slope for unit channel
b(x,w) = regression slope for a channel reach of length x and width w
a(x,w) = regression intercept for a channel reach of length x and width w
Po(x,w) = threshold volume for a channel reach of length x and width w (acre-feet)
Q(x,w) = outflow volume (acre-feet)
q(x,w) = peak rate of outflow (cubic feet per second)

EQUATIONS:
a(D) = -0.00465KD
k(D,P) = -1.09ln(1-0.00545KD/P)
b = e^-k
b(x,w) = e^-kxw
a(x,w) = a/1-b(1-b(x,w))
Po(x,w) = -a(x,w)/b(x,w)
Q(x,w) = a(x,w) + b(x,w)P
q(x,w) = 12.1/D(a(x,w) - [1-b(x,w)P]) + b(x,w)p

October 2001
By:JKM/SHC
Job #: 001081

NOTE: The VOLUME (P) indicated is the maximum 100-year, 2-hour volume that can be drained through channel transmission losses.
The PEAK RATE OF INFLOW (p) is the maximum allowable outflow rate from the basin, or set of basins, into the downstream drainage corridor.
Any additional volume in the basin is to be drained through other means such as basin infiltration, dry wells, leach fields, rock filled trenches, etc.

APPENDIX D

Geomorphological Evaluation Of Landforms

RECEIVED
AUG 1 1 1999
WOOD / PATEL

JE Fuller/ Hydrology & Geomorphology, Inc.

Jonathan Fuller, P.E., P.H.
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August 10, 1999

Ashok Patel, P.E.
Wood, Patel, & Associates, Inc.
1550 East Missouri, Suite 203
Phoenix, AZ 85014
(602) 234-1344

Re: Evaluation of Landforms for White Tank Mountains East Area

Dear Mr. Patel:

JE Fuller/ Hydrology & Geomorphology, Inc. (JEF) has investigated the nature of the landforms for the following 5 sites per your request (see also Location Map):

1 - on the North Fork White Granite Wash where it enters Sec. 12 in T2N, R3W at the section line between Sec. 11 and 12
2 - on White Granite Wash where it enters Sec. 13 in T2N, R3W at the section line between Sec. 13 and 14
3 - at the unnamed wash (north tributary to Osborn Road Wash) near the center of Sec. 23 in T2N, R3W
4 - on Osborn Road Wash where it enters Sec. 25 in T2N, R3W at the section line between Sec. 25 and 26
5 - on Bulldozer Wash where it enters Sec. 31 in T2N, R2W near the ¼ corner on the section line between Sec. 31 and 36 of T2N, R3W.

Note that after closer examination of the maps at Wood/Patel (Wood/Patel, 1999), site 5 was moved from the location noted in our original proposal.

JEF investigated the washes at the 5 sites to determine whether they are or are not active alluvial fans at these locations. The NRCS Soil Surveys (Camp, 1986; Hartman, 1977), Arizona Geological Survey report (Field and Pearthree, 1992), and existing aerial photographs (Landiscor, 1999) and maps (Wood/Patel, 1999) were examined. Additionally, a site visit to each of the sites was conducted to verify information contained in the various published material.

The findings of our investigation for each site are summarized below.

Site 1

Site 1 is located along the wash which follows the steep test road leading to the communications towers on the White Tank East Peak. The wash is confined between a tall (approximately 20 feet) natural terrace on the channel right (south) bank and the road embankment on the channel left (north) bank. The channel itself is braided and active between the toe of these two banks. However, due to the height of these banks and the size of the drainage area, this channel is not expected to avulse or otherwise relocate itself. The channel remains confined to two high natural

terraces at its crossing of the road near the center of the north half of Sec. 13, T2N, R3W. The FEMA FIRM (Panel 04013C1570 E, September 30, 1995) also shows the floodplain confined to a single channel above and below this road crossing. Limited local exposures along the natural terraces along the south side of the wash show deep reddened soils. The reddish soils indicate a surface that is very old and one that has been stable for thousands of years. The natural channel banks are generally smooth and rounded in shape despite the height of the bank, giving further evidence of their locational stability. The SCS soil maps show map unit 48, Ebon-Pinamt complex 3-20% slopes for this area. The Ebon-Pinamt complex is described as being "on fan terraces". The AZGS OFR 91-10 report classifies the flood hazard in this reach as "L2", "Lowest; restricted to small channels and localized sheetflooding", with "dendritic tributary drainages".

The North Fork White Granite Wash at Site 1 is not considered to be an active alluvial fan.

Site 2

Site 2 is located at the section line between Sec. 13 and 14 in T2N, R3W. The active wash bottom is also confined between relatively high (about 10 feet) terrace surfaces where it crosses the road near the property boundary. As at Site 1, Site 2 is located in SCS soil map unit 48 and AZGS flood hazard unit L2.

The White Granite Wash at Site 2 is not considered to be an active alluvial fan.

Site 3

Site 3 is located downstream of the confluence of two highly entrenched washes near the center of Sec. 23, T2N, R3W. This wash is a tributary to Osborn Road Wash. The wash is braided and active across the bottom of this 20 foot deep arroyo. The tops of the adjacent surfaces are covered with heavily darkened varnished boulders indicating the long-term stability of this surface. As at Site 1 and 2, Site 3 is located in SCS soil map unit 48 and AZGS flood hazard unit L2.

The unnamed wash at Site 3 is not considered to be an active alluvial fan.

Site 4

Site 4 is located at the west boundary of the NW1/4 of Sec. 25, T2N, R3W. The AZGS report classifies an area about ¼ mile wide as zone "H1" crossing into the property at this site. "H1" is identified as "highest flood hazard" in "entrenched reaches of major drainages and distributary flow areas". Channel patterns are "braided (anastomosing) or distributary". The SCS soil map shows the area as starting in unit 48 (fan terraces) and entering into unit 3 – Antho-Carrizo-Maripo complex which are generally associated with floodplains and drainageways.

Field investigation revealed a significant amount of grading and berming in and immediately east of the most active portions of the wash. These activities obscure the natural channel pattern in a very critical area near the intersection of the Indian School Road alignment and the west section line of Sec. 25 (see Site 4 Map). Several berms composed of sand, gravel, and large rock presently prevent floodwaters from overflowing toward the southeast to an area which historically received floodwaters at higher discharges. The USGS quadrangle shows the wash stopping near the SE corner of Sec. 23. The FIRM appears to follow the continuous blue line shown on the

quadrangle into Sec. 26. However, the wash from the north in Sec. 23 has a larger drainage area and is, in my judgment, the more significant drainage to Site 4.

The existing channels to the SE of this critical area appear moderately entrenched with the degree of entrenchment increasing from 1-2 feet near the earthen berm to 5-6 feet where they rejoin the main channel near the center of the NW1/4 of Sec. 25. The surface is also inhabited by a fair number of large saguaro cactus, indicating the relatively stable nature of these distributary channels.

It is my judgment that this location is an actively entrenching alluvial fan. Without the earthen berms, infrequent large floods may be capable of delivering large amount of water and sediment into the distributary channels SE of the point where the wash crosses the Indian School Road alignment. Field evidence suggests that the existing distributary channels in the east portion of this distributary area have been relatively stable over the past few hundred years and that perhaps 20% of the 100-year discharge might overflow into these channels if the berms were not present.

These berms are simple unengineered piles of earth and should not be considered adequeate permanent protection from distributary flooding at this site. However, it is likely that feasible engineering solutions could be designed to prevent floodwaters from flowing into the cutoff distributary channels. Structural solutions could be constructed on the property to protect downstream areas from potential failure of the existing unengineered berms.

Finally, it is also my judgement that the existing floodplain delineation of Osborn Road Wash shown on FIRM Panel 04013C2035 F dated September 30, 1995 near the west edge of Sec. 25 probably does not adequately represent the location of all significant inflows to Sec. 25 in this area. Floodwaters pass through the existing line of large rocks (see Site 4 Map) north of the existing floodplain limit shown on the FIRM. Again, it is likely that onsite structural engineering solutions could be feasibly designed to pick up these floodwaters and control them in a reasonable manner.

Site 5

The original site 5 at the south edge of Sec. 25 is a small entrenched channel from a dendritic tributary basin with a relatively small drainage area (less than 0.5 square mile). The new site 5 is located where this same wash reenters the property about ½ mile north of McDowell Road along the section line between Sec. 36, T2N, R3W and Sec. 31, T2N, R2W. At this location the wash remains confined between relatively high local relief. The wash is entrenched into the surrounding alluvial surface about 7 feet. The FIRM panel (04013C2035 F, September 30, 1995) indicates that the 100-year floodplain is confined to this entrenched reach.

The AZGS flood hazard map classifies this area as "H2", moderately high flood hazard, but confines the moderately high hazard limit to the narrow width of the existing channel. Though the AZGS map stops at the section line, the H2 area matches up to the FEMA floodplain suggesting, the continuity of the channel in this location. The SCS soil maps show soil type 10 west of the road (Camp, 1986) matching up to soil type TB with soil AL to the S and SW (Hartman, 1977). Soil type 10 is Brios-Carrizo complex with 1-5 percent slopes and is generally associated with floodplains and drainageways. Soil type TB is Torriofluvents which generallyh associated with young alluvial fans. Soil AL is also characteristized in association with alluvial fans.

The topographic maps also show smooth contour lines in this area indicating lower local relief and a lack of entrenchment south and east of the channel. However, the FEMA FIRM Panel 04013C2035 F indicates that the 100-year flood discharge is topographically contained within the existing wash. It is likely that the transition from a confined corridor to a less confined area takes place not far east of the section line. Definitive evaluation of this area is hindered due to the extent of disturbance of the surface in this area. Nevertheless, it is my judgment that at the property boundary along the section line, Bulldozer Wash at Site 5 should not be considered an active alluvial fan.

Summary

Sites 1-3 are clearly not active alluvial fans. Site 5, while shown on the SCS soil maps as having soils generally associated with young alluvial fans, exhibits significant relief local to the channel and is therefore not considered an active alluvial fan at this location where it enters the Caterpillar property. Site 4 exhibits the most active characteristics of any of the sites. However, it is likely that feasible onsite structural engineering solutions could be designed to intercept flood flows at this site.

References

Camp, P.D., 1986, Soil Survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties, Arizona: U.S. Soil Conservation Service Report, 306 p.

FEMA, 1995, Flood Insurance Rate Maps, Panels, 04013C1570 E, 04013C1590 F, 04013C2035 F, and 04013C2055 E.

Field, John J. and Pearthree, Philip P., 1992, Geologic Mapping of Flood Hazards in Arizona: An Example from the White Tank Mountains Area, Maricopa County: Arizona Geological Survey OFR 91-10, 16 p.

Hartman, G. W., 1977, Soil Survey of Maricopa, Arizona, Central Part: U. S. Soil Conservation Service Report, 117 p.

