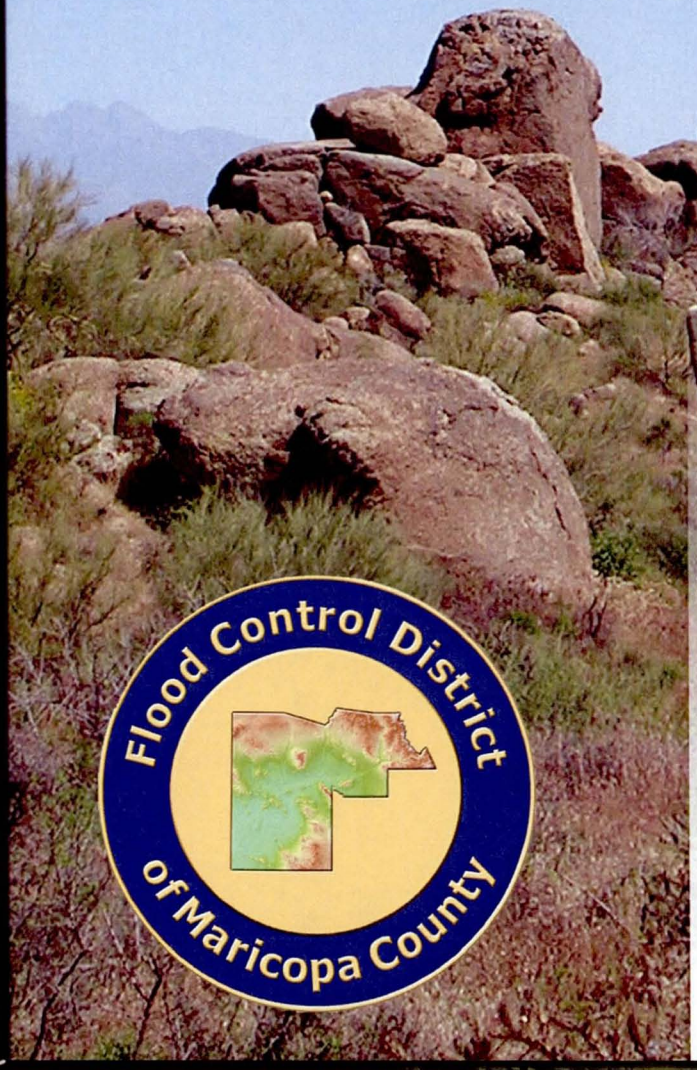
Rio Verde Area Drainage Master Plan
Floodplain Delineation
FCD 2001C056

Volume 4
1-Dimensional Hydrology
Technical Data Notebook - Appendices

November 2007



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BRIAN J. FRY
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Flood Control District of Maricopa County

Prepared by:

Dibble Engineering™

In association with:

JE FULLER
HYDROLOGY & GEOMORPHOLOGY, INC.

RIO VERDE AREA DRAINAGE MASTER PLAN
FLOODPLAIN DELINEATION

FCD Contract No.: 2001C056

1-DIMENSIONAL HYDROLOGY
TECHNICAL DATA NOTEBOOK- APPENDICES

November 2007

Prepared for:

FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY

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APPENDIX A

REFERENCES

Appendix A: References

(1) Arizona Department of Transportation. (1994), Highway Drainage Design Manual – Hydrology, prepared by NBS/Lowry Engineers & Planners, Inc., Phoenix, Arizona. Revised April 1994.

(2) Brooks, Hersey and Assoc., Inc. (1993), Revised Master Drainage Plan, Tonto Verde prepared for Rio Verde Services, Inc.

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(4) Burgess & Niple, Inc. (1994), Report on Manning's "n" Values, Rio Verde North Floodplain Delineation Study, Wash A, Wash A South, Wash F, Wash I, prepared for Flood Control District of Maricopa County.

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(6) David Evans & Associates, Inc. (2002), Rio Verde North Extension Floodplain Delineation Study, Technical Data Notebook, Vol III – Hydrologic Analysis (Southern Watershed), prepared for Federal Emergency Management Agency (FEMA), in behalf of Flood Control District of Maricopa County, Phoenix, Arizona.

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(9) Environmental Systems Research Institute, Inc. (2000), ArcGIS 8.2 (Build 700), a computer program package developed by ESRI, Inc., Redlands, California.

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(11) JE Fuller Hydrology and Geomorphology, Inc., (1999), Floodplain Delineation Study of Rio Verde South Extension, Technical Data Notebook, Vol. 1 of 2, prepared for Flood Control District of Maricopa County, Phoenix, Arizona.

(12) JE Fuller Hydrology and Geomorphology, Inc., (1999), Floodplain Delineation Study of Rio Verde South Extension, Technical Data Notebook, Vol. 2 of 2, prepared for Flood Control District of Maricopa County, Phoenix, Arizona.

(13) KVL Consultants, Inc. (2001), Drainage Design Management System (Version 1.8), *User's Manual*. Release Date: May 14, 2001.

(14) McLaughlin & Kmetty Engineers, Ltd. (1995), Rio Verde South Floodplain Delienation Study, Technical Data Notebook, Hydrology – Existing Conditions, Book 1 of 2, in association with George V. Sabol Consult. Eng., Inc., prepared for Flood Control District of Maricopa County, Phoenix, Arizona.

(15) McLaughlin & Kmetty Engineers, Ltd. (1995), Rio Verde South Floodplain Delienation Study, Technical Data Notebook, Hydrology – Existing Conditions, Book 2 of 2, in association with George V. Sabol Consult. Eng., Inc., prepared for Flood Control District of Maricopa County, Phoenix, Arizona.

(16) O'Brien, J.S., (2003), FLO-2D (Version 2003.6.30), a computer program developed by FLO Engineering, Inc., Nutrioso, Arizona.

(17) Primatech, Inc. (2001), Rio Verde North Extension Flood Delineation Study, Project No. 98-21, prepared for Flood Control District of Maricopa County, Phoenix, Arizona. September, 2001.

(18) Soil Conservation Service (1991), Soil Survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties, Arizona, in cooperation with Arizona Agricultural Experiment Station.

(19) U.S. Army Corps of Engineers. (1991). HEC-1 Flood Hydrograph Package (Version 4.1, Release Date: June 1998), computer program developed by Hydrologic Engineering Center, Davis, California.

(20) U.S. Department of Agriculture (1977), Soil Survey of Maricopa County, Arizona, Central Part, in cooperation with Arizona Agricultural Experiment Station.

APPENDIX B
General Documentation and Correspondence

Flood Control District of Maricopa County
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DATE: January 31, 2002

MEMO TO: Felicia Terry, P.E.

FROM: Kathryn Gross

SUBJECT: Rio Verde ADMP Hydrology comments for North-North watershed

Felicia,

Here are my comments regarding the northern-most watershed for the Rio Verde ADMP.

1. Subbasin areas – The areas in DDMSW and the hydrology model are reasonable and accepted.

2. Flowpath and Lca concerns - The following flowpaths and Lca's need to be re-verified. For the majority of the subbasins listed below I expected the flowpath length and Lca to be fairly consistent with the lengths and Lca's determined by Primatech in the Rio Verde North Extension FDS. Please have Dibble either make the appropriate corrections or provide an explanation for the differences.

SUBBASIN	PRIMATECH LENGTH	DIBBLE LENGTH	PRIMATECH LCA	DIBBLE LCA
B11W6	1.62	.77	1.02	.48
B13W1	1.2	1.53	.63	.84
B14W6	1.23	.84	.72	.43
B3W4	---	---	.31	.47
B4W5	.58	.84	.23	.45
B6W5	---	---	.65	.58
B6W6	---	---	.53	.45
B7W1	---	---	.6	.49

3. Soils data – The following subbasin's soil information should match the soils information used in the original North-North model developed by Primatech. There have been no significant modifications to these subbasins to warrant a difference between the two studies. If Dibble does not have the original breakdowns for each subbasin in Primatech's DDMS files I can provide them.
    - B10W1, B5W1, B6W1, B7W1, B8W1, B9W1, B9W6, B7W5

4. Soils data – The following subbasin's soil information will need to be revised either from the hardcopy Soils Map from Primatech's North-North hydrology or, potentially, the General Soils Map for Maricopa County (expected source of Primatech's data; District still looking for a copy of this report). These subbasins have been broken down from the original Primatech subbasin delineations thus requiring a re-analysis of the soil distribution for the newly created smaller subbasins.
    - B5W4A, B5W4B, B4W4, B2W4C

5. Soils data – For B2W6, please update the soil code for the areas presently marked 301 and the area immediately north of the 301 designation. The soil type is 121.

6. Soils data – For any subbasin containing soil unit 63, the default for this soil unit is 25 percent rock outcrop. However, this is just the amount of rock outcrop present within the entire soil unit not specifically at every location in the soil unit. Dibble will need to verify the specific amount of rock outcrop present, if any, in each occurrence of the 63 soil unit in each subbasin.

7. Landuse data – I recommend that the desert land use be used instead of using the zoning classification of open space and vacant for undeveloped properties. The specific parameters to use for the desert landuse will need to be reviewed for each watershed and Dibble should make a recommendation to the District regarding whether each watershed should have its own specific desert land use parameters or if there can be one set of parameters for all three watersheds. I will prepare a packet of information with all the landuse parameter data for each watershed that Dibble can pick up early next week.

8. Landuse data – The landuse map for North-North has water as a category for subbasin B5W1. Please correct the map.

9. Routings – For all routings Dibble will need to explain why the station end point elevations were changed from the Primatech determined elevation to an arbitrary 3000 ft elevation.

10. Routings – For all routings Dibble will need to explain why the original cross-section stationings were kept but their associated elevations were modified.

11. Routings – For RB12W6, Dibble will need to explain why they used the modified RB11W6 routing instead of the original RB12W6 routing.

I have no more comments at this time. Comments regarding the north-south and southern-most watersheds shall be forthcoming in the next week.

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DATE: February 12, 2003

MEMO TO: Felicia Terry P.E., Project Manager

FROM: Kathryn Gross, Hydrologist

SUBJECT: Rio Verde ADMP Hydrology Review comments for North-South Dec 2002 submittal

Felicia,

Here are my comments regarding the middle watershed for the Rio Verde ADMP.

12. Subbasin areas – The areas in DDMSW and the hydrology model are reasonable and accepted.

13. Flowpath concerns – Please re-visit the following subbasin flowpaths. There are discrepancies between the length reported in the Arcview theme and values reported in DDMSW. All other flowpaths appear reasonable.

    - 1B1, 1B2, 1B3, 2A, 2B1, 2B3, 2B5, 3B2, 4B2, 5B2, 9B

14. Lca concerns – Please re-verify the lca value for subbasin 2B6, it seems a little long. Otherwise, the rest of the Lca's appear reasonable.

15. Soils data – For any subbasin containing soil unit 63, the default for this soil unit is 25 percent rock outcrop. However, this is just the amount of rock outcrop present within the entire soil unit not specifically at every location in the soil unit. Dibble will need to verify the specific amount of rock outcrop present, if any, in each occurrence of the 63 soil unit in each subbasin.

16. Soils data – For any subbasin containing soil unit 72, the default for this soil unit is 30 percent rock outcrop. However, this is just the amount of rock outcrop present within the entire soil unit not specifically at every location in the soil unit. Dibble will need to verify the

specific amount of rock outcrop present, if any, in each occurrence of the 72 soil unit in each subbasin.

17. Soils data - All other soils data appears reasonable.

18. Landuse data – I recommend that the desert land use be used instead of using the zoning classification of open space and vacant for undeveloped properties. The specific parameters to use for the desert landuse will need to be reviewed for each watershed and Dibble should make a recommendation to the District regarding whether each watershed should have its own specific desert land use parameters or if there can be one set of parameters for all three watersheds.

19. Landuse data – Along with developing a Desert category suitable to Rio Verde, I recommend that the parameters used for the Rural classification be reviewed and suitable parameters for Rio Verde be developed. The present values are the default values for Maricopa County and represent typical Valley rural landuses (irrigated lots etc.). These conditions may not be suitable for Rio Verde. The development of these "Rio Verde Rural" parameters may also provide guidance for subdivisions that will need to develop a post-development model.

    - DTETHA – Normal (questionable)
    - Veg % - 30 (questionable)
    - RTIMP – 5 (questionable)
    - IA - .30 (still might be reasonable)
    - Kn – .05 (still might be reasonable)

20. Landuse data – Additions to the Rural landuse category may be necessary. Presently, rural is zoned within subbasins 4N and 3S. However, land conditions in 9B, 8B1, 3B2, and 8B2 appear very similar. The zoning map should be used as a starting point but the actual determination of land use should be based on existing conditions shown in the aerial photography.

21. Routings - The following comments (11 - 32) are in regard to the routings used in the north-south model.

22. For all routings Dibble will need to explain why the station end point elevations were changed from the DEA determined elevation to an arbitrary 300 ft elevation.

23. The following routings appear reasonable:

    - RT1112, RT136B

24. For RT1314, the wrong representative cross-section was used for this routing. Routing 1314 is located within the original DEA 5B subbasin and will need a new cross-section developed to represent this routing. The representative cross-section used for this routing was DEA's 5B-9B which represents a channel east of 136th Street.

25. For RT1452, the wrong representative cross-section was used for this routing. A new cross-section will need to be developed for this routing. The representative cross-section used for this routing was DEA's 4B-8B which again represents a channel east of 136th Street.

26. For RT529B, the wrong representative cross-section was used for this routing. I do agree that the same representative cross-section can be used for both RT1452 and RT529B. However, the present cross-section (DEA 4B-8B) is inappropriate for this location. DEA routing 5B-9B is a better representation as it is on the same wash system.