Hjalmarson, H.W., 1998, Piedmont flood hazard assessment for flood plain management for Maricopa County, Arizona – DRAFT of August 1998: Flood Control District of Maricopa County, 158 p.

National Research Council, 1996, Alluvial Fan Flooding: Washington, D.C., National Academy Press, 172 p.

Wood/Patel, 1999, Exhibit Maps from the 404 Waters of the US Application to the US Army Corps of Engineers.

If you have any questions regarding our investigation, please do not hesitate to contact me. Thank you again for this opportunity to provide our services to Wood/Patel.

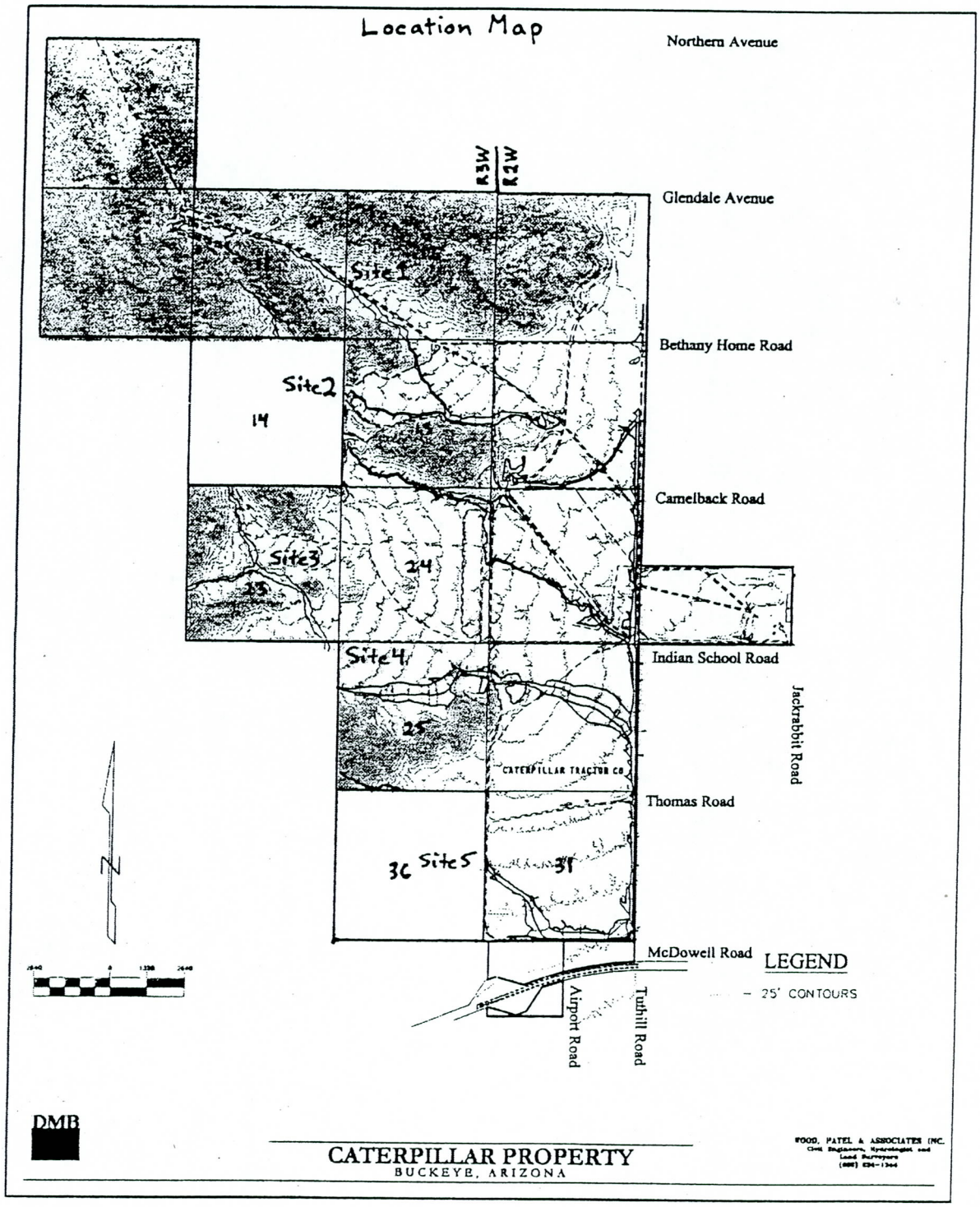
Sincerely,
JE Fuller / Hydrology & Geomorphology, Inc.

Brian R. Iserman

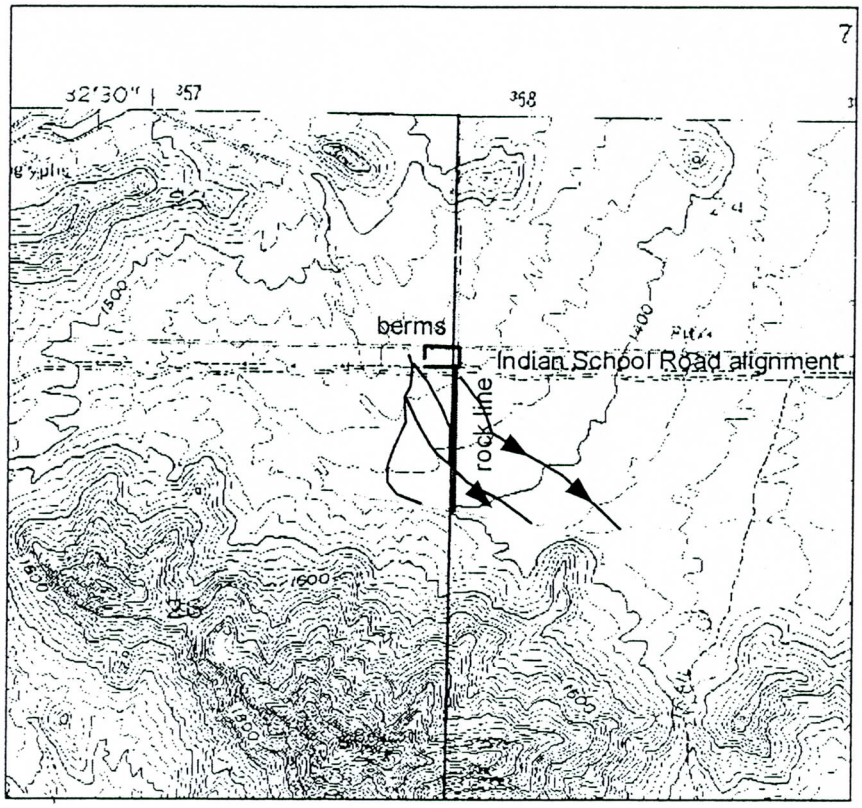
Brian Iserman, P. E.
Hydrologist

Registered Professional Engineer (Civil)
CERTIFICATE NO. 29325
BRIAN R. ISERMAN
Date Signed 8/10/99
ARIZONA U.S.A.

Brian R. Iserman


Location Map
Northern Avenue
R3W
R2W
Glendale Avenue
Site1
Bethany Home Road
Site2
14
Camelback Road
Site3
24
23
Indian School Road
Site4
25
Jackrabbit Road
CATERPILLAR TRACTOR CO.
Thomas Road
36
Site5
31
N
McDowell Road
LEGEND
25' CONTOURS
Airport Road
Tuthill Road
DMB
CATERPILLAR PROPERTY
BUCKEYE, ARIZONA
WOOD, PATEL & ASSOCIATES INC.

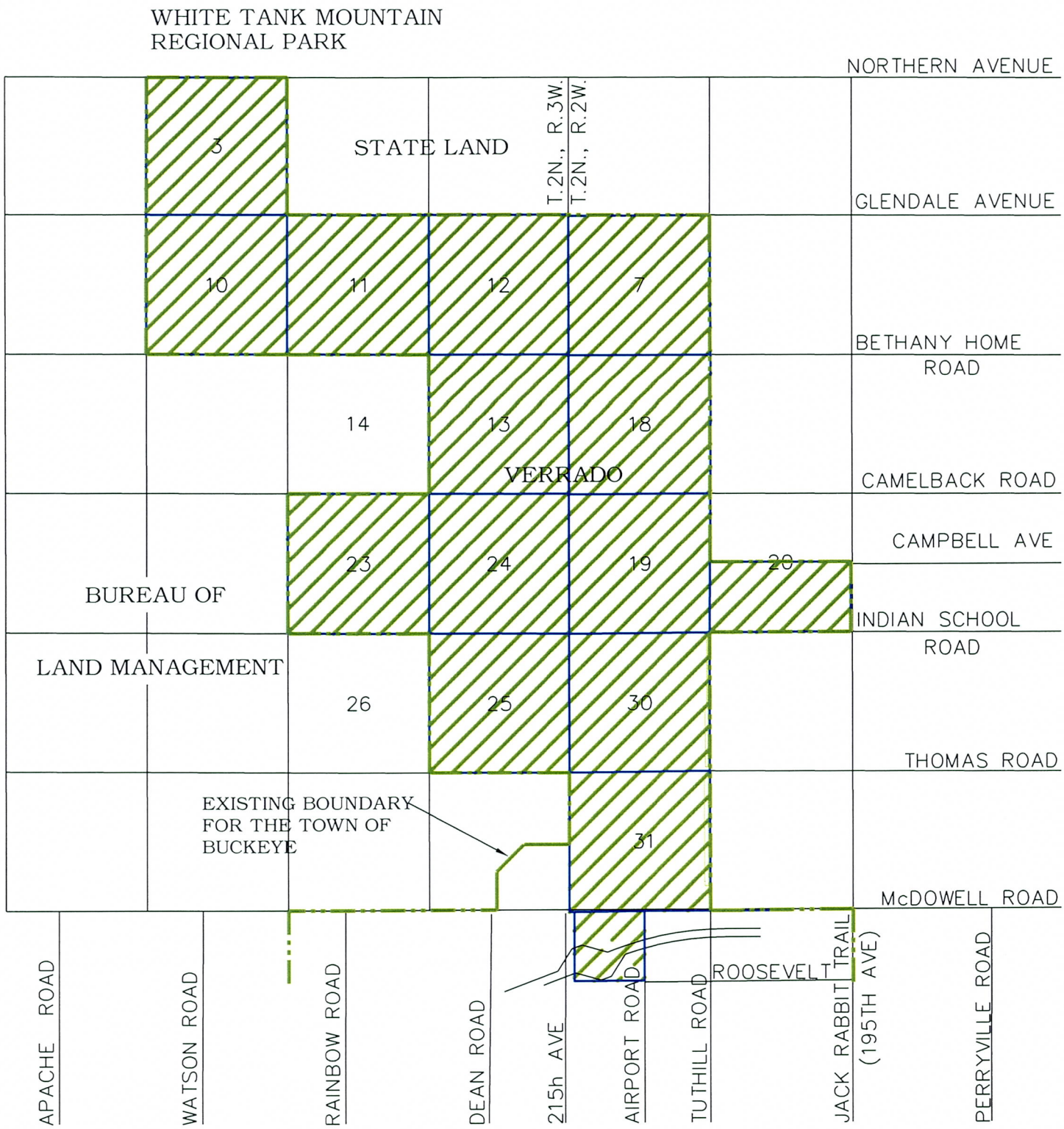
Site 4 Map



approximately 1 mile

PLATE 1

Vicinity Map



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DMB

PLATE 1
VICINITY MAP

VERRADO
BUCKEYE, ARIZONA

0 1/2 1
1 MILE

WOOD, PATEL & ASSOCIATES, INC.
Civil Engineers, HydrologistS and
Land Surveyors
(602) 335-8500

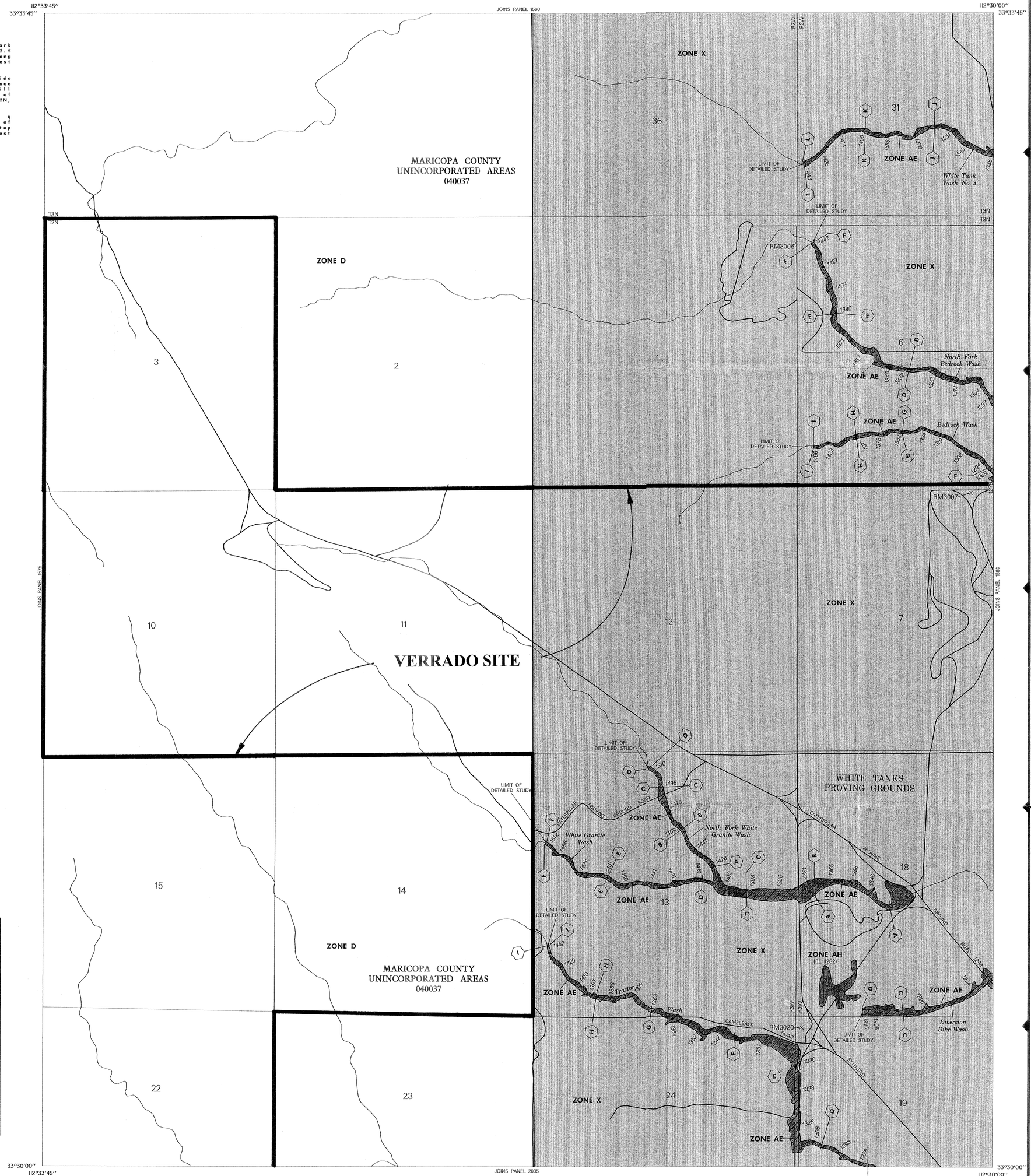
08/06/03

PLATE 2

FEMA Flood Insurance Rate Map

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM3006	1474.15	National Geodetic Survey benchmark in stone stamped N475 1981 2.5 miles west of Beardsley Canal along Northern Avenue near northwest corner, section 6, T2N, R2W.
RM3007	1304.52	3-inch aluminum cap at south side of dirt road [Glendale Avenue extended] 0.37 mile west of Tuthill Road extended, 0.37 mile west of southwest corner, section 5, T2N, R2W.
RM3020	1396.55	Chiseled X in highest boulder q 130 feet south and 30 feet east of southwest corner, section 18 in top of a small hill near southwest corner, section 18, T2N, R3W.



LEGEND

To obtain more detailed information in areas where Base Flood Elevations (BFEs)and /or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations and therefore may not exactly reflect the flood elevation data presented in the FIS. BFEs shown on the FIRM are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and /or floodplain management.

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Coastal BFE's shown on this map may apply only landward of 0.0' NGVD. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and /or floodplain management purposes when they are higher than the elevations shown on this FIRM.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

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

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

~~~~513~~~~ Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

(D)———(D) Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × Elevation Reference Mark

● M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at V20 inch.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 30, 1996

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

N

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

E94

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 1570 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	1570	F

MAP NUMBER 04013C1570 F

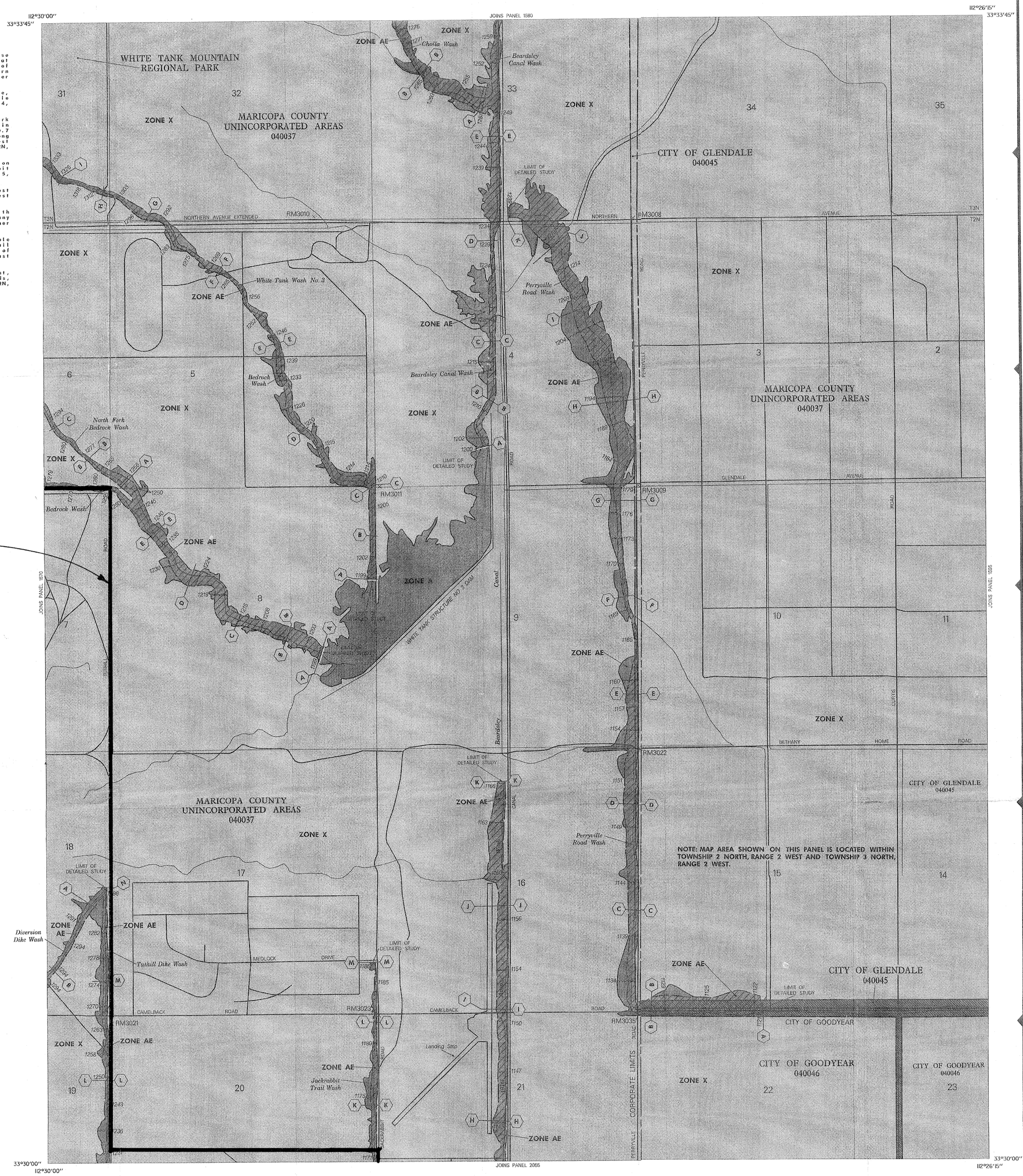
MAP REVISED: JULY 19, 2001

PLATE 2.1

Federal Emergency Management Agency
~~~~

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM3008	1218.83	Chiseled square in concrete base electrical transformer WSC 363 at southeast corner of intersection of Perryville Road and Northern Avenue, near southeast corner section 33, T3N, R2W.
RM3009	1182.66	1-+-inch iron pin in pothole, Perryville Road and Glendale Avenue, southeast corner section 4, T2N, R2W.
RM3010	1264.23	National Geodetic Survey benchmark - stainless-steel rod encased in pipe and stamped L475 1981 0.7 mile west of Beardsley Canal along Northern Avenue, q 1050 feet west of northeast corner section 5, T2N, R2W.
RM3011	1213.89	Iron pin at centerline intersection of Glendale Avenue and Jackrabbit Trail, southeast corner section 5, T2N, R2W.
RM3021	1262.08	Inverted aluminum cap at southwest corner of section 17, southwest corner section 17, T2N, R2W.
RM3022	1153.06	1-inch iron pipe flush with pavement, Perryville and Bethany Home Roads, southeast corner section 9, T2N, R2W.
RM3023	1185.68	40d nail in west face of power pole on east side of Jackrabbit Trail approximately 1000 feet south of Medlock Drive, near southeast corner section 17, T2N, R2W.
RM3035	1132.41	Iron rod flush with pavement, Perryville and Camelback Roads, southeast corner section 16, T2N, R2W.