27. For RT519B, the wrong representative cross-section was used for this routing. DEA routing 4B-8B is on a different wash system than this routing. I would recommend the use of DEA's 5B-9B or developing a new cross-section for this routing.

28. For RT819B, the distance between concentration points does not seem significant enough to warrant this routing. I would recommend removal of this routing. However, if Dibble wishes for it to remain, DEA's 4B-8B does seem appropriate as a representative cross-section.

29. For RT4142, the wrong representative cross-section was used for this routing. DEA's 3B-7B is located on a different wash system. I would recommend developing a new representative cross-section for this routing or at least using DEA's 4B-8B since it is located on the same wash system.

30. For RT4282, the wrong representative cross-section was used for this routing. DEA's B-11B is located well downstream of this location. I would recommend using DEA's 4B-8B since it was actually developed on this routing reach.

31. For RT2122, the wrong representative cross-section was used for this routing. DEA's B-11B cross-section does not represent this reach. I recommend the development of a new representative cross-section for this routing reach.

32. For RT2226, the wrong representative cross-section was used for this routing. DEA's routing 6B-10B was developed on a different wash system. I recommend that a new representative cross-section be developed for this routing reach representing local channel conditions.

33. For RT4526, the wrong representative cross-section was used for this routing. DEA's routing 10B-11B was developed on a different wash system. I recommend that a new representative cross-section be developed for this routing reach representing local channel conditions.

34. For RT2632, the wrong representative cross-section was used for this routing. DEA's routing 10B-11B is inappropriate. I recommend the use of DEA's 2B-3B routing cross-section since it was developed along this actual reach length.

35. For RT3132, the wrong representative cross-section was used for this routing. DEA's routing 10B-11B is inappropriate. I recommend using DEA's 3B-7B routing cross-section since it was developed along this actual reach length.

36. For RT3282, the distance between concentration points does not seem significant enough to warrant this routing. I would recommend removal of this routing. However, if Dibble wishes for it to remain, the representative cross-section will need to be updated. The representative cross-section from DEA's 3A-5A is inappropriate at this location as it represents a channel on another wash system. I would recommend using DEA's B-11B as a guide to develop a representative routing.

37. For RT829B, the distance between concentration points does not seem significant enough to warrant this routing. I would recommend removal of this routing. However, if Dibble wishes

for it to remain, the representative cross-section will need to be updated: DEA's 3A-5A is inappropriate for this location. I would either develop a new representative cross-section or possibly use the revised cross-section developed for RT3282.

38. For RT1S2S, please verify that this reach is appropriately labeled in DDMSW and in the reach theme in ArcView. Also, the wrong representative cross-section was used for this routing. DEA's 3B-7B is inappropriate at this location since it is located on a different wash system. I recommend the use of DEA's 1IS-2IS as this routing's representative cross-section.

39. For RT2S3S, the wrong representative cross-section was used for this routing. DEA's 3B-7B is inappropriate at this location since it is located on a different wash system. I recommend the use of DEA's 2IS-3IS as this routing's representative cross-section since it was developed along this reach length.

40. For RT3S4N, the wrong representative cross-section was used for this routing. DEA's 3B-7B is inappropriate for this location. I recommend the development of a new cross-section representing local channel conditions for this reach.

41. For RT3N4N, the wrong representative cross-section was used for this routing. DEA's 3B-7B is inappropriate for this location. I recommend the development of a new cross-section representing local channel conditions for this reach.

42. For RT2N4N, the wrong representative cross-section was used for this routing. DEA's 3B-7B is inappropriate for this location. I recommend using DEA's 2IN-4IN representative cross-section for this routing.

43. For all routings, it appears that the slopes were taken from DEA's representative reaches as well. Please be sure to verify slopes where subbasins have been shortened or modified from the original DEA subbasins.

44. Flow splits – Please provide documentation for Diversion 1B3L. Why was there a need to re-analyze this split and modify the original diversion relationship from DEA?

45. HEC-1 Schematic – The schematic appears reasonable and is accepted.

46. Rainfall – Discussion with Dibble will be necessary regarding the rainfall values being used in this watershed. The rainfall value varies between what was used by DEA (DEA – 4.271 vs. Dibble 4.443). It is understandable that this rainfall value will change when DDMSW calculates the areal reduction since the two models represent different sized watersheds. However, certain discharges have increased significantly from the original DEA model and we need to be assured that these increases are reasonable. Also, the discrepancy between the changed rainfall for north-south and lack of change for north-north will need to be addressed. Dibble's and Primatech's watershed areas for north-north varied as well but no change in rainfall occurred.

I have no more comments at this time. Comments regarding the southern-most watershed shall be forthcoming.

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DATE: February 12, 2003

MEMO TO: Felicia Terry P.E., Project Manager

FROM: Kathryn Gross, Hydrologist

SUBJECT: Rio Verde ADMP Hydrology Review comments Addendum to North-North comments of January 2003

Felicia,

Here are some additional comments regarding the northern-most watershed. They specifically address the HEC-1 schematic and rainfall issues that were not covered in the original comments from January.

47. HEC-1 Schematic – Several Dummy hydrograph combines are used throughout the model. I recommend adding diversions after each dummy combine to "zero out" the discharges.

48. HEC-1 Schematic – I recommend re-locating hydrograph B1W5 within the model so it can be grouped with the other W5 hydrographs.

49. Rainfall – The same rainfall value used in the Primatech model is used in this Dibble model. The different watershed areas between the two models should have resulted in different areal reduction values and different rainfall values. Did the area not change significantly enough to warrant a change in the areal reduction in DDMSW or did Dibble "override" the rainfall amount in the HEC-1 file to maintain the same value as the original modeling? How to handle the changes to each watershed's rainfall values from the model modifications will need to be discussed in order to maintain consistency between watershed models as well as the implications on the resulting discharges.

I have no more comments at this time.

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DATE: March 3, 2003

MEMO TO: Felicia Terry P.E., Project Manager

FROM: Kathryn Gross, Hydrologist

SUBJECT: Rio Verde ADMP Hydrology Review comments for Southern Hydrology Dec 2002 submittal

Felicia,

Here are my comments regarding the southern watershed for the Rio Verde ADMP.

50. Subbasin areas – The areas in DDMSW and the hydrology model are reasonable and accepted.

51. Flowpath concerns – Please re-visit the following subbasin flowpaths when the new topography is submitted and make any updates necessary to the path, lengths, elevations and slope calculations.

    - 500B, 511H, 511G, 511C3, 510A, 509A1, 509A3, 509B, 509D

52. Flow path concerns – Please re-visit the flow path for 511C2. Why does the route not start in the upper northwest portion of the subbasin? All other flowpaths appear reasonable.

53. Lca concerns – Lca's appear reasonable.

54. Soils data – For any subbasin containing soil unit 63, the default for this soil unit is 25 percent rock outcrop. However, this is just the amount of rock outcrop present within the entire soil unit not specifically at every location in the soil unit. Dibble will need to verify the specific amount of rock outcrop present, if any, in each occurrence of the 63 soil unit in each subbasin.

55. Soils data – For any subbasin containing soil unit 72, the default for this soil unit is 30 percent rock outcrop. However, this is just the amount of rock outcrop present within the entire soil unit not specifically at every location in the soil unit. Dibble will need to verify the

specific amount of rock outcrop present, if any, in each occurrence of the 72 soil unit in each subbasin.

56. Soils data – Regarding Soil Unit W (water) representing the tank location, given that this tank is typically dry we may need to consider revising the soil unit back to an actual soil unit (unit 6 surrounds the tank). Lets discuss. All other soils data appears reasonable.

57. Landuse data – I recommend that the desert land use be used instead of using the zoning classification of open space and vacant for undeveloped properties. The specific parameters to use for the desert landuse will need to be reviewed for each watershed and Dibble should make a recommendation to the District regarding whether each watershed should have its own specific desert land use parameters or if there can be one set of parameters for all three watersheds.

58. Landuse data – Along with developing a Desert category suitable to Rio Verde, I recommend that the parameters used for the Rural and Large Lot classifications be reviewed and suitable parameters for Rio Verde be developed. The present values are the default values for Maricopa County and represent typical Valley rural landuses (irrigated lots etc.). These conditions may not be suitable for Rio Verde. The development of these "Rio Verde Rural" parameters may also provide guidance for subdivisions that will need to develop a post-development model.

    - The following values represent Rural then Large Lot (rural; large lot)
    - DTETHA – Normal (questionable); Normal (questionable)
    - Veg % - 30 (questionable); 50 (questionable)
    - RTIMP – 5 (questionable); 15 (questionable)
    - IA - .30 (still might be reasonable); .30 (still might be reasonable)
    - Kn – .05 (still might be reasonable); .05 (still might be reasonable)

59. Landuse data – Additions to the Rural/Large Lot landuse categories may be necessary for the following subbasins. The zoning map should be used as a starting point but the actual determination of land use should be based on existing conditions shown in the aerial photography.

    - 509A3, 511C3, 510A, 500B, 511H, 509D

60. Landuse data – Should the tank really be labeled as a water feature and have loss parameters associated with water?

61. Landuse data – I recommend that the new Scottsdale development going in north of Rio Verde Dr. and west of 136th St. be added to the existing conditions model. Dibble should contact the City of Scottsdale to get the final plans and drainage reports associated with this development.

62. Routings - The following comments (14 - 27) are in regard to the routings used in the south model.

63. For all routings Dibble will need to explain why the station end point elevations were arbitrarily increased 50-100 ft from the originally determined elevations.

64. The following routings appear reasonable:

    - RTA1D, RTAB, RTC1C3, RTF1F2

65. For RT12B4, I would recommend re-verifying this route. Cutting a cross-section within this new routing reach may better represent the routing. However, the current route (525526) cross-section may reasonably reflect channel conditions in this area as well, just further downstream.

66. For RTB3B4, the wrong representative cross-section was used for this routing. A new cross-section representing the channel along Rio Verde Dr. will need to be developed. The representative cross-section 525526 from the original study does not reflect channel conditions for this route.

67. For RTA2A1, I would recommend re-verifying this route. Cutting a cross-section within this new routing reach may better represent the routing. However, the current route (524526) cross-section may reasonably reflect channel conditions in this area.

68. For RTE1E3, a new cross-section will need to be developed for this route. The representative cross-section 525526 from the original study does not reflect channel conditions for this route.

69. For RTE4E5, a new cross-section will need to be developed for this route. The representative cross-section 525526 from the original study does not reflect channel conditions for this route.

70. For RTE5E3, a new cross-section will need to be developed for this route. The representative cross-section 525526 from the original study does not reflect channel conditions for this route.

71. For RTE2E3, I would recommend re-verifying this route. Cutting a cross-section within this new routing reach may better represent the routing. However, the current route (525526) cross-section may reasonably reflect channel conditions in this area.

72. For RTEFC2, the wrong representative cross-section was used for this routing. Cross-section 527528 from the original south study represents this reach. However, even this cross-section should be verified to make sure it is a truly represents channel conditions along this reach.

73. For RTC2C1, I would recommend re-verifying this route. Using cross-section 527528 from the original study may better represent the routing. However, the current route (528529) cross-section may reasonably reflect channel conditions in this area.

74. For RTG1G2, I would recommend re-verifying this route. Cutting a cross-section within this new routing reach may better represent the routing. However, the current route (528529) cross-section may reasonably reflect channel conditions in this area.

75. For RTH1H2, the wrong representative cross-section was used for this routing. Cross-section 530531 from the original south study represents this reach.

76. For routings RTA1A3, RTA2A3, and RTE4A2, I would recommend re-verifying these routes. Cutting new cross-sections may better represent these routings. However, the current route 552553 being used for these routes may reasonably reflect channel conditions in the area but even this cross-section should be verified to make sure it truly represents channel conditions along this reach.

77. Flow splits – Please provide documentation for Diversion DIE4A2.

78. HEC-1 Schematic – The schematic appears reasonable and is accepted.

79. Rainfall – The 24- and 6-hour rainfall values differ from the original south study (4.6 vs. 4.4 inches for the 24-hour and 3.45 vs. 3.4 inches for the 6-hour). Although the 6-hour is the controlling storm the difference between the 24-hour models should be looked into. The 6-hour rainfall amount used by Dibble is reasonable in comparison to the original. Also, discussion will be necessary regarding the use of the JD records. The other Rio Verde models do not use the JD record option. I would like consistency between the three models but I want to make sure that the areal reduction method chosen for each watershed is appropriate whether it be watershed based areal reduction or JD record areal reduction. The influence on the current FEMA delineations may also need to be evaluated.

I have no more comments at this time.

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DATE: May 28, 2003

MEMO TO: Felicia Terry, P.E.

FROM: Kathryn Gross

SUBJECT: Rio Verde ADMP Hydrology – Supplementary Data Sheet: Accompaniment to April 25th Meeting Notes

Felicia,

Here are my comments regarding the Supplementary Data Sheet provided by Dibble from the April 25th meeting between myself and Carlos Carriaga of Dibble and Associates. The Supplementary Data Sheet submitted contains updated information on percentages of rock outcrop to be used in certain subbasins as well as newly developed routings within Dibble's subbasin breakdown. The supplementary data sheet addresses my comments regarding rock outcrop percentages and the need for additional routings for the three watersheds.

Rock Outcrop Percentages

1. For all watersheds the rock outcrop percentages being proposed appear reasonable based on photo inspection. The resulting discharges from subbasins with greater than 15% rock outcrop should be checked for reasonableness. This check is necessary since no subbasin appears to have hydraulically connected imperviousness to the subbasin outlets. This transmission loss potential may need to be reflected as an additional factor to the rock outcrop percentage.

Newly Developed Routings

1. For all watersheds the newly developed routings appear reasonable.

I have no more comments at this time. I will verify that the new rock outcrop percentages and new routings are included in the next formal hydrology submittal.

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399
(602) 506-1501
FAX: (602) 506-4601
TT: (602) 506-5897
www.fcd.maricopa.gov

DATE: August 8, 2003

MEMO TO: Felicia Terry, P.E.

FROM: Kathryn Gross

SUBJECT: Rio Verde ADMP Hydrology comments for the South watershed - July submittal

Felicia,

Here are my comments regarding the southern watershed for the Rio Verde ADMP.

1. The subbasin parameters appear reasonable.

2. Subbasin Delineations: Presently subbasins 511G1 and 511G2 are not subdivided at the Rio Verde Drive Crossing. I was thinking that the District and Dibble had decided that these subbasins should be split so that we would have a known discharge at the crossings.

3. Rainfall: Presently, the model submitted is using JD records. The other two models do not. I understand that the original southern modeling did use JD records and we are attempting to maintain consistency with the downstream FEMA delineated floodplain. However, I am concerned that we may be inappropriately mixing rainfall methods by using JD records for the upper watershed and simple areal reduction in the FLO-2D watershed. I would recommend removing the JD records from the southern model. Before any rainfall changes are made to the model we should discuss this with Tom Loomis and Dibble.

4. Routings: Dibble should re-evaluate routing RTB4B. Presently its discharge is higher (only by 1 cfs) than the above concentration point's discharge.

5. The following schematic issues need to be addressed.

   - RTC1E1 should be combined at CP1E2 instead of CP11E2. CP11E2 will need to have the number of hydrographs revised in the HC record to reflect this change as well.
   - RTC8C7 needs to be combined at CP11C7. Presently it is left hanging.
   - It is recommended that 511C6 and DI5C6 be combined and then routed to CP11C7.

6. Diversion DIC2C5 needs to be re-verified. Based on the channel appearance in the aerial, it appears that more flow should be going to C5. Also, upstream of the current diversion location analyzed, two other washes divert off of the main trunk channel (one to the north and one to the south). I would recommend moving the diversion to this location or at least expanding the current cross-section 4 to include both of these channels.

7. All other diversions appear reasonable.

8. The same GIS concerns noted in the above watersheds occur in this watershed as well:

   - Some of the flow paths and routing lines show flow going in the upstream direction when a line type with an arrow is used. These flow paths and routings will need to be modified so that the line "reads" upstream to downstream.
   - Some issues may arise from GIS where there are no routing connectors from subbasin concentration points to the main routing reach and the downstream concentration point. A meeting with the GIS staff may be necessary to determine if this needs to be resolved and how to go about doing it.
   - Routing reach RT12B4 needs to connect to its upstream concentration point.

I have no more comments at this time.

Flood Control District
of Maricopa County

INTEROFFICE MEMORANDUM

Date: September 29, 2003

To: Felicia Terry, Project Manager

From: Kathryn Gross, Hydrologist

Subject: Rio Verde ADMP Hydrology Approval

I have reviewed the HEC-1 models for all three watersheds submitted on September 18, 2003. All comments have been addressed. Therefore, the three hydrology models for the Northern, Middle, and Southern watersheds are accepted.

As discussed previously, the potential still exists that based on the GIS deliverable requirements some line work may have to change which may affect flow path or routing lengths. These modifications to the GIS work will require updates in the hydrology models.

I have no more comments at this time.

Flood Control District
of Maricopa County

INTEROFFICE MEMORANDUM

Date: October 23, 2003

To: Felicia Terry, Project Manager

From: Kathryn Gross, Hydrologist

Subject: Rio Verde ADMP Southern Hydrology Revision – October 2003

I have reviewed the revised HEC-1 model for the southern watershed submitted on October 21, 2003. The model was resubmitted after an error was discovered in the rainfall distribution for the 100-year 24-hour model. This error has been corrected and the modeling for the southern watershed is accepted.

As discussed in previous memos, the potential still exists that based on the GIS deliverable requirements some line work may have to change which may affect flow path or routing lengths. These modifications to the GIS work will require updates in the hydrology models.

I have no more comments at this time.

Flood Control District
of Maricopa County

INTEROFFICE MEMORANDUM

Date: February 6, 2004

To: Felicia Terry, Project Manager

From: Kathryn Gross, Hydrologist

Subject: Rio Verde ADMP North-South Hydrology Approval

I have reviewed the January/February 2004 HEC-1 model for the North-South watershed. The modeling for this watershed was revised to account for the Black Hills Stock Tank as it is now considered a jurisdictional structure by ADWR. The modeling of the stock tank appears reasonable and the revised hydrology model is accepted.

As discussed previously, the potential still exists that based on the GIS deliverable requirements some line work may have to change which may affect flow path or routing lengths. These modifications to the GIS work will require updates in the hydrology models.

I have no more comments at this time.

Flood Control District
of Maricopa County

INTEROFFICE MEMORANDUM

Date: March 29, 2004

To: Felicia Terry, Project Manager

From: Kathryn Gross, Hydrologist

Subject: Rio Verde ADMP North-South Hydrology Update Approval

I have reviewed the March 2004 update to the HEC-1 models for the North-South watershed. Two models were submitted for review: one that modeled the Black Hills Tank as effective and the other that modeled the Tank as ineffective. The purpose of the update was to modify the original modeling schematic to include separate combination points for the four tributaries into Black Hills Wash to aid in the FLO-2D modeling. The modeling update appears reasonable and the revised hydrology models are accepted.

As discussed previously, the potential still exists that based on the GIS deliverable requirements some line work may have to change which may affect flow path or routing lengths. These modifications to the GIS work will require updates in the hydrology models.

I have no more comments at this time.

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Wednesday, March 31, 2004 12:49 PM
To: 'ccarriaga@dibblecorp.com'
Cc: Felicia Terry - FCDX
Subject: Rio ADMP south hydrology

Carlos,

Regarding your question of a few weeks back about the southern watershed subbasins that extended into the FLO-2D area, we are fine with the model in its present state. Those subbasins do not need to be removed. Removing the basins did not significantly modify the rainfall and subsequent discharges.

I am looking forward to seeing the final hydrology report. Also, have you ever submitted future condition hydrology models to me? Are they going to be part of the hydrology report?

Thanks,

Kathryn

-----Original Message-----
From: Carlos Carriaga [mailto:ccarriaga@dibblecorp.com]
Sent: Thursday, April 01, 2004 10:42 AM
To: 'Kathryn Gross - FCDX'
Subject: RE: Rio ADMP south hydrology

Kathryn,

Thanks for the update!

Yes, the future condition models will be in the final report and fully documented in the TDN.

However, if you want to have a separate submittal, I could do that as well. Thanks.

Carlos C. Carriaga, P.E., Ph.D.
Project Manager
Dibble & Associates, Inc.
2633 E. Indian School Rd., Suite 401
Phoenix, AZ 85016
Tel: 602-957-1155
Fax: 602-957-2838
Web Site: www.dibblecorp.com

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Thursday, April 01, 2004 1:40 PM
To: 'Carlos Carriaga'
Subject: RE: Rio ADMP south hydrology

Keep the future conditions with the final report. No separate submittal is necessary. I haven't reviewed the future conditions yet, right? I presume it is essentially only green and ampt changes?

Thanks,

Kathryn

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Thursday, April 29, 2004 3:56 PM
To: 'fbrown@dibblecorp.com'; 'ccarriaga@dibblecorp.com'
Subject: Hydrology/Hydraulics concerns

Frank,

I was wondering what the date of the HEC-1 model you are using for your discharges was. So far all the discharges match what I am calling the September 18th 2003 submittal. However, your last discharge point of CB9W6A is not present in that model. Nor was it present in the August 2003 submittal. Is there another model run that falls between September 2003 and today? I cannot seem to find anymore north-north models or approval letters beyond September '03 for north-north. Let me know what you find.

thanks,

Kathryn

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Friday, April 30, 2004 10:55 AM
To: Kathryn Gross - FCDX; 'fbrown@dibblecorp.com'; 'ccarriaga@dibblecorp.com'
Subject: RE: Hydrology/Hydraulics concerns

Hello,

Just checking back. I have been in an allergy fog for most of the week- still am today. But I had a clear moment and re-read the comment responses for the RAS submittal. It appears that you have updated the HEC-1 model since September but I do not believe that version ever was supplied to the District. I am going to need to have it so that I can forward it to Tom to update the FLO-2D runs. With the new modification we discovered that the inflow hydrographs to phase A are two HEC-1 models behind. Make sure the model with the new CB9W6A is the model included in the Phase 1 technical report.

Thanks,

Kathryn

-----Original Message-----
From: Carlos Carriaga [mailto:ccarriaga@dibblecorp.com]
Sent: Monday, April 11, 2005 9:48 AM
To: Kathryn Gross - FCDX
Cc: Brian Fry; Felicia Terry - FCDX
Subject: New Drainage Area and Topographic Data for Hydrology

Hi Kathryn,

Attached please find an image that shows the added drainage area for the hydrology. The delineation was based on the USGS Quad map particularly the southern boundary. We, currently, do not have the topographic data in this area to refine this delineation. I would like to know the extent of the added drainage area to be included for the hydrology.

(1) Do you want an area that ends at the proposed 1D HECRAS stream where topographic information are available? Or, a much larger area as shown.

Either, way I would like to get additional topographic information.

Please give me a call if you have questions.

Thanks.

Carlos C. Carriaga, Ph.D., P.E.

2633 E. Indian School Rd., Suite 401
Phoenix, AZ 85016
Phone: (602) 957-1155
www.dibblecorp.com

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Monday, April 11, 2005 12:32 PM
To: Carlos Carriaga
Cc: Brian Fry; Felicia Terry - FCDX
Subject: [SPAM] RE: New Drainage Area and Topographic Data for Hydrology

Carlos,

The added drainage area shown in the attached image is much larger than I anticipated. I have attached a shape file that essentially shows the proposed subbasin limits that I was looking for. The subbasin should end where the proposed floodplain delineation ends. The existing mapping should cover the area (just barely). Does the latest mapping data you received cover this area? Let us know.

Let me know if you have any other questions.

Kathryn

-----Original Message-----
From: Carlos Carriaga [mailto:ccarriaga@dibblecorp.com]
Sent: Monday, April 11, 2005 4:38 PM
To: Kathryn Gross - FCDX
Cc: Brian Fry; Felicia Terry - FCDX
Subject: New Drainage Area and Topographic Data for Hydrology

Kathryn,

Thank you for the comment. Attached please find the image showing the extent of the new delineated drainage area (orange area with dark blue boundary line). I superimposed the area (yellow boundary line) you sent me earlier showing an approximate area of the drainage basin.

The topographic data that we have is enough to cover the said area. Please let me know if this is acceptable to you. I will proceed with the hydrology update if this is ok.

Thanks.

Carlos C. Carriaga, Ph.D., P.E.

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From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Tuesday, April 12, 2005 11:18 AM
To: Carlos Carriaga
Cc: Brian Fry; Felicia Terry - FCDX
Subject: RE: New Drainage Area and Topographic Data for Hydrology

Carlos,

It looks fine. Go ahead and proceed. What were you anticipating as a submittal to us? Do you want to submit only this revised model or do you want to submit the draft hydrology section for the TDN models, text, maps and all? I am fine if you wanted to submit everything all together. The other models are fine. We would just need to make sure that the both north-south models (Black Hills Tank accounted for and unaccounted for) are included. The other big hurdle was only creating the hydrology exhibits per the Consultant Guidelines.. What are your thoughts?

Felicia, any thoughts too?

Kathryn

-----Original Message-----
From: Carlos Carriaga [mailto:ccarriaga@dibblecorp.com]
Sent: Wednesday, April 13, 2005 1:06 PM
To: Kathryn Gross - FCDX
Cc: Brian Fry; Felicia Terry - FCDX; 'Frank Brown'
Subject: Rio Verde North Extension Approved Thalweg and Cross-Section Data

Kathryn,

I would like to request the approved thalweg and cross-section data (in *.shp or in *.dwg format) for Washes 10 and 11
as shown on the attached Figure. Washes 10 and 11 are located in the Rio Verde North Extension which was conducted
by DEA.

Thank you.

Carlos Carriaga, Ph.D., P.E.
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Phoenix, AZ 85016
www.dibblecorp.com

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Wednesday, April 13, 2005 4:22 PM
To: Eric Feldman - FCDX
Cc: Felicia Terry - FCDX; ccarriaga@dibblecorp.com
Subject: FW: Rio Verde North Extension Approved Thalweg and Cross-Section Data

Eric,

Could you get the cross-sections and the thalweg for the following reaches from the DEA study for Carlos:

River: Wash I South Reach: 4IN-1
River: Wash I South Reach: washisouth 1
River: Black Hills Wash Reach: Black8B 1

It might be easier to just provide all thalwegs and cross-sections associated with the North Extension Study. Since we have not moved the data to the database, I do not know if you related the files to the attribute data that had the reach names.

Carlos, DEA had an additional wash Black8B 1 that was not superceded by a Dibble delineation. It corresponds to Wash 19 in the rvproposed shape file. I thought you might want those cross-sections as well.

Thanks,

Kathryn

From: Frank Brown [mailto:fbrown@dibblecorp.com]
Sent: Friday, May 13, 2005 9:04 AM
To: 'Kathryn Gross - FCDX'
Cc: Carlos Carriaga
Subject: Black Hills Tank

Hello Kathryn,

I want to be sure I understand the floodplain scenario near Black Hills Tank, before we make hydrology revisions. I cannot recall what hydrology revisions remain from Phase 1 for the without tank scenario.