LEGEND

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LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

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

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 — Identified 1990 — Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

~~~513~~~ Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

(D)———(D) Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × Elevation Reference Mark

● M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

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For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1986

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 4, 1991 SEPTEMBER 30, 1996

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 1590 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GLENDALE, CITY OF	040045	1590	G
GOODYEAR, CITY OF	040046	1590	G
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	1590	G

MAP NUMBER 04013C1590 G

MAP REVISED: JULY 19, 2001

PLATE 2.2

Federal Emergency Management Agency
~~~
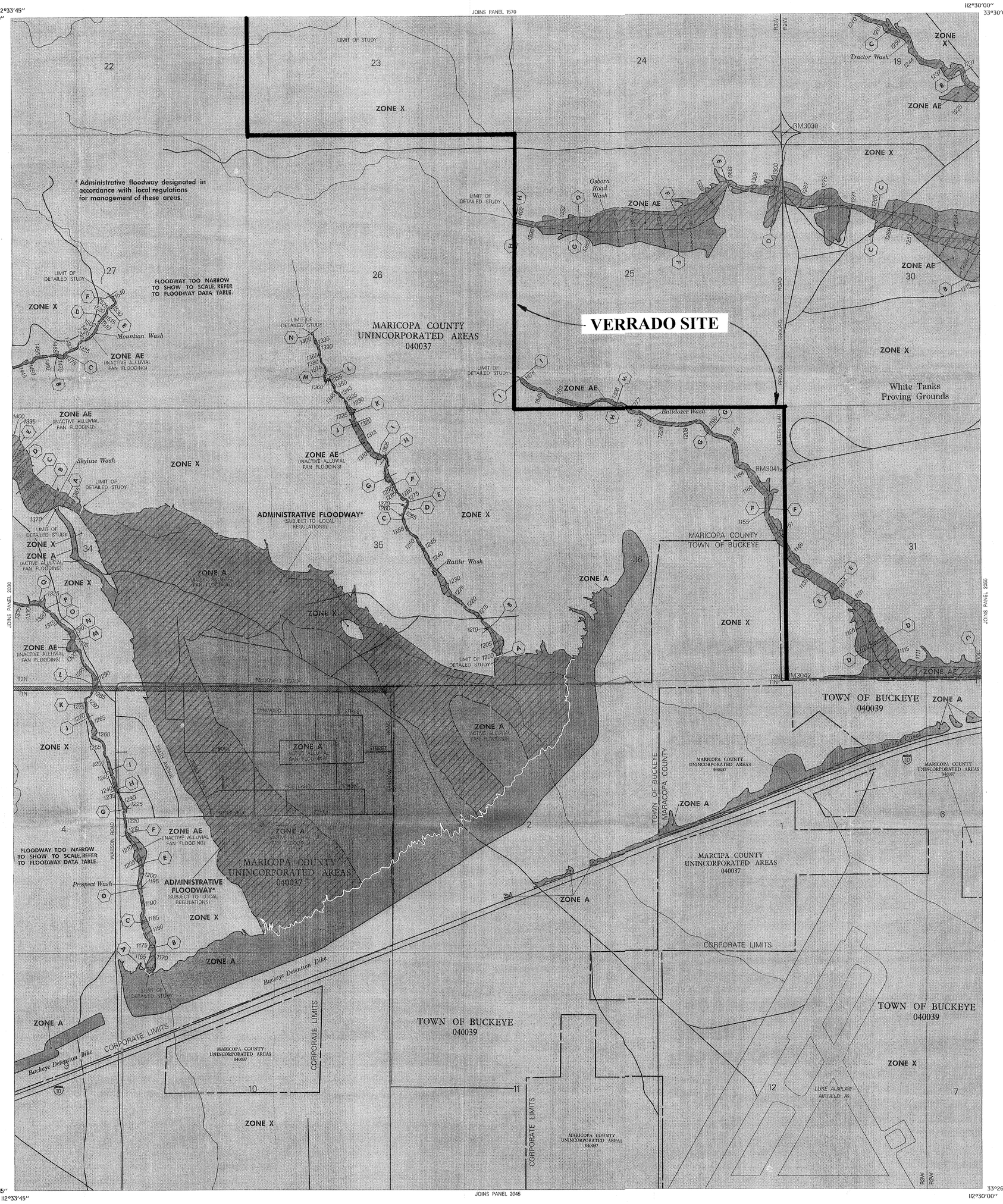

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM3030	1308.77	Brass cap at southwest corner of section 19, southwest corner section 17, T2N, R2W.
RM3041	1184.64	3-inch aluminum cap at west side of dirt road along west side of section 31, at intersection with dirt road to northeast q 1200 feet south of the northwest corner of section 31, T2N, R2W.
RM3042	1114.76	Steel pin 0.8 foot below surface at southwest corner of section 31, T2N, R2W.



LEGEND

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LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.
- **ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside 500-year floodplain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.
- RM7 — Elevation Reference Mark
- M2 — River Mile
- 97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 120 inch.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (Pl. 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 4, 1991, SEPTEMBER 30, 1995

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2035 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BUCKEYE, TOWN OF	040039	2035	G
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2035	G

MAP NUMBER
04013C2035 G

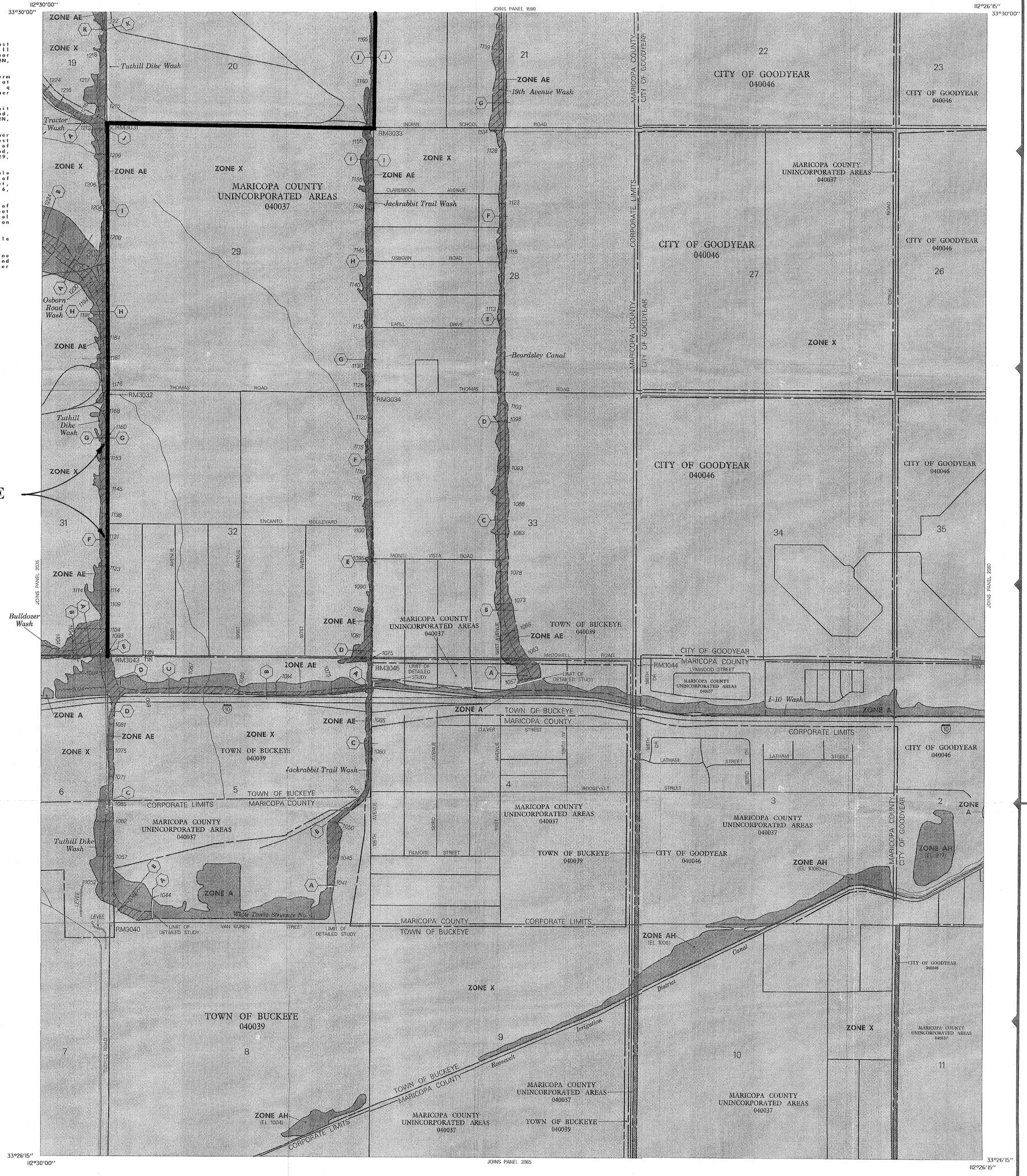
MAP REVISED:
JULY 19, 2001

PLATE 2.3

Federal Emergency Management Agency

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM3031	1218.28	3-inch aluminum cap at southeast corner of intersection of Tuthill and Indian School Roads, near southwest corner section 20, T2N, R2W.
RM3032	1176.94	3-inch aluminum cap in top of berm on west side of Tuthill Road at intersection of road to southwest q 200 feet south of northwest corner section 32, T2N, R2W.
RM3033	1160.26	Brass cap in handhole, Jackrabbit Trail and Indian School Road, southeast corner section 20, T2N, R2W.
RM3034	1125.07	40d nail in southwest face of power pole (PS 177171) at northeast corner of intersection of Jackrabbit Trail and Thomas Road, near southeast corner section 29, T2N, R2W.
RM3040	1044.61	Cotton picker spindle in power pole southeast corner of intersection of Tuthill Road and Van Buren Street, near southeast corner section 6, T1N, R2W.
RM3043	1100.43	3-inch iron pipe at center of pavement on McDowell Road q 25 feet east of barricade at flood control channel, southwest corner section 31, T2N, R2W.
RM3044	1051.34	Brass cap in handhole, Perryville and McDowell Roads.
RM3045	1079.43	Brass cap in handhole at centerline intersection of McDowell Road and Jackrabbit Trail, southwest corner section 33, T2N, R2W.



LEGEND

To obtain more detailed information in areas where Base Flood Elevations (BFEs)and /or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations and therefore may not exactly reflect the flood elevation data presented in the FIS. BFEs shown on the FIRM are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and /or floodplain management.