We will be running the with and without models for the tank:

With Tank: This means that we will assume the tank is in place and is competent to withstand the 100-year flood. The floodplain delineation flow rate for 7B Spill Wash is the attenuated flow from the tank, but only from the tank to the confluence with 18 Wash (RVProposed shape file designation). The floodplain in this reach will be similar to the Phase 1 floodplain.

Without tank: We will assume that the tank is washed out, or is mechanically breached by a government agency. The hydrology will be revised for all points downstream. For 20 Wash and 18 Wash, this will be the unattenuated flow. From the confluence of 17 Wash and 18 Wash, the floodplain delineation will use the unattenuated flow rate. The floodplain in this reach will be different from the Phase 1 floodplain.

For the with and without scenarios, there will only be one floodplain delineation, based on the worst case (highest flow) from two different hydrology models. The District will also revise the 2D model with the higher flow rates for the without tank scenario.

Frank

Frank Edward Brown, P.E., CFM
Project Manager
Dibble & Associates

Phone 602.957.1155
FAX 602.957.2838
e-mail FBrown@Dibblecorp.com

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Friday, May 13, 2005 2:00 PM
To: Frank Brown
Cc: Carlos Carriaga; Felicia Terry - FCDX
Subject: RE: Black Hills Tank

Regarding the without tank model, I think that the concentration point CB3B2 might be the best to delineate both upstream and downstream of 136th street. At the tank it appears to be 2090 cfs (CB2B6) and at 136th St it appears to be 1835 cfs (CP3B2). I would not recommend using a smaller discharge downstream of the larger discharge. Concentration point where Wash 19 and 18 combine should be used for that discharge and so on and so forth until we hit the FLO-2D tie-in.

Do you agree to this approach, Frank? I do not see it impacting the hydrology models. Its just a matter of which number we extract from the models.

Kathryn

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Thursday, June 02, 2005 12:45 PM
To: ccarriaga@dibblecorp.com; bfry@dibblecorp.com
Cc: Thomas Loomis - FCDX; Felicia Terry - FCDX
Subject: Rainfall data for Rio Verde FLO-2D Phase A and Phase B

Carlos,

I know that one of the comments regarding the hydrology report for the 1D area was including the isopluvial maps in support of the prefre run.

Since talking with Tom, I found out that you did some similar work for the FLO-2D area. Could you please send us the isopluvial maps used in support of your point rainfall data for Area A and B along with any calculations of averaging the point rainfall and aerial reduction. We will need this for the FLO-2D Hydrology Section and Appendix.

Thanks,

Kathryn

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Tuesday, March 21, 2006 2:36 PM
To: carlos.carriaga@dibblecorp.com
Cc: brian.fry@dibblecorp.com; Felicia Terry - FCDX
Subject: Rio Verde ADMP hydrology

Carlos,

Could you email me the latest versions of each of the hydrology models? When comparing discharges used in the RAS modeling I noticed a few discrepancies between the models and what I thought were the final models (June 2004).

Thanks,

Kathryn

From: Carlos Carriaga [mailto:carlos.carriaga@dibblecorp.com]
Sent: Tuesday, March 28, 2006 8:28 PM
To: 'Kathryn Gross - FCDX'
Cc: 'brian.fry@dibblecorp.com'; 'Felicia Terry - FCDX'
Subject: HEC-1 Models

Kathryn,

Attached is a zip file that contains the existing 100-year, 24-hour models you requested for the
Rio Verde Project. Also included are notes to describe the models as well as documentation of the changes made on the original models.

If you have questions, please let me know.

<< File: RV_HEC1.zip >>

Thanks,

Carlos C. Carriaga, Ph.D., P.E.

Note:
WE HAVE MOVED!!! Dibble & Associates has moved to a new office location and has changed e-mail addresses. Here is our new contact information:

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
7500 North Dreamy Draw Drive, Suite 200
Phoenix, AZ 85020-4660
T 602.957.1155 F 602.957.2838
carlos.carriaga@dibblecorp.com
www.dibblecorp.com

From: Kathryn Gross - FCDX [mailto:kag@mail.maricopa.gov]
Sent: Tuesday, April 11, 2006 4:29 PM
To: Felicia Terry - FCDX; Thomas Loomis - FCDX; carlos.carriaga@dibblecorp.com; josh.papworth@dibblecorp.com; brian.fry@dibblecorp.com; Kathryn Gross - FCDX
Subject: Rio Verde ADMP - Discharge issues

Attached is a spreadsheet which lists locations where there are discrepancies between the HEC-1 models, RAS, and/or FLO-2D discharges. Some recommendations for resolving the issues are presented for certain locations. Others may need further discussion from the whole group.

<<FPqcomp.xls>>
Along with the spread sheet I wanted to also note that 7B Breach .040 needs a HEC-1 ID in the cross-section note.

Thanks,

Kathryn

From: Carlos Carriaga [mailto:carlos.carriaga@dibblecorp.com]
Sent: Tuesday, May 23, 2006 1:13 PM
To: 'Kathryn Gross - FCDX'
Cc: 'Josh Papworth'
Subject: ADMP Discharge Discrepancies

Kathryn,

We would like to meet and discuss with you, possibly this week, regarding the above subject. There are important items that need to be resolved before we could
finalize our analysis and results. Please let us know when is the best time to come and visit with you.

<< File: FPqcomp.xls >> << File: S Modeling Notes.doc >> << File: NN Modeling Notes.doc >> << File: NS Modeling Notes.doc >>
Thanks,

Carlos C. Carriaga, Ph.D., P.E.

Note:
WE HAVE MOVED!!! Dibble & Associates has moved to a new office location and has changed e-mail addresses. Here is our new contact information:

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CONSULTING ENGINEERS
7500 North Dreamy Draw Drive, Suite 200
Phoenix, AZ 85020-4660
T 602.957.1155 F 602.957.2838
carlos.carriaga@dibblecorp.com
www.dibblecorp.com

Kathryn,

I finally figured out what is the CPG_G4 in the south watershed. It is the combined flows from subbasins 511G1, 511G2, 511G3, and 511G4. The attached models (S_24E and S_24EX)
reflect this detailed change (i.e. evaluate CPG_G4 first before it gets combined with the flows from 511H).

If you have questions, please let me know.

Thanks,

Carlos C. Carriaga, Ph.D., P.E.

Note:
WE HAVE MOVED!!! Dibble & Associates has moved to a new office location and has changed e-mail addresses. Here is our new contact information:

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carlos.carriaga@dibblecorp.com
www.dibblecorp.com

Flood Control District
of Maricopa County

INTEROFFICE MEMORANDUM

Date: July 21, 2006

To: Felicia Terry, P.E. Project Manager, P&PM Division

From: Kathryn Gross, Senior Hydrologist, P&PM Division

Subject: Rio Verde Area Drainage Master Plan Hydrology TDN June 2006, Submitted July 2006

I have reviewed the TDN submittal and have the following comments.

Modeling Concerns

1. All models are technically sound.

    - Unexpected small changes to the discharges in the southern models were noted. Updates to the inflow hydrographs into the Area 2 FLO-2D model will be necessary.
    - Expected changes to the north-north model will require inflow updates for the Area 1 FLO-2D model.

2. For South models, the diversion notes need to be revised. Typically the note states that flows are leaving one subbasin and being diverted to another. The diversion location stated in the note is actually the subbasin where flows continue not the subbasin the flows were diverted to.

    - DICE2 – model note states flows go from 511C1 to 511E1 diverted flows however are retrieved at 511C4. The model note and Table D5.1 in the Appendix need to be updated to read 511C4 instead of 511E1.
    - DIC4E2 – model note states that flows go from 511C4 to E2 diverted flows however are retrieved at 511C5. The model note and Table D5.1 need to be updated to read 511C5 instead of E2.
    - DIC2C5 – model note states that flows go from 511C2 to 511C5. Table data appears to match 511C2 to CP09A2. Diverted flows however are retrieved at CP09A2. Model note needs to be updated to read CP09A2 instead of 511C5. No change is needed in Table D5.1.
    - DIC5E2 – model note states that flows go from 511C5 to 511E2 divert flows however are retrieved at 511C6. The model note and Table D5.1 need to be updated to read 511C6 instead of E2.

- DIA59B – model note states that flows go from 509A5 to 509B diverted flows however are retrieved at 509A6. The model note and Table D5.1 need to be updated to read 509A6 instead of 509B.

TDN Text Comments

1. Section 4.1. Text discussing the North-South models should be discussed here since there are two sets of models. It should discuss that the North-South W/O Tank is the effective model and that the North-South W/ Tank was a secondary model to determine what flows would come down the adjacent subbasin if the tank were to remain in place during a flood event.

2. Section 4.1 first paragraph. Please consider rephrasing the language discussing the Piedmont Assessment and then later discussing unconfined channels. This could cause FEMA to start thinking this is a fan delineation.

3. Section 4.1 fifth paragraph, item 3. Please rephrase the discussion of the "do nothing" scenario. This TDN is to provide the hydrology supporting the floodplain delineation. "Do nothing scenarios" are not applicable. It may be better to state the future hydrology was developed for the planning portion of the overall study beyond the Floodplain study.

4. Section 4.1 fifth paragraph. Since the 3 items list what hydrology tasks were performed for the entire study it may be beneficial to add a sentence that only the existing condition models were used for the floodplain delineation and the future hydrology is provided in the TDN to have a consistent location for all hydrology performed for the study.

5. Section 4.2.5 Precipitation. Please add that the NOAA version being used is NOAA 14.

6. Section 4.3. This section states that flows leaving the watershed or draining to the FLO-2D as a special problem. I do not see this as a special problem, just a condition appearing in the study. Please revise.

7. Section 4.5.1 item c. Remove or re-phrase the "do-nothing" text based on comment 2 discussion above.

8. Section 4.5.2 item b. Please add that the higher precipitation was due to changes in areal reduction since Dibble's study focused on the upper watershed and the other studies analyzed the entire watershed.

9. Section 4.5.2 Typically, as part of the verification process the resulting effective discharges are compared to regression equations and unit discharge comparisons are made with other studies in the area. The tables comparing the Dibble study with the original studies satisfies the second but some discussion about how well they compare should be included in the text. Please perform a comparison with appropriate regional regression equations.

10. Figures 4.2-5 and 4.2-10,11,12. No basin labels were provided. Please include.

Appendices Comments

1. D.1. Please add the Isopluvial maps with the Rio Verde Watershed identified to support rainfall values chosen for PREFRE.

2. D.2. Please include the DDMSW Tables for subbasin data, soils data, and land use data in this section.

3. D.2. Please correct the North-North existing condition Green and Ampt Table. For B17W1 and B2W2 the values listed in the table do not match the model or the DDMSW information.

4. D.3. If at all possible, include a map showing the routing cross-section locations. These locations could be added to the Subbasin Map.

5. D.4. On Figure D4.1, consider presenting this figure on an 11x17 sheet. A scale needs to be provided so that the elevation and volume information can be verified. The red text used to represent the elevations is hard to read. Consider using a different color.

6. D.5. Please address the following comments:

    - Please include maps with photo and topo background showing the cross-section locations for each split. If this is not possible, do the 6 cross-section ids correlate with the floodplain cross-section locations? If so, please present a table correlating the 6 cross-section ids with the RM ids from the floodplain RAS modeling.
    - Text refers to "outlet". Modeling used "output". Please update text.
    - In the table D.5-1, several of the diversion TO locations are actually the locations of the continuing flow and not the diversion location listed in the DT record. Please update the record for Diversion 2, 3,4, and 5. See Modeling Concerns comment 2 also.

7. D.6. The south models do not match the run dates of the models provided on the cd. Please update the hardcopy models. A new run date for the digital models is expected due to the note changes required for the diversions in the south models. That updated model should be added to the TDN.

Exhibits

1. Subbasin Maps – The subbasin maps provided need some modification. Typically these maps are presented at a scale of 1:2000. However in Rio Verde a different scale may be necessary to reasonably show the topography and basin information. On this exhibit there should be (1) subbasin boundaries and ids, (2) flow paths and routing reaches (each should have different line type), (3) concentration points and ids, (4) basin centroid location (lag), (5) topography with index contours labeled and (6) roads and road alignments with ids or at least section lines and ids. Current maps are missing routes, roads, sections, and most importantly topo. No aerial photo background is necessary.

2. Soils Maps. Each subbasin needs to be labeled as shown on the Land Use Map. Since the Soil Map is color coded, the soil code could be left off of the map but remain in the legend.

3. Schematic Map. No schematic maps were provided. Please submit.

I have no more comments at this time.