ERM elevations listed on this map were obtained and/or developed to establish vertical control for determination of flood elevations and floodplain boundaries portrayed on this map. Users should be aware that these ERM elevations may have changed since the publication of this map. To obtain up-to-date elevation information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

Coastal BFE's shown on this map may apply only landward of 0.0' NGVD. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and /or floodplain management purposes when they are higher than the elevations shown on this FIRM.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

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

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

~~~513~~~ Base Flood Elevation Line; Elevation in Feet; See Map Index for Elevation Datum.

(D)——(D) Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × Elevation Reference Mark

● M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (P.L. 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 30, 1995

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2055 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BUCKEYE, TOWN OF	040039	2055	F
GOODYEAR, CITY OF	040046	2055	F
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2055	F

MAP NUMBER 04013C2055 F

MAP REVISED: JULY 19, 2001

PLATE 2.4

Federal Emergency Management Agency
~~~

PERMIT ROUTING SLIP

Routed: 9/19/02

Project Name. Verrado Development

Location. McDowell & Tuthill

Permit No. N/A

(Please charge your review time to this PCN and Activity)
PCN No. 001.02.02 - Ingress/Egress Permits
Activity. Meetings

To: LMT, WFR, CFR, LLA, AMM, LKL, WVH

From: SJB

Please review and return comments and red-lined changes to my attention by:

Date. *

* This map has been supplied by the consultant for discussion at the meeting on 9/24/02 at 1:00 pm in the White Tanks Conf Rm.

WOOD/PATEL

LETTER OF TRANSMITTAL

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS • CONSTRUCTION MANAGERS

Date: September 18, 2002

To:	Shelby Brown	**Project:**	**Verrado**
	Flood Control District of Maricopa County	**Project No.:**	011479.Res26
	2801 W Durango Street	**Re:**	**Base Map**
	Phoenix, Arizona 85009		
Phone:	*(602) 506-5897*	**Sent Via:**	
Fax:	*(602) 506-2903*		

Copies	Date	Description
7	9/17/02	Verrado Base Map of Project Area – Full Size Xerox

FLOOD CONTROL DISTRICT
RECEIVED
SEP 18 '02
CO & GW | FIN. MGR.
PEC | LANDS
ADMIN. | CONST.
REG. | IP&RM
SYS. | FILE
COORD. PROJ. | SS
ROUTING
SJB

Remarks

The FCD parcel is highlighted. Call if you have any questions.

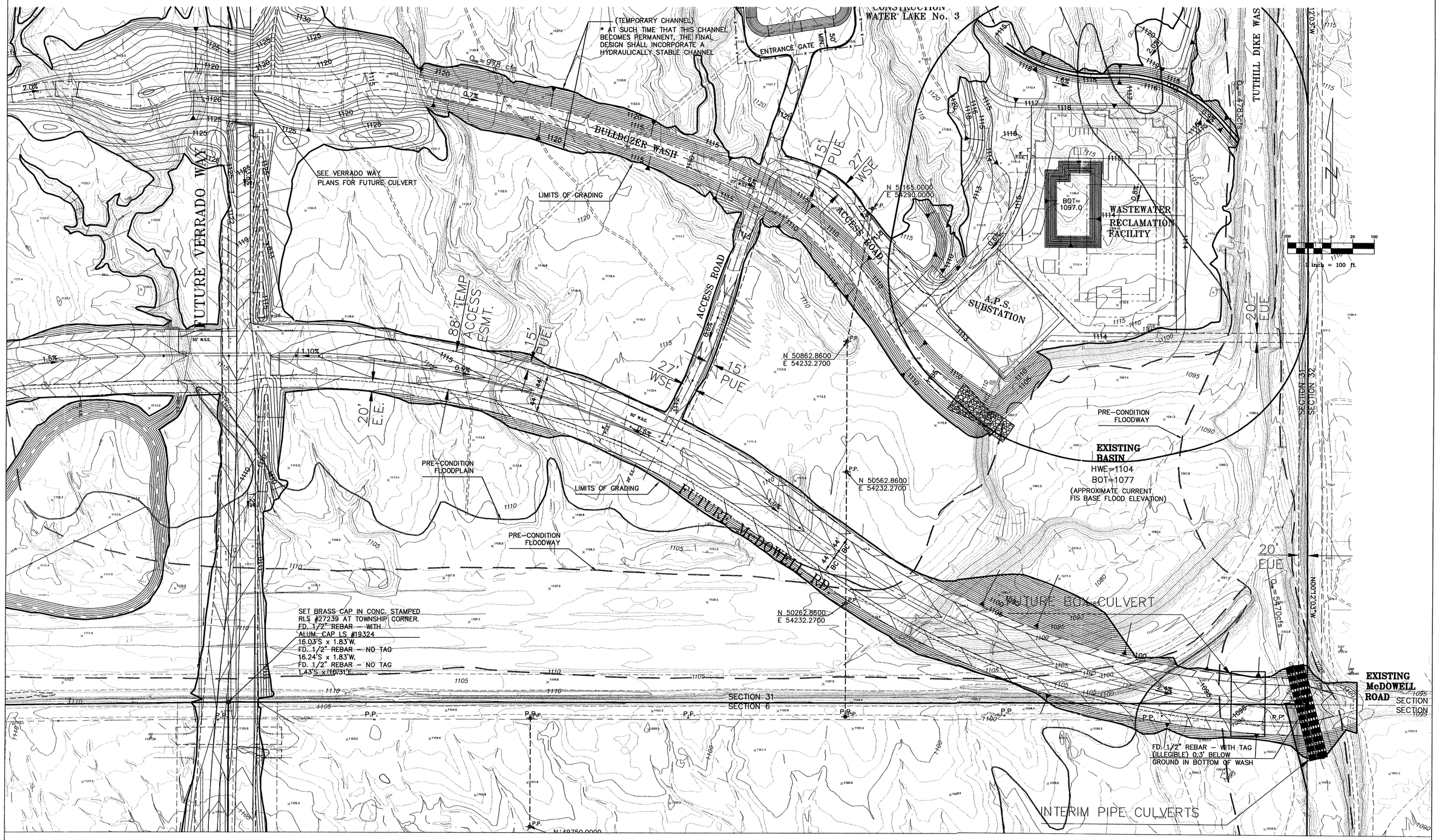
Thank you.

Copy To:

Signed: *Brad Gruver/km*

Y:\WP\FORMS\Blank forms\Letter of Transmittal - Macro.doc

Wood, Patel & Associates, Inc.
2051 West Northern Avenue, Suite 100 • Phoenix, AZ 85021 • (602) 335-8500 • Fax (602) 335-8580
www.woodpatel.com



DMB

A.P.S. EXHIBIT

VERRADO

BUCKEYE, ARIZONA

WOOD, PATEL & ASSOCIATES, INC.
Civil Engineers, Hydrologists and Land Surveyors
(602) 335-8500

9/17/02

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PLATE 3

HEC-1 Schematic Map

WHITE TANKS/AGUA FRIA AREA DRAINAGE MASTER STUDY

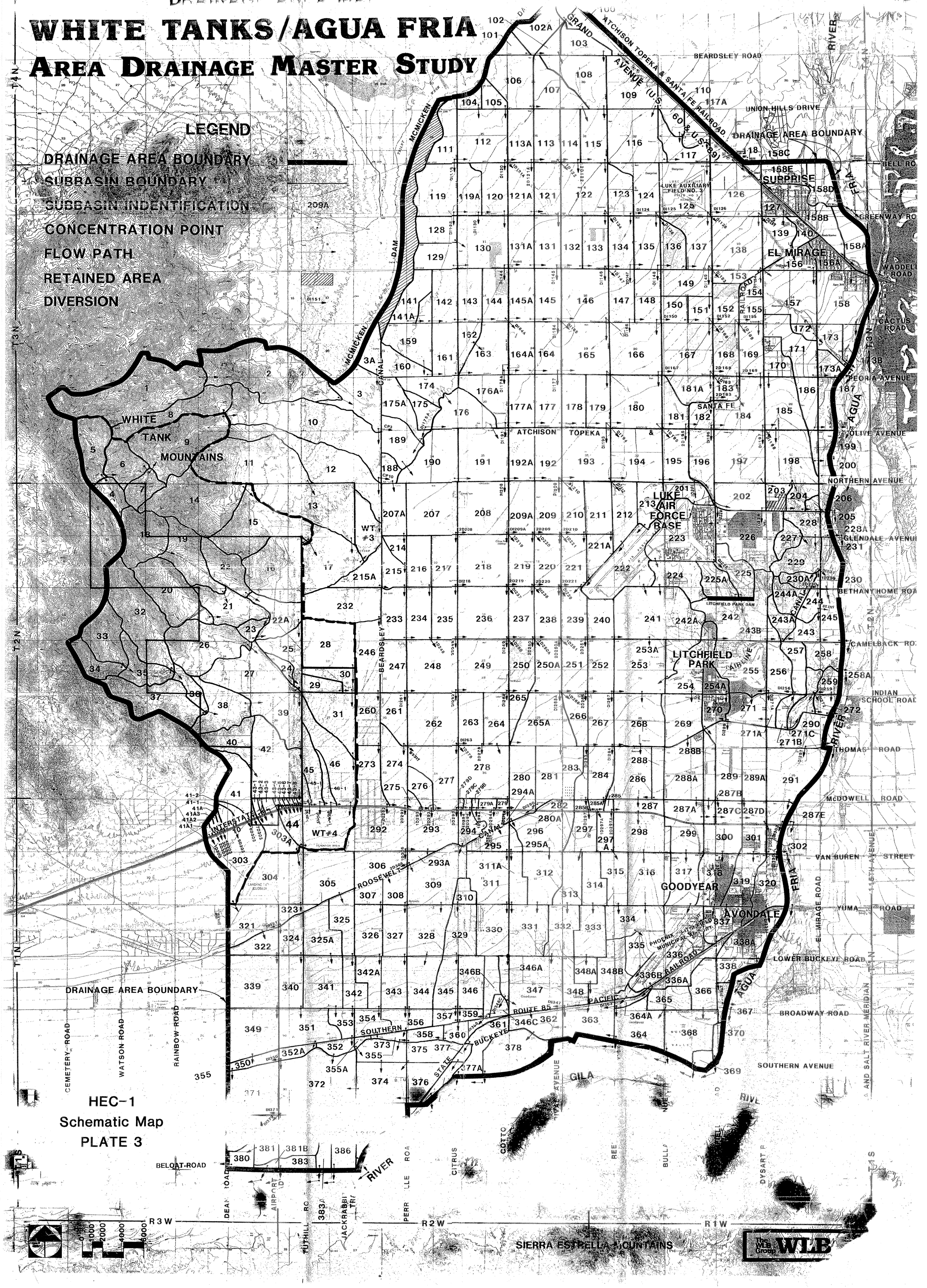
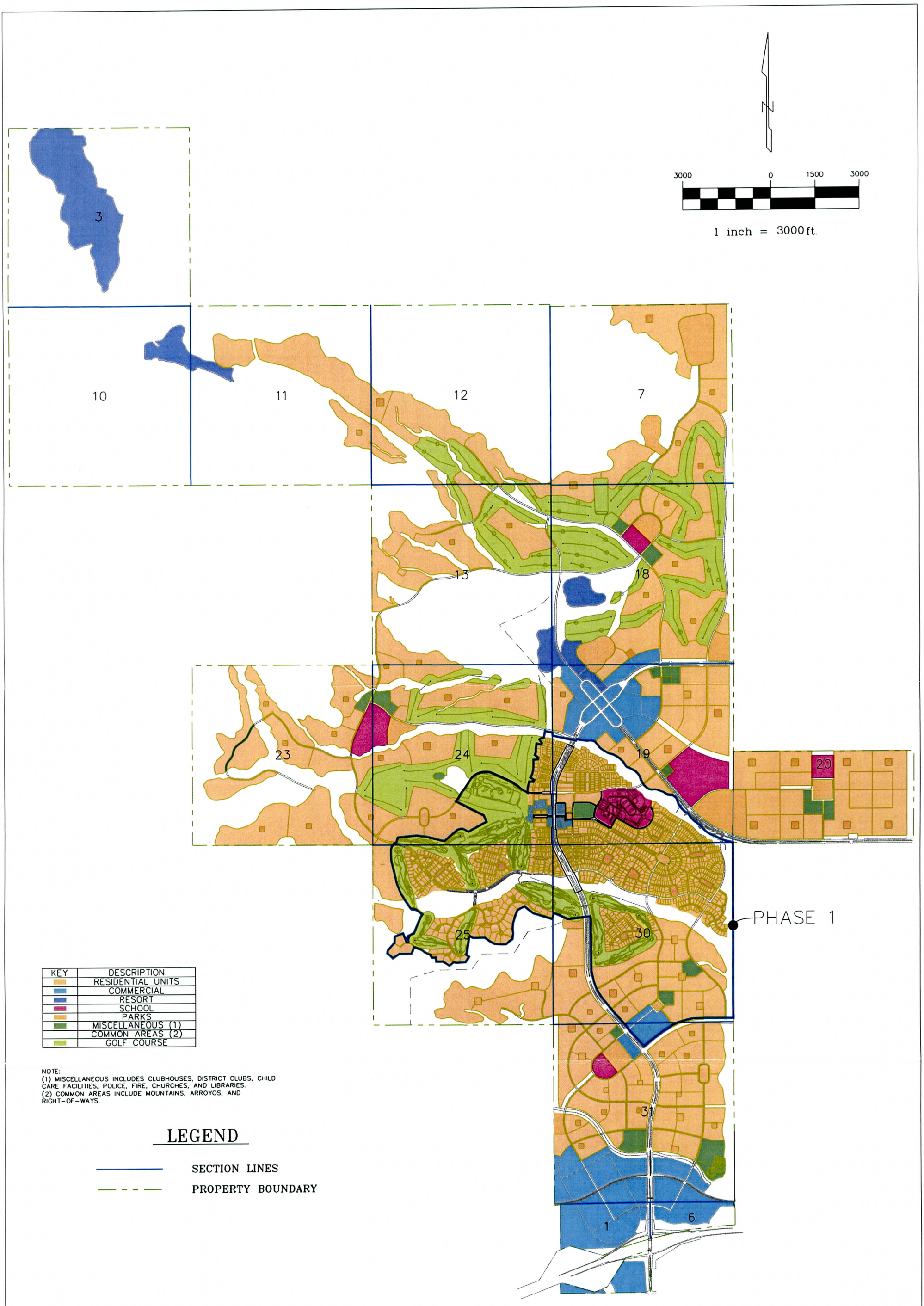


PLATE 4

Site Plan



KEY	DESCRIPTION
	RESIDENTIAL UNITS
	COMMERCIAL
	RESORT
	SCHOOL
	PARKS
	MISCELLANEOUS (1)
	COMMON AREAS (2)
	GOLF COURSE

NOTE:
(1) MISCELLANEOUS INCLUDES CLUBHOUSES, DISTRICT CLUBS, CHILD CARE FACILITIES, POLICE, FIRE, CHURCHES, AND LIBRARIES.
(2) COMMON AREAS INCLUDE MOUNTAINS, ARROYOS, AND RIGHT-OF-WAYS.

LEGEND

SECTION LINES

PROPERTY BOUNDARY

DMB

PLATE 4
SITE PLAN
VERRADO
BUCKEYE, ARIZONA

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Civil Engineers, Hydrologists and Land Surveyors
(602) 335-8500

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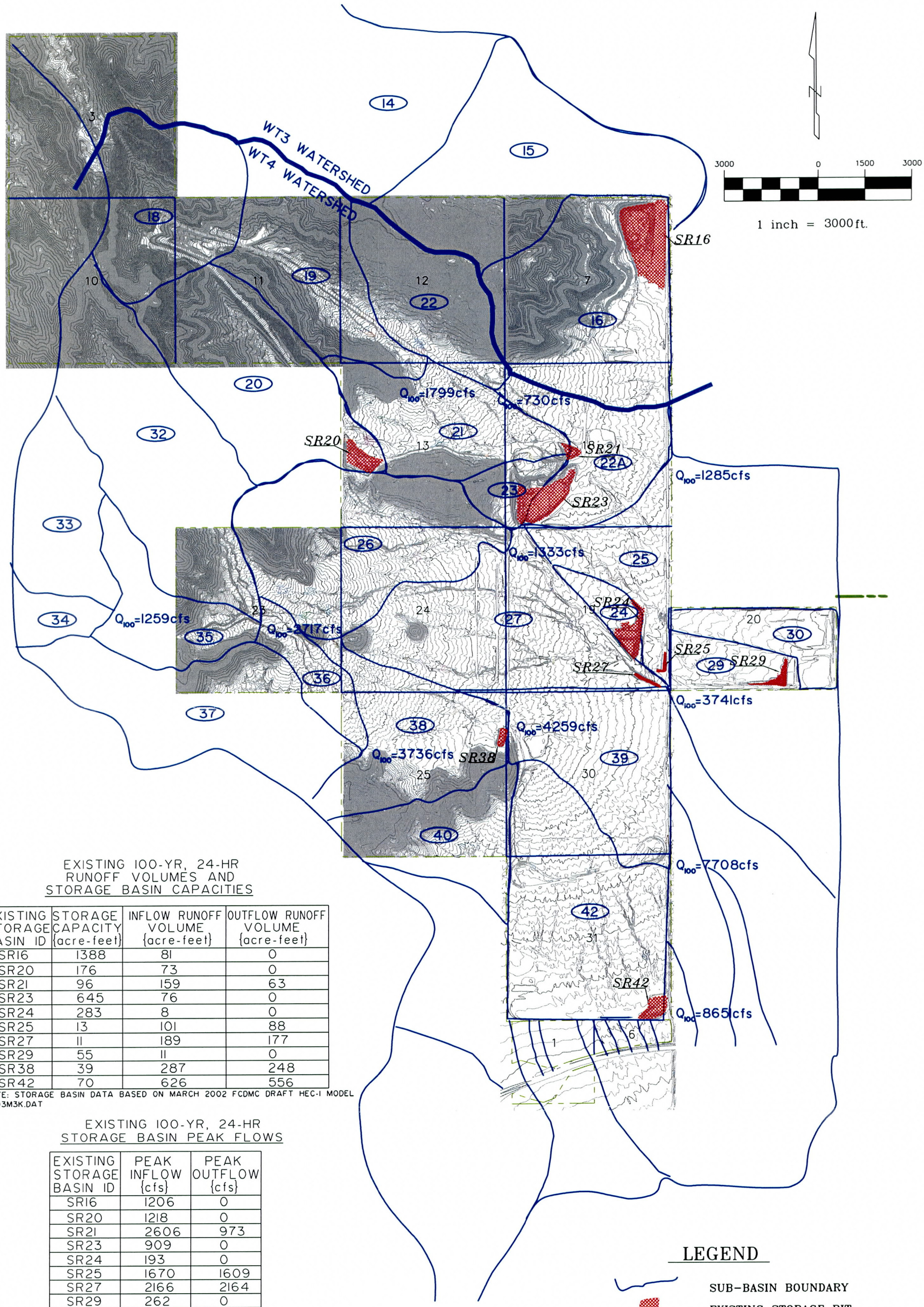
PLATE 5

Existing Conditions Drainage Map



EXISTING 100-YR, 24-HR
RUNOFF VOLUMES AND
STORAGE BASIN CAPACITIES

EXISTING STORAGE BASIN ID	STORAGE CAPACITY (acre-feet)	INFLOW RUNOFF VOLUME (acre-feet)	OUTFLOW RUNOFF VOLUME (acre-feet)
SR16	1388	81	0
SR20	176	73	0
SR21	96	159	63
SR23	645	76	0
SR24	283	8	0
SR25	13	101	88
SR27	11	189	177
SR29	55	11	0
SR38	39	287	248
SR42	70	626	556

NOTE: STORAGE BASIN DATA BASED ON MARCH 2002 FCDMC DRAFT HEC-I MODEL L303M3K.DAT

EXISTING 100-YR, 24-HR
STORAGE BASIN PEAK FLOWS

EXISTING STORAGE BASIN ID	PEAK INFLOW (cfs)	PEAK OUTFLOW (cfs)
SR16	1206	0
SR20	1218	0
SR21	2606	973
SR23	909	0
SR24	193	0
SR25	1670	1609
SR27	2166	2164
SR29	262	0
SR38	4305	4259
SR42	8776	8651