APPENDIX C
Survey Field Notes

RIO VERDE AREA DRAINAGE MASTER PLAN (ADMP)
F.C.D. CONTRACT NO. 2001C056

APPENDIX D – HYDROLOGIC SUPPORTING DOCUMENTATION

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SECTION D.1 – PRECIPITATION DATA

D.1 PRECIPITATION DATA

D.1.1 North-North Basin - **TABLE D.1-1** shows the rainfall frequency analysis results from PREFRE program for North-North basin associated with input data as follows:

Primary Zone Number:	7
Short Duration Zone Number:	8
2-year, 6-hour Precipitation	1.62 inches
2-year, 24-hour Precipitation	2.20 inches
100-year, 6-hour Precipitation	3.48 inches
100-year, 24-hour Precipitation	4.65 inches

TABLE D.1-1
PREFRE OUTPUT FOR NORTH-NORTH BASIN

Duration	RETURN PERIOD					
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
5 MIN	0.38	0.46	0.52	0.60	0.67	0.74
10 MIN	0.57	0.70	0.79	0.92	1.03	1.13
15 MIN	0.69	0.87	0.99	1.17	1.31	1.45
30 MIN	0.91	1.16	1.34	1.58	1.78	1.97
1 HOUR	1.11	1.43	1.66	1.97	2.22	2.46
2 HOUR	1.29	1.65	1.90	2.26	2.53	2.81
3 HOUR	1.40	1.79	2.06	2.44	2.74	3.04
6 HOUR	1.62	2.06	2.37	2.80	3.14	3.48
12 HOUR	1.91	2.42	2.77	3.28	3.67	4.07
24 HOUR	2.20	2.78	3.18	3.76	4.20	4.65

D.1.2 North-South Basin - **TABLE D.1-2** shows the rainfall frequency analysis results from PREFRE program for North-South basin associated with input data as follows:

Primary Zone Number:	7
Short Duration Zone Number:	8
2-year, 6-hour Precipitation	1.62 inches
2-year, 24-hour Precipitation	2.15 inches
100-year, 6-hour Precipitation	3.48 inches
100-year, 24-hour Precipitation	4.63 inches

D.1 PRECIPITATION DATA

D.1.1 North-North Basin - **TABLE D.1-1** shows the rainfall frequency analysis results from PREFRE program for North-North basin associated with input data as follows:

Primary Zone Number:	7
Short Duration Zone Number:	8
2-year, 6-hour Precipitation	1.62 inches
2-year, 24-hour Precipitation	2.20 inches
100-year, 6-hour Precipitation	3.48 inches
100-year, 24-hour Precipitation	4.65 inches

TABLE D.1-1
PREFRE OUTPUT FOR NORTH-NORTH BASIN

Duration	RETURN PERIOD					
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
5 MIN	0.38	0.46	0.52	0.60	0.67	0.74
10 MIN	0.57	0.70	0.79	0.92	1.03	1.13
15 MIN	0.69	0.87	0.99	1.17	1.31	1.45
30 MIN	0.91	1.16	1.34	1.58	1.78	1.97
1 HOUR	1.11	1.43	1.66	1.97	2.22	2.46
2 HOUR	1.29	1.65	1.90	2.26	2.53	2.81
3 HOUR	1.40	1.79	2.06	2.44	2.74	3.04
6 HOUR	1.62	2.06	2.37	2.80	3.14	3.48
12 HOUR	1.91	2.42	2.77	3.28	3.67	4.07
24 HOUR	2.20	2.78	3.18	3.76	4.20	4.65

D.1.2 North-South Basin - **TABLE D.1-2** shows the rainfall frequency analysis results from PREFRE program for North-South basin associated with input data as follows:

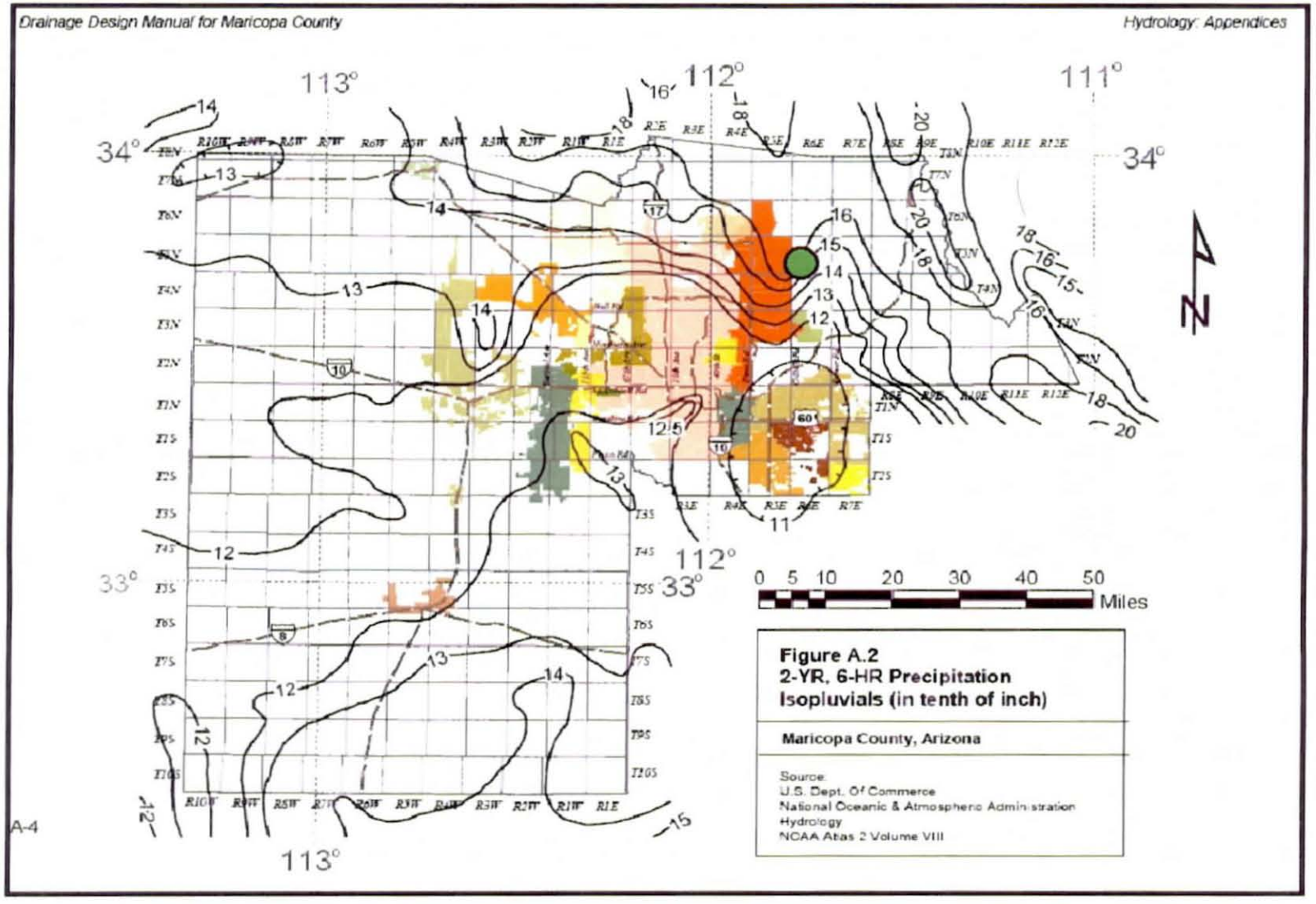
Primary Zone Number:	7
Short Duration Zone Number:	8
2-year, 6-hour Precipitation	1.62 inches
2-year, 24-hour Precipitation	2.15 inches
100-year, 6-hour Precipitation	3.48 inches
100-year, 24-hour Precipitation	4.63 inches

TABLE D.1-2 PREFRE OUTPUT FOR NORTH-SOUTH BASIN						
Duration	RETURN PERIOD					
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
5 MIN	0.39	0.47	0.52	0.61	0.68	0.74
10 MIN	0.58	0.71	0.80	0.93	1.03	1.14
15 MIN	0.71	0.88	1.00	1.18	1.32	1.46
30 MIN	0.93	1.18	1.35	1.59	1.79	1.98
1 HOUR	1.14	1.45	1.67	1.99	2.23	2.47
2 HOUR	1.30	1.66	1.91	2.26	2.54	2.81
3 HOUR	1.41	1.80	2.07	2.45	2.75	3.04
6 HOUR	1.62	2.06	2.37	2.80	3.14	3.48
12 HOUR	1.88	2.40	2.76	3.26	3.66	4.06
24 HOUR	2.15	2.74	3.15	3.73	4.18	4.63

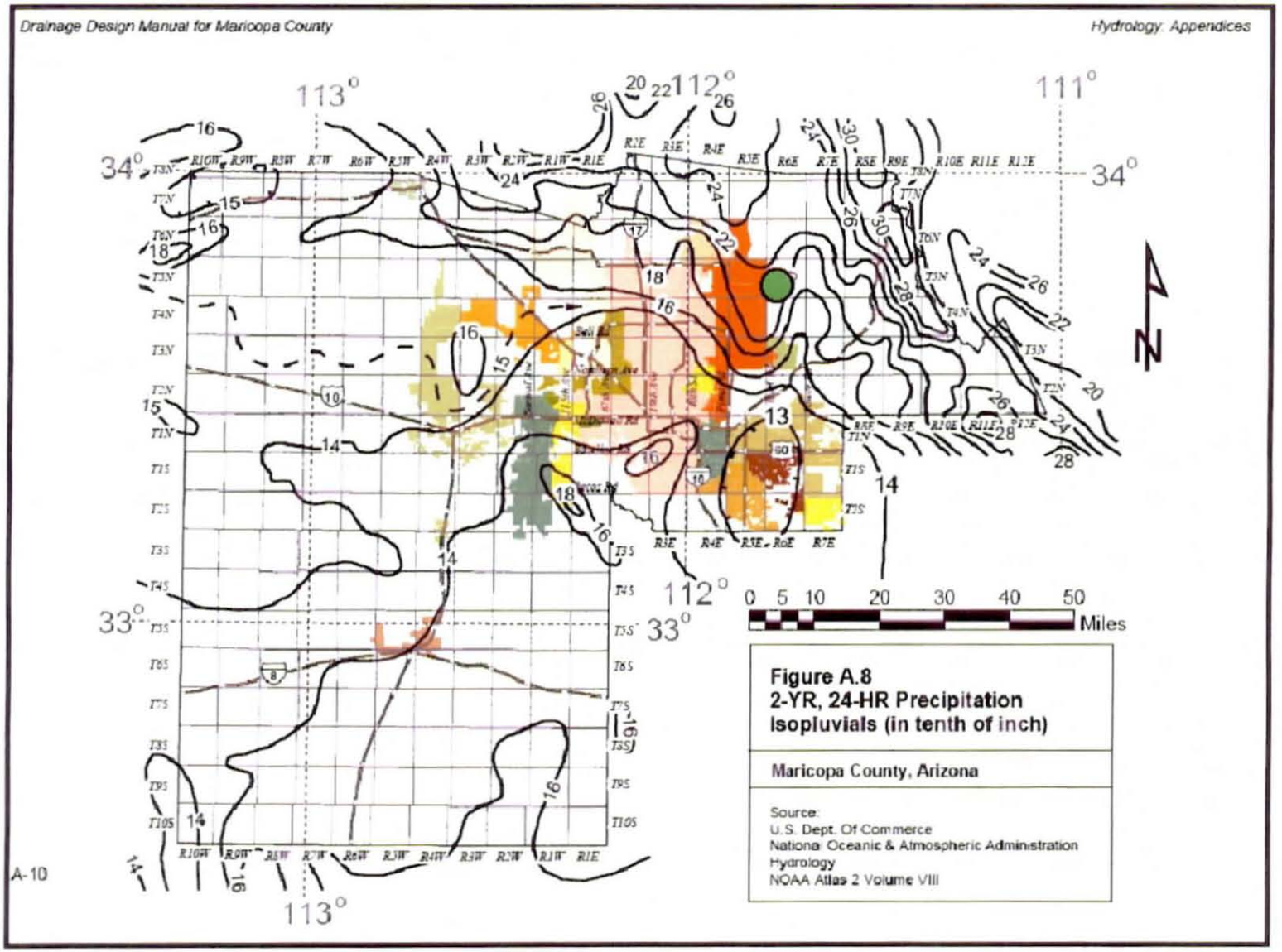
D.1.3 South Basin - **TABLE D.1-3** shows the rainfall frequency analysis results from PREFRE program for South basin associated with input data as follows:

Primary Zone Number:	7
Short Duration Zone Number:	8
2-year, 6-hour Precipitation	1.60 inches
2-year, 24-hour Precipitation	2.10 inches
100-year, 6-hour Precipitation	3.44 inches
100-year, 24-hour Precipitation	4.58 inches

TABLE D.1-3 PREFRE OUTPUT FOR SOUTH BASIN						
Duration	RETURN PERIOD					
	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
5 MIN	0.39	0.46	0.52	0.60	0.67	0.73
10 MIN	0.58	0.70	0.79	0.92	1.02	1.12
15 MIN	0.71	0.88	1.00	1.17	1.31	1.44
30 MIN	0.93	1.17	1.34	1.58	1.77	1.96
1 HOUR	1.14	1.45	1.66	1.97	2.21	2.44
2 HOUR	1.30	1.65	1.89	2.24	2.51	2.78
3 HOUR	1.40	1.78	2.05	2.42	2.72	3.01
6 HOUR	1.60	2.04	2.34	2.77	3.11	3.44
12 HOUR	1.85	2.36	2.72	3.22	3.62	4.01
24 HOUR	2.10	2.69	3.10	3.68	4.13	4.58