NOTE: PEAK FLOW DATA BASED ON MARCH 2002 FCDMC DRAFT HEC-I MODEL L303M3K.DAT

DMB

PLATE 5
EXISTING CONDITIONS DRAINAGE MAP
VERRADO
BUCKEYE, ARIZONA

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Civil Engineers, Hydrologists and Land Surveyors
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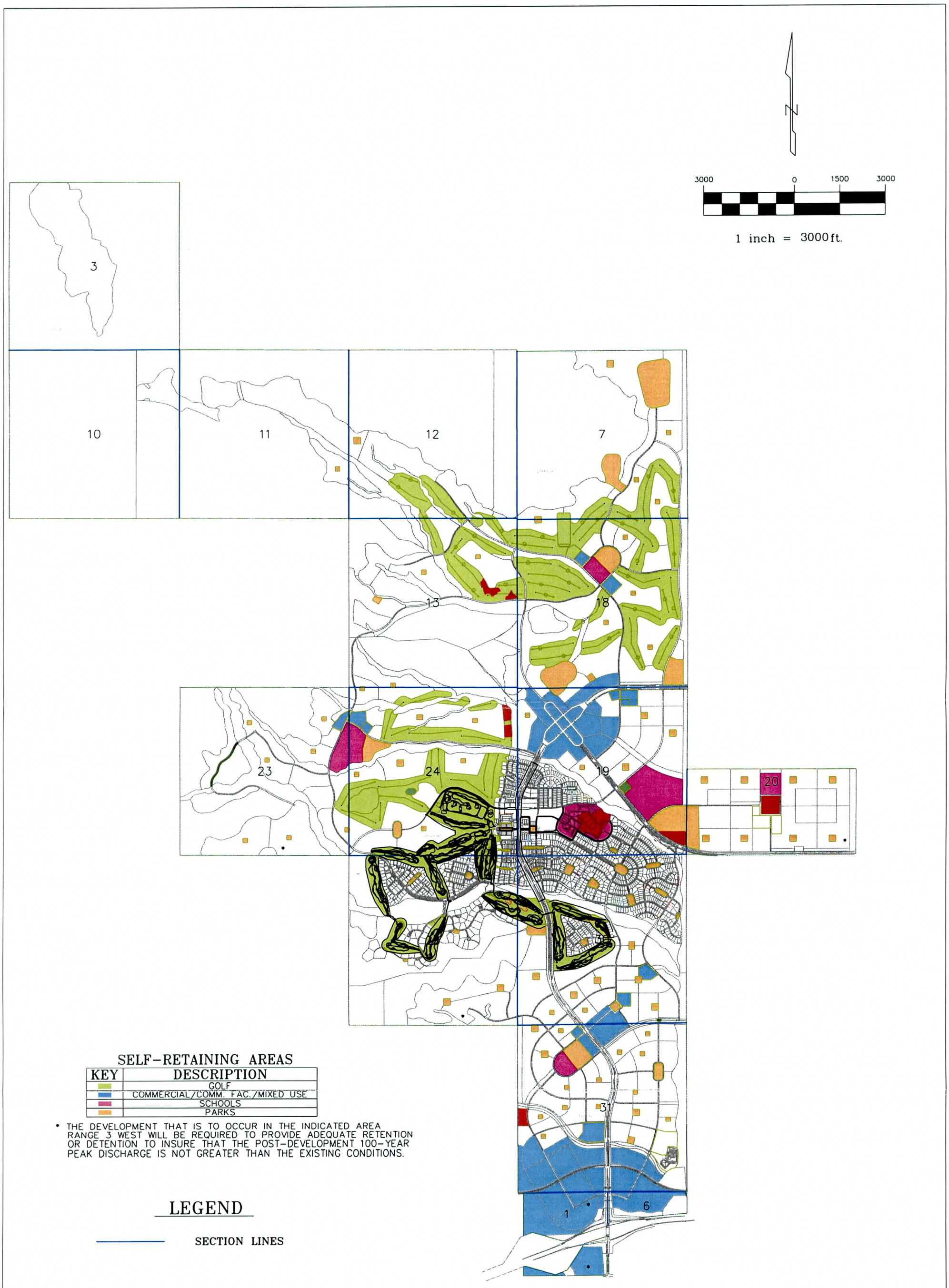
PLATE 6

Self Retaining Areas



SELF-RETAINING AREAS

KEY	DESCRIPTION
	GOLF
	COMMERCIAL/COMM. FAC./MIXED USE
	SCHOOLS
	PARKS

* THE DEVELOPMENT THAT IS TO OCCUR IN THE INDICATED AREA RANGE 3 WEST WILL BE REQUIRED TO PROVIDE ADEQUATE RETENTION OR DETENTION TO INSURE THAT THE POST-DEVELOPMENT 100-YEAR PEAK DISCHARGE IS NOT GREATER THAN THE EXISTING CONDITIONS.

LEGEND

SECTION LINES

DMB

PLATE 6
SELF-RETAINING AREAS
VERRADO
BUCKEYE, ARIZONA

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Civil Engineers, Hydrologists and Land Surveyors
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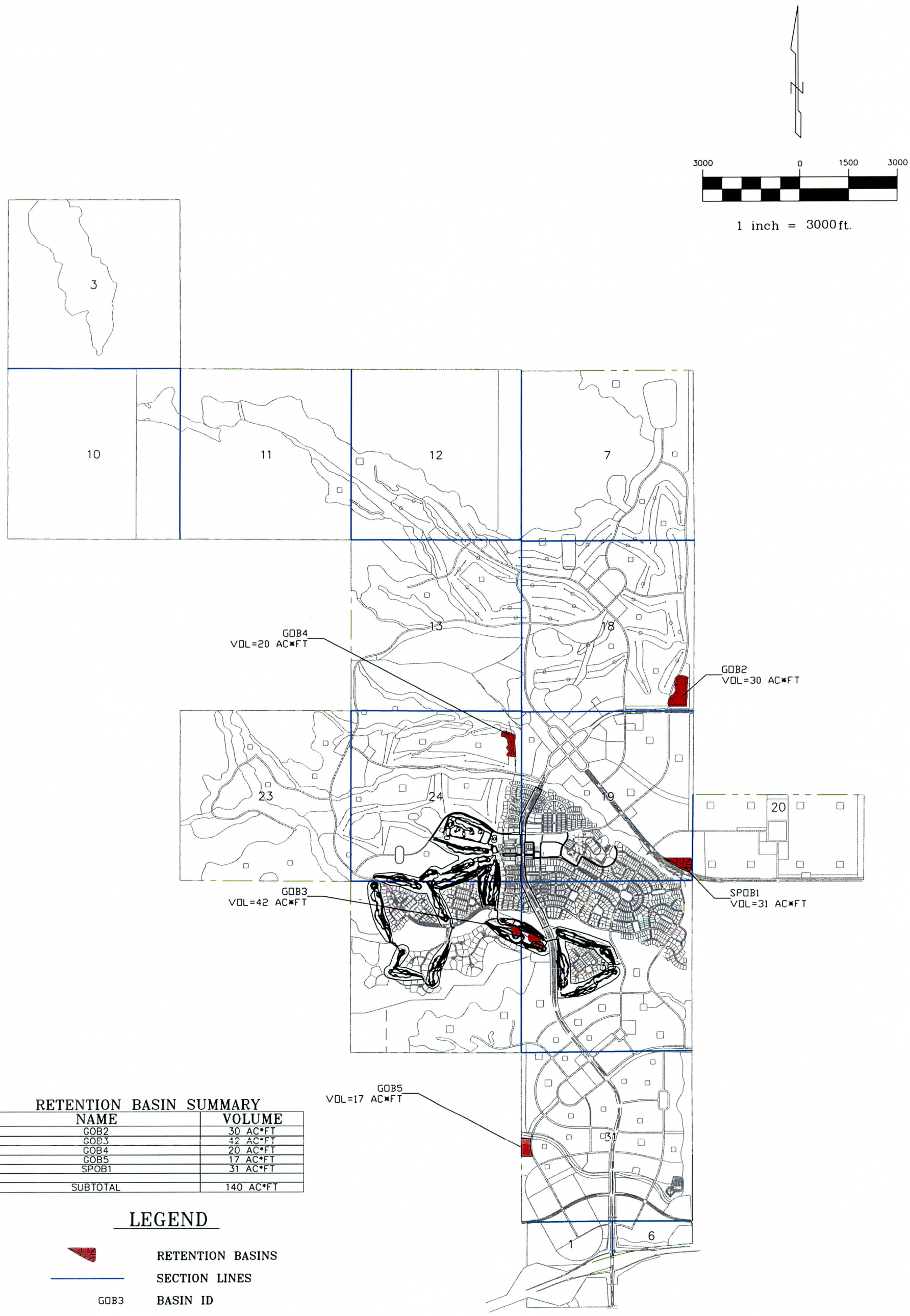
PLATE 7