\FIGURE D.1-1
2-Year, 6-Hour Precipitation Isopluvial



\FIGURE D.1-2
2-Year, 24-Hour Precipitation Isopluvial

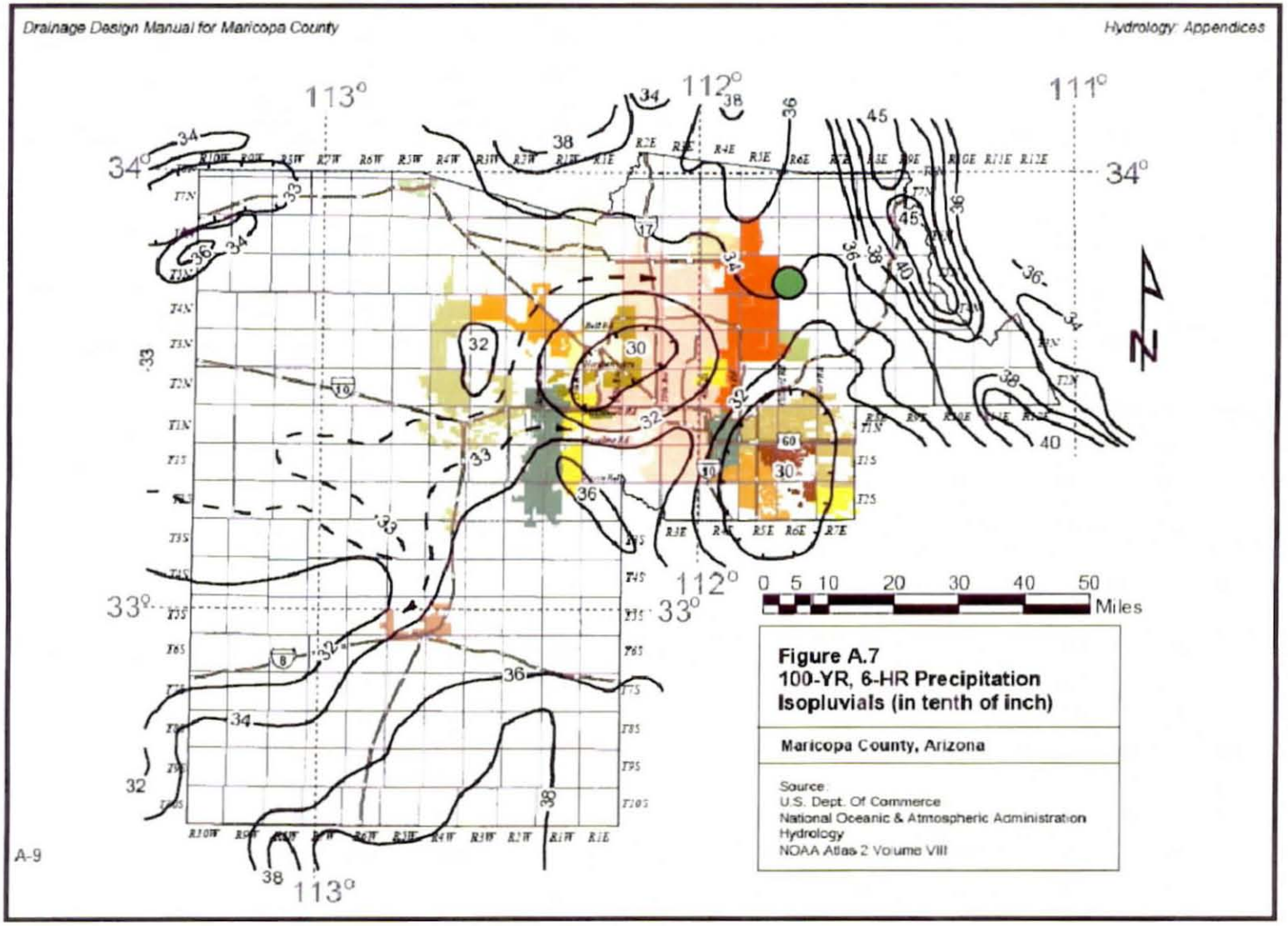


FIGURE D.1-3
100-Year, 6-Hour Precipitation Isopluvial

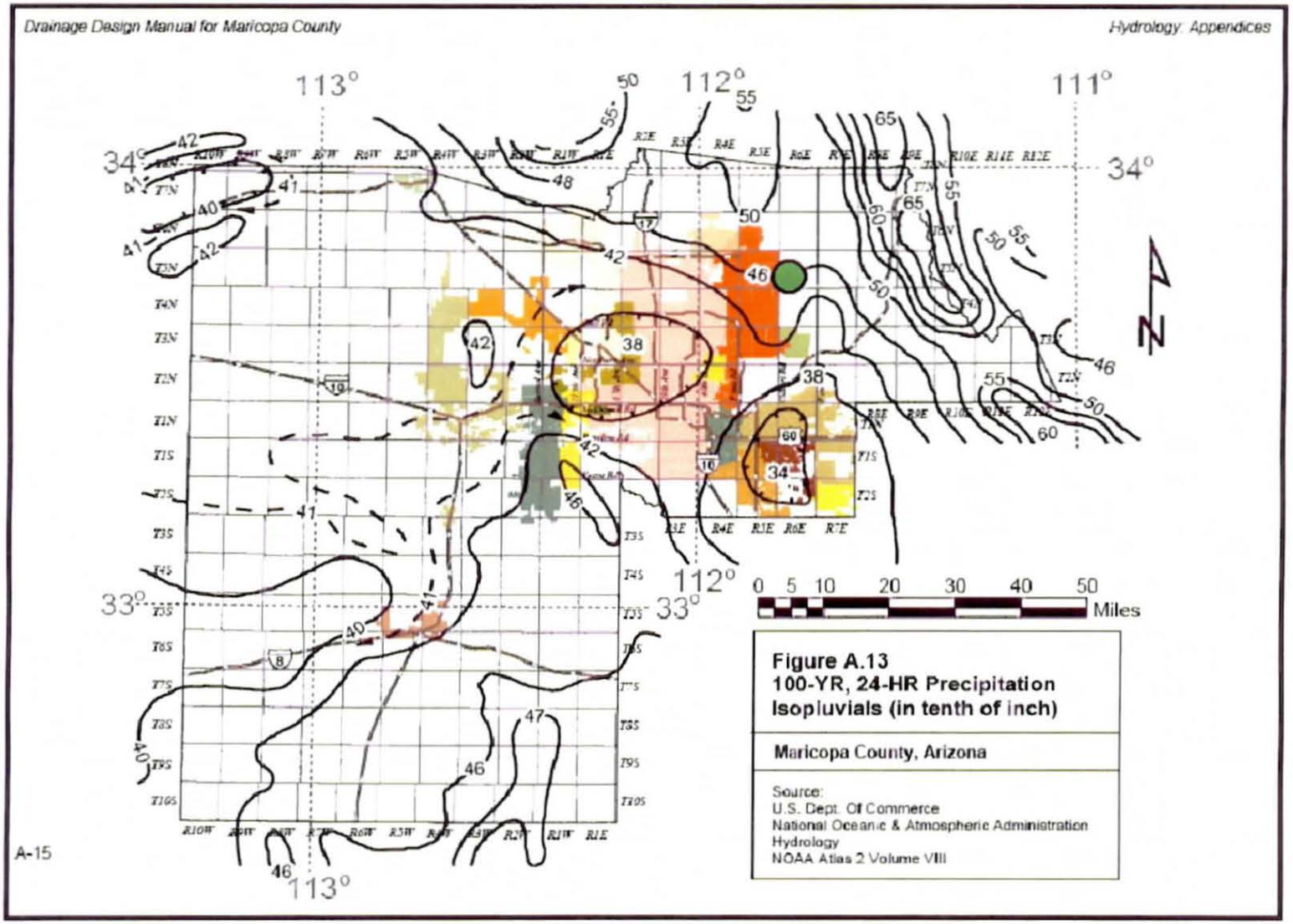


FIGURE D.1-3
100-Year, 24-Hour Precipitation Isopluvial

SECTION D.2 – PHYSICAL PARAMETER CALCULATIONS

D.2 PHYSICAL PARAMETER CALCULATIONS

D.2.1 Basin Data and Attributes

The summary table listing the physical parameters for the subbasins for the existing condition hydrologic models are provided in this section.

North-North Basin – **TABLE D.2-1** lists the evaluated basin data and attributes for the 54 subbasins for the existing condition.

North-South Basin – **TABLE D.2-2** lists the evaluated basin data and attributes for the 30 subbasins for the existing condition.

South Basin – **TABLE D.2-3** lists the evaluated basin data and attributes for the 36 subbasins for the existing condition.

TABLE D.2-1
Basin Data and Attributes for the North-North Subbasins

No.	Subbasin ID	Area	Flow Path Length	Slope	Lca
		(sq. mi)	(mi)	(ft/mi)	(mi)
(1)	(2)	(3)	(4)	(5)	(6)
1	B10W1	0.1219	1.001	191.86	0.501
2	B10W6A	0.1580	1.015	792.37	0.501
3	B10W6B	0.1643	1.213	681.15	0.584
4	B11W6	0.1633	0.936	149.51	0.482
5	B12W6	0.2287	1.211	151.98	0.606
6	B13W1	0.2100	1.522	189.19	0.863
7	B13W6A	0.1131	0.514	136.29	0.222
8	B13W6B	0.1914	1.361	135.23	0.511
9	B14W1	0.1435	1.280	204.68	0.584
10	B14W6	0.1066	0.840	145.23	0.385
11	B15W1	0.0243	0.411	350.75	0.186
12	B16W1	0.0150	0.357	313.84	0.159
13	B17W1	0.0104	0.304	358.54	0.120
14	B18W1	0.0490	0.662	244.69	0.294
15	B1W1	0.3325	1.814	123.51	1.033
16	B1W2	0.0791	1.047	145.15	0.535
17	B1W3	0.4508	1.980	127.25	0.896
18	B1W4A	0.1310	0.888	148.73	0.455
19	B1W4B	0.1165	1.019	147.27	0.452

TABLE D.2-1
Basin Data and Attributes for the North-North Subbasins

No.	Subbasin ID	Area	Flow Path Length	Slope	Lca
		(sq. mi)	(mi)	(ft/mi)	(mi)
(1)	(2)	(3)	(4)	(5)	(6)
20	B1W4C	0.1038	1.065	138.91	0.522
21	B1W5	0.2098	1.093	133.60	0.617
22	B1W6	0.5190	1.064	125.89	0.559
23	B2W1	0.1194	1.402	154.08	0.726
24	B2W2	0.1008	1.220	142.64	0.599
25	B2W4A	0.1239	1.459	127.50	0.751
26	B2W4B	0.1041	0.918	132.92	0.434
27	B2W4C	0.1320	1.890	133.30	0.843
28	B2W6	0.9575	2.492	156.48	1.197
29	B3W1	0.1355	1.164	168.39	0.543
30	B3W4	0.0937	0.914	135.60	0.370
31	B3W5	0.0798	0.684	152.02	0.379
32	B3W6	0.3610	2.128	290.40	1.075
33	B4W1	0.1427	0.986	156.14	0.560
34	B4W2	0.0963	0.791	182.11	0.359
35	B4W4	0.1919	1.592	123.14	0.881
36	B4W5	0.0709	0.841	149.88	0.381
37	B4W6A	0.2405	1.277	173.80	0.619
38	B4W6B	0.1890	1.120	208.95	0.459
39	B5W1	0.3847	2.790	164.89	1.394
40	B5W4A	0.0840	0.864	134.33	0.483
41	B5W4B	0.1518	1.448	134.02	0.609
42	B5W5	0.0849	1.086	141.75	0.648
43	B5W5A	0.1028	1.038	131.08	0.576
44	B5W6	0.3835	1.872	153.88	0.980
45	B6W1	0.1097	1.112	151.03	0.571
46	B6W5	0.1043	0.925	138.44	0.496
47	B6W6	0.2167	1.157	162.52	0.623
48	B7W1	0.1454	1.063	169.35	0.488
49	B7W5	0.1414	1.196	137.12	0.671
50	B7W6	0.2630	1.245	740.56	0.809
51	B8W1	0.1516	1.448	165.79	0.719
52	B8W6	0.1083	0.999	746.76	0.464
53	B9W1	0.1073	1.081	172.12	0.558
54	B9W6	0.5522	1.724	131.09	0.971

NOTE: The above parameter values were evaluated from GIS.

TABLE D.2-2
Basin Data and Attributes for the North-South Subbasins

No.	Subbasin ID	Area	Flow Path Length	Slope	Lca
		(sq. mi)	(mi)	(ft/mi)	(mi)
(1)	(2)	(3)	(4)	(5)	(6)
1	1B1	0.4935	1.4120	426.35	0.673
2	1B2	0.1607	2.1547	135.23	1.174
3	1B3	0.1294	1.0486	463.46	0.499
4	1B4	0.1411	1.4078	125.02	0.783
5	1N	0.1311	0.5826	1314.78	0.243
6	1S	0.1877	1.0165	515.51	0.480
7	2A	0.0309	0.6997	114.33	0.359
8	2B1	0.4717	1.5827	393.01	0.489
9	2B2	0.5328	2.2758	319.73	1.027
10	2B3	0.2590	1.2018	113.16	0.704
11	2B4	0.2117	1.4945	117.76	0.967
12	2B5	0.1247	0.7627	133.73	0.257
13	2B6	0.3077	1.1038	78.14	0.433
14	2N	0.2046	1.0995	345.61	0.538
15	2S	0.0921	0.9147	133.38	0.458
16	3B1	0.0983	1.4035	111.59	0.618
17	3B2	0.3416	1.9021	172.57	0.896
18	3N	0.1103	1.1666	392.60	0.646
19	3S	0.0871	0.9543	138.32	0.465
20	4A	0.0818	1.1219	133.70	0.567
21	4B1	0.3682	2.0183	125.85	0.936
22	4B2	0.2400	1.3594	117.70	0.663
23	4N	0.0741	0.8149	137.44	0.430
24	4N1	0.0499	0.8169	129.03	0.418
25	5B1	0.0994	0.9583	123.14	0.503
26	5B2	0.1245	1.2627	125.13	0.550
27	6B	0.2037	1.6136	123.95	0.912
28	8B1	0.0763	0.8255	123.56	0.394
29	8B2	0.0641	0.8611	127.59	0.462
30	9B	0.1998	1.5765	113.84	0.827

NOTE: The above parameter values were evaluated from GIS..