Offline Storage Basins



RETENTION BASIN SUMMARY

NAME	VOLUME
GOB2	30 AC*FT
GOB3	42 AC*FT
GOB4	20 AC*FT
GOB5	17 AC*FT
SPOB1	31 AC*FT
SUBTOTAL	140 AC*FT

LEGEND

	RETENTION BASINS
	SECTION LINES
GOB3	BASIN ID
VOL=49 AC*FT	BASIN VOLUME

DMB

PLATE 7
OFFLINE STORAGE BASINS
VERRADO
BUCKEYE, ARIZONA

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(602) 335-8500

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PLATE 8

Online Retention Basins

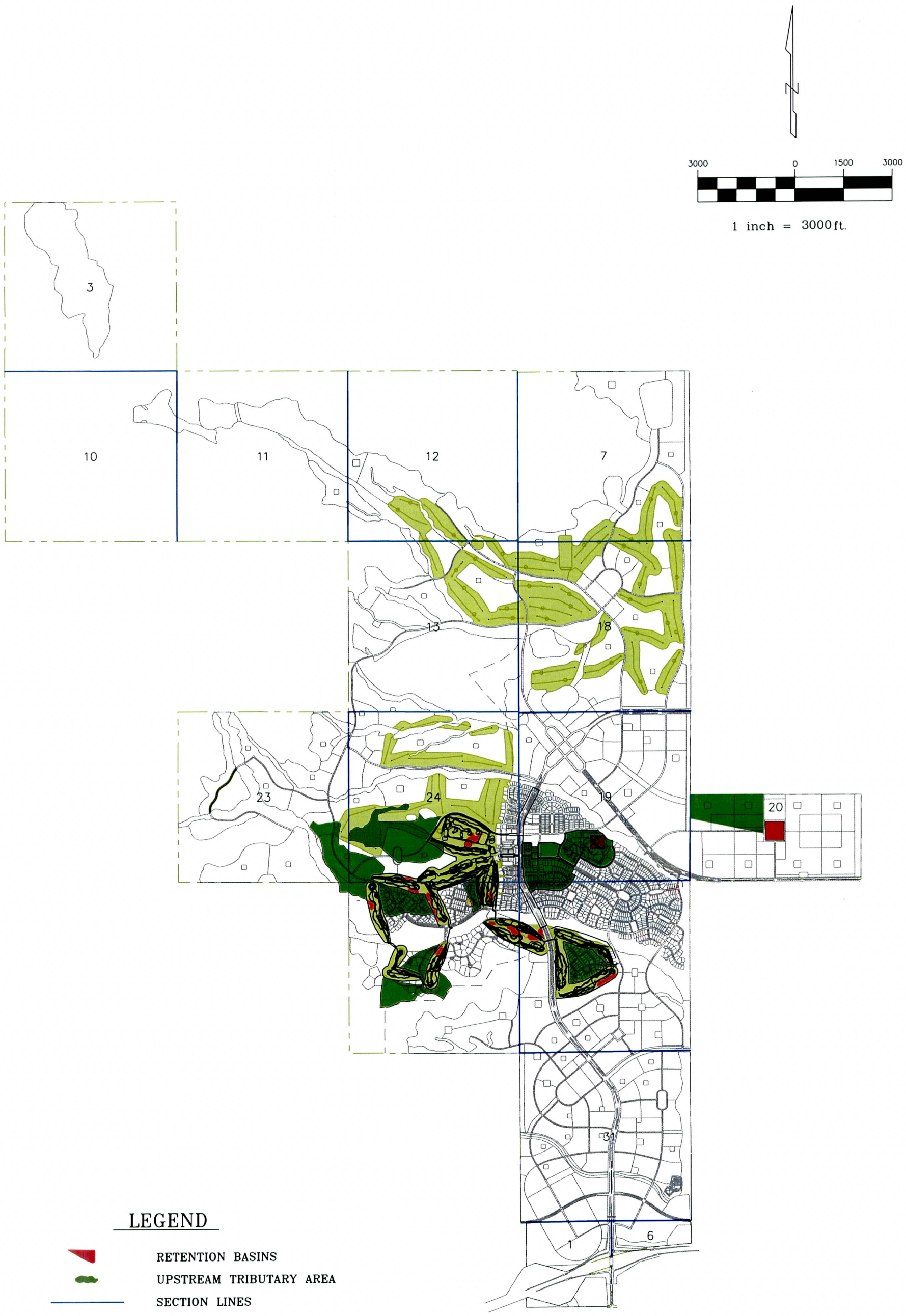

PLATE 8
ONLINE RETENTION BASINS
TRIBUTARIES

VERRADO
BUCKEYE, ARIZONA

DMB

WOOD, PATEL & ASSOCIATES, INC.
Civil Engineers, Hydrologists and
Land Surveyors
(602) 335-8500

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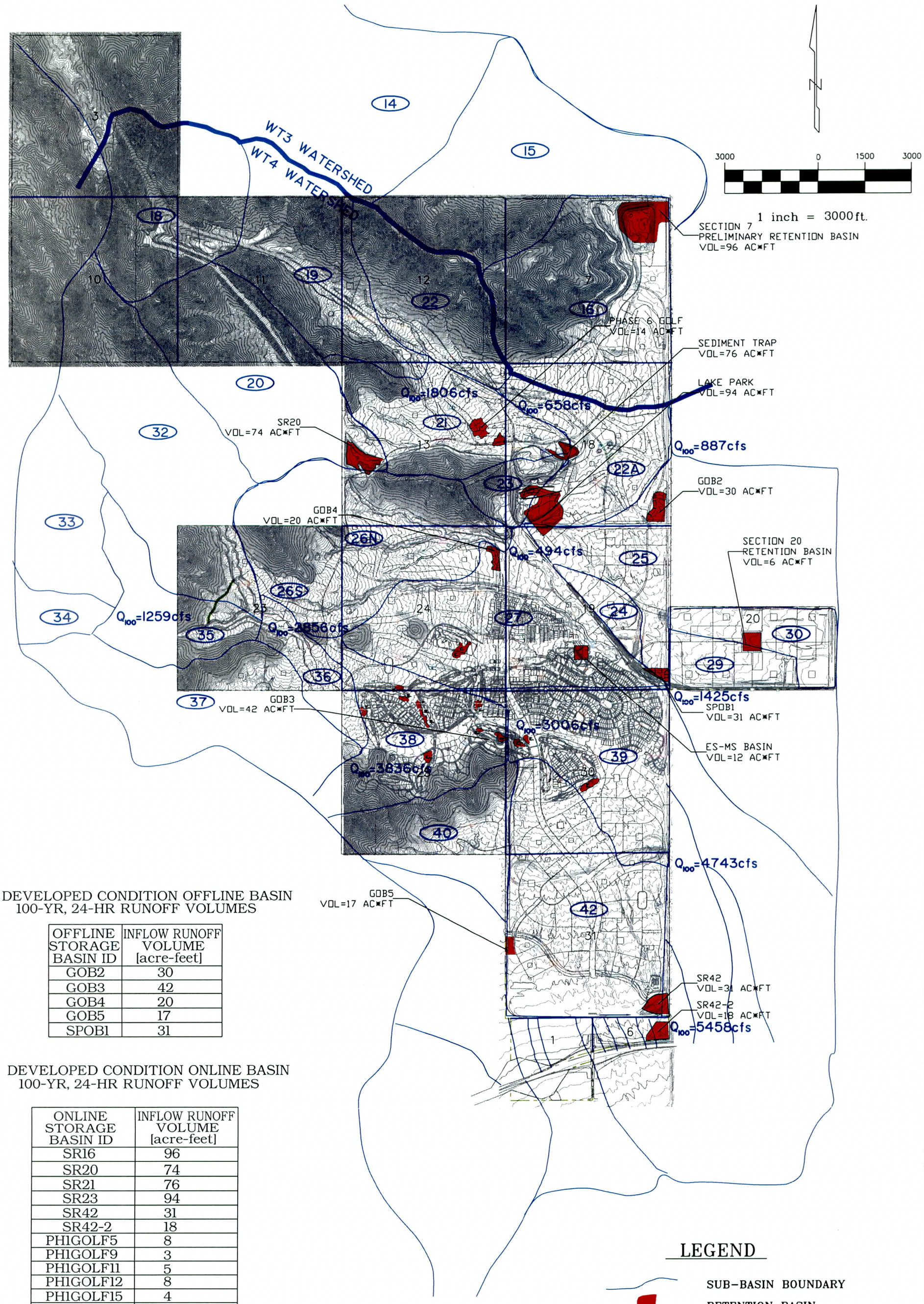
PLATE 9

Developed Conditions Drainage Plan



DEVELOPED CONDITION OFFLINE BASIN
100-YR, 24-HR RUNOFF VOLUMES

OFFLINE STORAGE BASIN ID	INFLOW RUNOFF VOLUME [acre-feet]
GOB2	30
GOB3	42
GOB4	20
GOB5	17
SPOB1	31

DEVELOPED CONDITION ONLINE BASIN
100-YR, 24-HR RUNOFF VOLUMES

ONLINE STORAGE BASIN ID	INFLOW RUNOFF VOLUME [acre-feet]
SR16	96
SR20	74
SR21	76
SR23	94
SR42	31
SR42-2	18
PH1GOLF5	8
PH1GOLF9	3
PH1GOLF11	5
PH1GOLF12	8
PH1GOLF15	4
PH1GOLF16	11
PH1 DR. RNGE	22
ES/MS	12
SEC 20	6
PH6 GOLF	14

DMB

PLATE 9
DEVELOPED CONDITION DRAINAGE PLAN
VERRADO
BUCKEYE, ARIZONA

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Civil Engineers, Hydrologists and Land Surveyors
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PLATE 10

Phase I Drainage Improvements

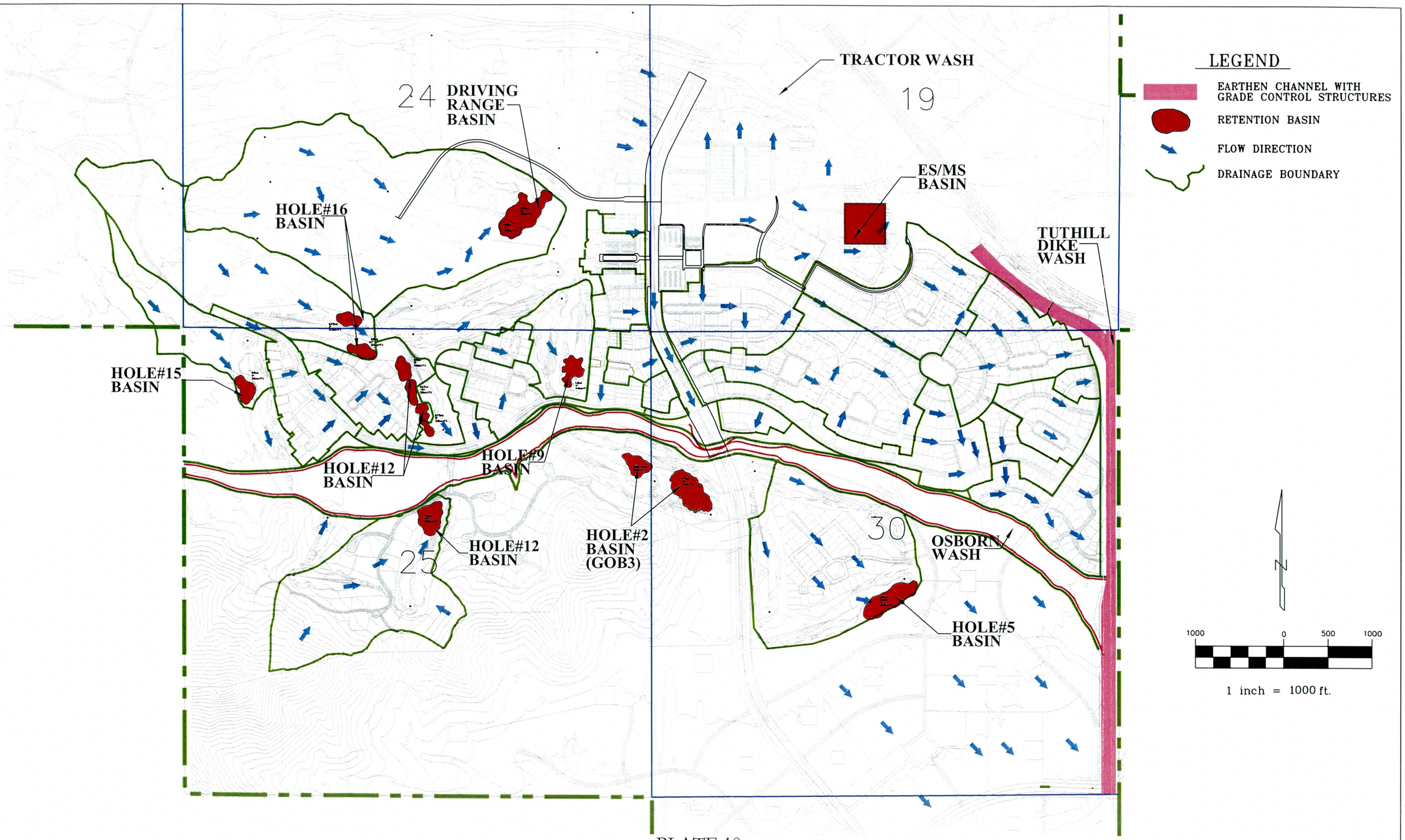

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PLATE 10

PHASE I DRAINAGE IMPROVEMENTS

VERRADO

BUCKEYE, ARIZONA

WOOD, PATEL & ASSOCIATES, INC.
Civil Engineers, Hydrologists and Land Surveyors
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08/27/02

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