TABLE D.2-3
Basin Data and Attributes for the South Subbasins

No.	Subbasin ID	Area	Flow Path Length	Slope	Lca
		(sq. mi)	(mi)	(ft/mi)	(mi)
(1)	(2)	(3)	(4)	(5)	(6)
1	500A	0.2041	1.1157	124.58	0.5306
2	500B	0.1924	1.8112	118.71	0.8291
3	509A1	0.1926	1.4185	121.26	0.6897
4	509A2	0.1279	1.2821	130.25	0.6282
5	509A3	0.1621	1.0731	123.01	0.4765
6	509A4	0.0619	0.4930	105.49	0.2314
7	509A5	0.0204	0.4170	107.19	0.1821
8	509A6	0.0321	0.3687	94.37	0.1942
9	509B	0.6540	3.5765	123.02	1.5879
10	509D	0.3824	2.6554	126.16	1.0363
11	510A	0.9233	3.0034	112.87	1.5307
12	511A1	0.2940	1.4047	128.50	0.7194
13	511A2	0.0587	0.6564	123.40	0.3030
14	511A3	0.2942	1.2344	93.97	0.6424
15	511B1	0.5828	2.0693	107.77	1.0666
16	511B2	0.2221	1.6372	120.33	0.7832
17	511B3	0.0796	0.7288	116.62	0.4030
18	511B4	0.1942	1.2047	431.66	0.6005
19	511C1	0.3291	1.4737	101.78	0.8594
20	511C2	0.3923	1.7593	102.88	0.9492
21	511C3	0.1414	1.0161	125.98	0.5047
22	511C4	0.0200	0.3455	141.84	0.1818
23	511C5	0.1105	0.8606	130.38	0.3935
24	511C6	0.0349	0.5922	99.62	0.3036
25	511C7	0.1211	1.2201	120.48	0.5104
26	511C8	0.0406	0.3768	122.07	0.1988
27	511D	0.1210	1.1731	152.59	0.5384
28	511E1	0.2963	1.6118	147.66	0.8400
29	511E2	0.2760	1.6283	117.79	0.8708
30	511F	0.1573	0.9353	114.08	0.3978
31	511G1	0.3102	1.0731	276.58	0.5634
32	511G2	0.1573	0.9850	105.59	0.5243
33	511G3	0.0967	1.0645	105.21	0.4574
34	511G4	0.2984	1.3941	121.94	0.7692
35	511H	0.3029	1.3558	102.52	0.7830
36	511I	0.1980	1.1046	123.84	0.6190

D.2.2 Green-Ampt Parameters

(a) Existing Condition - The summary table listing the physical parameters for the subbasins for the existing condition hydrologic models are provided in this section.

North-North Basin – **TABLE D.2-4** lists the evaluated Green-Ampt parameters for the 52 subbasins for the existing condition.

North-South Basin – **TABLE D.2-5** lists the evaluated Green-Ampt parameters for the 29 subbasins for the existing condition.

South Basin – **TABLE D.2-6** lists the evaluated Green-Ampt parameters for the 35 subbasins for the existing condition.

TABLE D.2-4
Greent-Ampt Parameter Values for the North-North Subbasins
(Existing Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	B1W1	0.15	0.39	5.7	0.20	0
2	B1W2	0.15	0.39	5.8	0.19	0
3	B1W3	0.15	0.35	4.9	0.29	0
4	B1W5	0.15	0.39	6.2	0.17	0
5	B1W6	0.15	0.40	6.0	0.18	0
6	B2W1	0.15	0.39	6.2	0.17	0
7	B2W2	0.15	0.39	5.70	0.20	0
8	B2W6	0.15	0.37	5.2	0.25	1
9	B3W1	0.15	0.40	6.0	0.18	0
10	B3W4	0.15	0.36	5.0	0.28	0
11	B3W5	0.15	0.36	5.0	0.28	0
12	B3W6	0.15	0.40	6.0	0.18	2
13	B4W1	0.15	0.39	6.2	0.17	0
14	B4W2	0.15	0.39	5.7	0.20	0
15	B4W4	0.15	0.35	4.5	0.36	0
16	B4W5	0.15	0.36	5.0	0.28	0
17	B5W1	0.15	0.39	5.8	0.19	0
18	B5W5	0.15	0.37	5.3	0.24	0
19	B5W6	0.15	0.39	6.2	0.17	21
20	B6W1	0.15	0.35	4.5	0.36	0
21	B6W5	0.15	0.35	4.7	0.31	0

TABLE D.2-4
Greent-Ampt Parameter Values for the North-North Subbasins
(Existing Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
22	B6W6	0.15	0.38	5.4	0.23	9
23	B7W1	0.15	0.38	5.4	0.23	0
24	B7W5	0.15	0.36	5.1	0.26	0
25	B7W6	0.15	0.39	6.2	0.16	28
26	B8W1	0.15	0.39	5.8	0.19	0
27	B8W6	0.15	0.40	6.0	0.17	21
28	B9W1	0.15	0.35	3.74	0.55	0
29	B9W6	0.15	0.35	4.8	0.30	1
30	B10W1	0.15	0.39	5.8	0.19	0
31	B11W6	0.15	0.39	6.2	0.17	0
32	B12W6	0.15	0.37	5.2	0.25	0
33	B13W1	0.15	0.35	4.8	0.30	0
34	B13W6A	0.15	0.35	4.8	0.30	0
35	B13W6B	0.15	0.38	5.4	0.23	0
36	B14W1	0.15	0.39	6.2	0.17	0
37	B14W6	0.15	0.36	5.0	0.28	0
38	B15W1	0.15	0.38	6.4	0.16	0
39	B16W1	0.15	0.39	6.2	0.17	0
40	B17W1	0.15	0.40	6.0	0.18	0
41	B18W1	0.15	0.38	6.4	0.16	0
42	B1W4A	0.15	0.38	5.6	0.22	0
43	B1W4B	0.15	0.36	5.0	0.28	0
44	B1W4C	0.15	0.36	5.0	0.28	0
45	B2W4A	0.15	0.36	5.0	0.28	0
46	B2W4B	0.15	0.35	4.8	0.30	0
47	B2W4C	0.15	0.35	4.8	0.30	0
48	B4W6A	0.15	0.40	6.0	0.18	2
49	B4W6B	0.15	0.40	6.0	0.17	19
50	B5W4A	0.15	0.37	5.3	0.24	0
51	B5W4B	0.15	0.35	4.55	0.35	0
52	B5W5A	0.15	0.35	4.8	0.30	0
53	B10W6A	0.15	0.39	6.2	0.16	24
54	B10W6B	0.15	0.40	6.0	0.18	12

NOTE: The above parameter values for the LG card were evaluated by DDMSW.

TABLE D.2-5
Greent-Ampt Parameter Values for the North-South Subbasins
(Existing Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1B1	0.15	0.40	6.0	0.18	4
2	1B2	0.15	0.38	5.6	0.22	0
3	1B3	0.15	0.40	6.0	0.18	11
4	1B4	0.15	0.39	5.8	0.19	0
5	1N	0.15	0.39	6.2	0.17	25
6	1S	0.15	0.39	6.2	0.17	22
7	2A	0.15	0.39	6.2	0.17	0
8	2B1	0.15	0.40	6.0	0.18	1
9	2B2	0.15	0.39	5.7	0.20	1
10	2B3	0.15	0.40	6.0	0.18	0
11	2B4	0.15	0.40	6.0	0.18	0
12	2B5	0.15	0.37	6.6	0.14	7
13	2B6	0.15	0.38	6.4	0.16	13
14	2N	0.15	0.40	6.0	0.18	14
15	2S	0.15	0.38	5.6	0.22	1
16	3B1	0.15	0.36	5.0	0.28	0
17	3B2	0.15	0.39	5.7	0.20	3
18	3N	0.15	0.39	6.2	0.17	20
19	3S	0.14	0.37	5.3	0.24	2
20	4A	0.15	0.39	5.8	0.19	6
21	4B1	0.15	0.38	5.4	0.23	0
22	4B2	0.15	0.36	5.0	0.28	0
23	4N	0.13	0.36	6.8	0.12	6
24	4N1	0.15	0.38	5.6	0.22	2
25	5B1	0.15	0.32	7.6	0.10	0
26	5B2	0.15	0.35	7.0	0.12	0
27	6B	0.15	0.36	6.8	0.13	3
28	8B1	0.14	0.36	5.0	0.27	3
29	8B2	0.15	0.36	5.0	0.27	1
30	9B	0.14	0.36	5.0	0.27	2

NOTE: The above parameter values for the LG card were evaluated by DDMSW.

TABLE D.2-6
Greent-Ampt Parameter Values for the South Subbasins
(Existing Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	500A	0.15	0.37	5.2	0.25	1
2	500B	0.12	0.37	5.3	0.22	8
3	509A1	0.14	0.38	6.4	0.15	5
4	509A2	0.13	0.36	6.8	0.12	6
5	509A3	0.14	0.38	6.4	0.15	4
6	509A4	0.15	0.36	6.8	0.13	1
7	509A5	0.12	0.36	5.1	0.24	9
8	509A6	0.15	0.32	7.6	0.10	0
9	509B	0.15	0.36	5.1	0.26	0
10	509D	0.14	0.40	6.0	0.22	0
11	510A	0.12	0.39	6.2	0.15	10
12	511A1	0.15	0.39	6.2	0.17	0
13	511A2	0.15	0.40	6.0	0.18	0
14	511A3	0.15	0.39	6.2	0.17	0
15	511B1	0.15	0.38	6.4	0.16	4
16	511B2	0.15	0.38	6.4	0.16	0
17	511B3	0.15	0.37	6.6	0.14	0
18	511B4	0.15	0.36	6.8	0.13	12
19	511C1	0.15	0.40	6.0	0.18	0
20	511C2	0.15	0.40	6.0	0.18	0
21	511C3	0.15	0.40	6.0	0.18	0
22	511C4	0.15	0.40	6.0	0.18	0
23	511C5	0.15	0.35	7.0	0.12	0
24	511C6	0.15	0.35	7.0	0.12	0
25	511C7	0.14	0.39	6.2	0.16	7
26	511C8	0.15	0.37	5.2	0.25	0
27	511D	0.15	0.36	6.8	0.13	0
28	511E1	0.15	0.40	6.0	0.18	0
29	511E2	0.15	0.36	6.8	0.13	1
30	511F	0.14	0.38	6.4	0.15	4
31	511G1	0.15	0.38	5.6	0.22	8
32	511G2	0.15	0.37	5.3	0.24	0
33	511G3	0.15	0.36	5.0	0.28	0
34	511G4	0.15	0.35	4.65	0.32	1
35	511H	0.15	0.35	4.4	0.38	1
36	511I	0.14	0.35	4.1	0.44	2

NOTE: The above parameter values for the LG card were evaluated by DDMSW.

(b) Future Condition - The summary table listing the physical parameters for the subbasins for the future condition hydrologic models are provided below:

North-North Basin – **TABLE D.2-7** lists the evaluated Green-Ampt parameters for the 52 subbasins for the future condition.

North-South Basin – **TABLE D.2-8** lists the evaluated Green-Ampt parameters for the 29 subbasins for the future condition.

South Basin – **TABLE D.2-9** lists the evaluated Green-Ampt parameters for the 35 subbasins for the future condition.

TABLE D.2-7
Greent-Ampt Parameter Values for the North-North Subbasins
(Future Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	B10W1	0.13	0.39	5.8	0.18	6
2	B10W6A	0.11	0.39	6.2	0.14	37
3	B10W6B	0.10	0.40	6.0	0.15	26
4	B11W6	0.10	0.39	6.2	0.14	15
5	B12W6	0.10	0.37	5.2	0.21	15
6	B13W1	0.15	0.35	4.8	0.30	0
7	B14W1	0.15	0.39	6.2	0.17	0
8	B14W6	0.10	0.36	5.0	0.23	15
9	B15W1	0.15	0.38	6.4	0.16	0
10	B16W1	0.15	0.39	6.2	0.17	0
11	B17W1	0.35	0.39	6.1	0.14	0
12	B18W1	0.15	0.38	6.4	0.16	0
13	B1W1	0.15	0.39	5.7	0.20	0
14	B1W2	0.14	0.39	5.8	0.18	4
15	B1W3	0.15	0.35	4.9	0.29	1
16	B1W4A	0.10	0.38	5.6	0.18	15
17	B1W4B	0.10	0.36	5,0	0.23	15
18	B1W4C	0.10	0.36	5.0	0.23	15
19	B1W5	0.15	0.39	6.2	0.17	0
20	B1W6	0.10	0.40	6.0	0.15	15
21	B2W1	0.15	0.39	6.2	0.17	0
22	B2W2	0.35	0.38	5.6	0.17	0
23	B2W4A	0.10	0.36	5.0	0.23	15
24	B2W4B	0.10	0.35	4.8	0.25	14

TABLE D.2-7
Greent-Ampt Parameter Values for the North-North Subbasins
(Future Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
25	B2W4C	0.14	0.35	4.8	0.29	2
26	B2W6	0.11	0.37	5.2	0.22	12
27	B3W1	0.15	0.40	6.0	0.18	0
28	B3W4	0.10	0.36	5.0	0.23	14
29	B3W5	0.15	0.36	5.0	0.28	0
30	B3W6	0.10	0.4	6.0	0.15	17
31	B4W1	0.15	0.39	6.2	0.17	0
32	B4W2	0.15	0.39	5.7	0.20	1
33	B4W4	0.15	0.35	4.5	0.36	0
34	B4W5	0.15	0.36	5.0	0.28	0
35	B4W6A	0.10	0.40	6.0	0.15	17
36	B4W6B	0.11	0.40	6.0	0.15	31
37	B5W1	0.15	0.39	5.8	0.19	0
38	B5W4A	0.13	0.37	5.3	0.23	5
39	B5W4B	0.15	0.35	4.55	0.35	0
40	B5W5	0.15	0.37	5.3	0.24	0
41	B5W5A	0.15	0.35	4.8	0.30	0
42	B5W6	0.10	0.39	6.2	0.14	35
43	B6W1	0.15	0.35	4.5	0.35	1
44	B6W5	0.15	0.35	4.7	0.31	0
45	B6W6	0.10	0.38	5.4	0.19	24
46	B7W1	0.15	0.38	5.4	0.23	0
47	B7W5	0.15	0.36	5.1	0.26	0
48	B7W6	0.12	0.39	6.2	0.14	37
49	B8W1	0.15	0.39	5.8	0.19	0
50	B8W6	0.11	0.4.0	6.0	0.15	34
51	B9W1	0.12	0.35	3.74	0.50	9
52	B9W6	0.10	0.35	4.8	0.25	15
53	B13W6A	0.14	0.35	4.8	0.29	3
54	B13W6B	0.12	0.38	5.4	0.21	8

NOTE: The above parameter values for the LG card were evaluated by DDMSW.

TABLE D.2-8
Greent-Ampt Parameter Values for the North-South Subbasins
(Future Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1B1	0.1	0.40	6.0	0.15	19
2	1B2	0.1	0.38	5.6	0.18	15
3	1B3	0.1	0.40	6.0	0.15	26
4	1B4	0.1	0.39	5.8	0.16	15
5	1N	0.1	0.39	6.2	0.14	40
6	1S	0.1	0.39	6.2	0.14	37
7	2A	0.1	0.39	6.2	0.14	15
8	2B1	0.1	0.40	6.0	0.15	16
9	2B2	0.1	0.39	5.7	0.17	16
10	2B3	0.1	0.40	6.0	0.15	15
11	2B4	0.1	0.40	6.0	0.15	15
12	2B5	0.1	0.37	6.6	0.12	22
13	2B6	0.1	0.38	6.4	0.13	28
14	2N	0.1	0.40	6.0	0.15	29
15	2S	0.1	0.38	5.6	0.18	16
16	3B1	0.1	0.36	5.0	0.23	15
17	3B2	0.1	0.39	5.7	0.17	18
18	3N	0.1	0.39	6.2	0.14	35
19	3S	0.1	0.37	5.3	0.20	15
20	4A	0.1	0.39	5.8	0.16	21
21	4B1	0.1	0.38	5.4	0.19	15
22	4B2	0.1	0.36	5.0	0.23	15
23	4N	0.1	0.36	6.8	0.11	15
24	4N1	0.1	0.38	5.6	0.18	17
25	5B1	0.1	0.32	7.6	0.08	15
26	5B2	0.1	0.35	7.0	0.10	15
27	6B	0.1	0.36	6.8	0.11	18
28	8B1	0.1	0.36	5.0	0.23	15
29	8B2	0.1	0.36	5.0	0.23	15
30	9B	0.1	0.36	5.0	0.23	15

NOTE: The above parameter values for the LG card were evaluated by DDMSW.

TABLE D.2-9
Greent-Ampt Parameter Values for the South Subbasins
(Future Condition)

No.	Subbasin ID	Parameter Values for the LG Card				
		IA	THETA	PSIF	XKSAT	RTIMP
		(in)	(-)	(inches)	(in/hr)	(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	500A	0.1	0.37	5.2	0.21	15
2	500B	0.1	0.37	5.3	0.20	15
3	509A1	0.1	0.38	6.4	0.13	15
4	509A2	0.1	0.36	6.8	0.11	15
5	509A3	0.1	0.38	6.4	0.13	15
6	509A4	0.1	0.36	6.8	0.11	15
7	509A5	0.1	0.36	5.1	0.22	15
8	509A6	0.15	0.32	7.6	0.08	15
9	509B	0.1	0.36	5.1	0.22	15
10	509D	0.14	0.40	6.0	0.22	0
11	510A	0.1	0.39	6.2	0.14	15
12	511A1	0.1	0.39	6.2	0.14	15
13	511A2	0.1	0.40	6.0	0.15	15
14	511A3	0.1	0.39	6.2	0.14	15
15	511B1	0.1	0.38	6.4	0.13	19
16	511B2	0.1	0.38	6.4	0.13	15
17	511B3	0.1	0.37	6.6	0.12	15
18	511B4	0.1	0.36	6.8	0.11	27
19	511C1	0.1	0.40	6.0	0.15	15
20	511C2	0.1	0.40	6.0	0.15	15
21	511C3	0.1	0.40	6.0	0.15	15
22	511C4	0.1	0.40	6.0	0.15	15
23	511C5	0.1	0.35	7.0	0.10	15
24	511C6	0.1	0.35	7.0	0.10	15
25	511C7	0.1	0.39	6.2	0.14	17
26	511C8	0.1	0.37	5.2	0.21	15
27	511D	0.1	0.36	6.8	0.11	15
28	511E1	0.1	0.40	6.0	0.15	15
29	511E2	0.1	0.36	6.8	0.11	15
30	511F	0.1	0.38	6.4	0.13	15
31	511G1	0.1	0.38	5.6	0.18	23
32	511G2	0.1	0.37	5.3	0.20	15
33	511G3	0.1	0.36	5.0	0.23	15
34	511G4	0.1	0.35	4.65	0.27	15
35	511H	0.1	0.35	4.4	0.32	15
36	511I	0.1	0.35	4.1	0.38	15

NOTE: The above parameter values for the LG card were evaluated by DDMSW.

D.2.3 DDMSW MODEL DATA

(a) Subbasin Model Data – The DDMSW model data for the North-North, North-South, and South Basins are tabulated as follows:

TABLE D.2-9
DDMSW Model Subbasin Data

No.	Basin	Condition	Table Reference
(1)	(2)	(3)	(4)
1	North-North	Existing Condition	TABLE D.2-9A
2	North-North	Future Condition	TABLE D.2-9B
3	North-South	Existing Condition	TABLE D.2-9C
4	North-South	Future Condition	TABLE D.2-9D
5	South	Existing Condition	TABLE D.2-9E
6	South	Future Condition	TABLE D.2-9F

(b) Soils Model Data – The DDMSW model data for the North-North, North-South, and South Basins are tabulated as follows:

TABLE D.2-10
DDMSW Model Soils Data

No.	Basin	Condition	Table Reference
(1)	(2)	(3)	(4)
1	North-North	Existing & Future	TABLE D.2-10A
2	North-South	Existing & Future	TABLE D.2-10B
3	South	Existing & Future	TABLE D.2-10C

(c) Land Use Model Data – The DDMSW model data for the North-North, North-South, and South Basins are tabulated as follows:

TABLE D.2-11
DDMSW Model Land Use Data

No.	Basin	Condition	Table Reference
(1)	(2)	(3)	(4)
1	North-North	Existing Condition	TABLE D.2-11A
2	North-North	Future Condition	TABLE D.2-11B
3	North-South	Existing Condition	TABLE D.2-11C
4	North-South	Future Condition	TABLE D.2-11D
5	South	Existing Condition	TABLE D.2-11E
6	South	Future Condition	TABLE D.2-11F

Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Sub Basin Data – EXISTING CONDITION

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Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt
Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
B10W1	0.12	1.00	191.9	Mountain	0.50	20	0.050	4.40	0.15	0.39	5.80	0.19	
B10W6A	0.16	1.02	792.4	Mountain	0.50	16	0.052	5.58	0.15	0.39	6.20	0.16	24
B10W6B	0.16	1.21	681.2	Mountain	0.58	19	0.051	5.62	0.15	0.40	6.00	0.18	12
B11W6	0.16	0.94	149.5	Mountain	0.48	21	0.050	3.92	0.15	0.39	6.20	0.17	
B12W6	0.23	1.21	152.0	Mountain	0.61	25	0.050	4.26	0.15	0.37	5.20	0.25	
B13W1	0.21	1.52	189.2	Mountain	0.86	29	0.050	4.62	0.15	0.35	4.80	0.30	
B14W1	0.14	1.28	204.7	Mountain	0.58	23	0.050	4.90	0.15	0.39	6.20	0.17	
B14W6	0.11	0.84	145.2	Mountain	0.38	18	0.050	4.11	0.15	0.36	5.00	0.28	
B15W1	0.02	0.41	350.8	Mountain	0.19	9	0.050	4.02	0.15	0.38	6.40	0.16	
B16W1	0.02	0.36	313.8	Mountain	0.16	8	0.050	3.93	0.15	0.39	6.20	0.17	
B17W1	0.01	0.30	358.5	Mountain	0.12	7	0.050	3.82	0.15	0.40	6.00	0.18	
B18W1	0.05	0.66	244.7	Mountain	0.29	14	0.050	4.16	0.15	0.38	6.40	0.16	
B1W1	0.33	1.81	123.5	Mountain	1.03	37	0.050	4.31	0.15	0.39	5.70	0.20	
B1W2	0.08	1.05	145.1	Mountain	0.54	23	0.050	4.01	0.15	0.39	5.80	0.19	
B1W3	0.45	1.98	127.3	Mountain	0.90	36	0.050	4.84	0.15	0.35	4.90	0.29	
B1W4A	0.13	0.89	148.7	Mountain	0.45	20	0.050	3.91	0.15	0.38	5.60	0.22	
B1W4B	0.12	1.02	147.3	Mountain	0.45	21	0.050	4.27	0.15	0.36	5.00	0.28	
B1W4C	0.10	1.07	138.9	Mountain	0.52	23	0.050	4.07	0.15	0.36	5.00	0.28	
B1W5	0.21	1.09	133.6	Mountain	0.62	25	0.050	3.85	0.15	0.39	6.20	0.17	
B1W6	0.52	1.06	125.9	Mountain	0.56	24	0.050	3.90	0.15	0.40	6.00	0.18	
B2W1	0.12	1.40	154.1	Mountain	0.73	28	0.050	4.41	0.15	0.39	6.20	0.17	
B2W2	0.10	1.22	142.6	Mountain	0.60	25	0.050	4.29	0.15	0.39	5.70	0.20	
B2W4A	0.12	1.46	127.5	Mountain	0.75	30	0.050	4.28	0.15	0.36	5.00	0.28	
B2W4B	0.10	0.92	132.9	Mountain	0.43	20	0.050	4.04	0.15	0.35	4.80	0.30	
B2W4C	0.13	1.89	133.3	Mountain	0.84	34	0.050	4.89	0.15	0.35	4.80	0.30	
B2W6	0.96	2.49	156.5	Mountain	1.20	42	0.050	5.22	0.15	0.37	5.20	0.25	1
B3W1	0.14	1.16	168.4	Mountain	0.54	23	0.050	4.45	0.15	0.40	6.00	0.18	
B3W4	0.09	0.91	135.6	Mountain	0.37	19	0.050	4.23	0.15	0.36	5.00	0.28	
B3W5	0.08	0.68	152.0	Mountain	0.38	17	0.050	3.54	0.15	0.36	5.00	0.28	
B3W6	0.36	2.13	290.4	Mountain	1.08	34	0.050	5.51	0.15	0.40	6.00	0.18	2
B4W1	0.14	0.99	156.1	Mountain	0.56	22	0.050	3.94	0.15	0.39	6.20	0.17	
B4W2	0.10	0.79	182.1	Mountain	0.36	17	0.050	4.09	0.15	0.39	5.70	0.20	
B4W4	0.19	1.59	123.1	Mountain	0.88	33	0.050	4.25	0.15	0.35	4.50	0.36	
B4W5	0.07	0.84	149.9	Mountain	0.38	18	0.050	4.11	0.15	0.36	5.00	0.28	
B4W6A	0.24	1.28	173.8	Mountain	0.62	25	0.050	4.50	0.15	0.40	6.00	0.18	2
B4W6B	0.19	1.12	209.0	Mountain	0.46	21	0.053	4.69	0.15	0.40	6.00	0.17	19
B5W1	0.39	2.79	164.9	Mountain	1.39	46	0.050	5.34	0.15	0.39	5.80	0.19	
B5W4A	0.08	0.86	134.3	Mountain	0.48	20	0.050	3.80	0.15	0.37	5.30	0.24	
B5W4B	0.15	1.45	134.0	Mountain	0.61	27	0.050	4.72	0.15	0.35	4.55	0.35	
B5W5	0.09	1.09	141.8	Mountain	0.65	25	0.050	3.82	0.15	0.37	5.30	0.24	
B5W5A	0.10	1.04	131.1	Mountain	0.58	24	0.050	3.81	0.15	0.35	4.80	0.30	
B5W6	0.38	1.87	153.9	Mountain	0.98	35	0.050	4.71	0.15	0.39	6.20	0.17	21
B6W1	0.11	1.11	151.0	Mountain	0.57	23	0.050	4.25	0.15	0.35	4.50	0.36	
B6W5	0.10	0.93	138.4	Mountain	0.50	21	0.050	3.88	0.15	0.35	4.70	0.31	
B6W6	0.22	1.08	168.1	Mountain	0.55	22	0.050	4.33	0.15	0.38	5.40	0.23	9
B7W1	0.15	1.06	169.3	Mountain	0.49	21	0.050	4.45	0.15	0.38	5.40	0.23	

TA[illegible]D.2-9A

Flood Control District of Maricopa County

Rio Verde ADMP - North North Hydrology Model

Sub Basin Data – EXISTING CONDITION

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Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt

Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
B7W5	0.14	1.20	137.1	Mountain	0.67	26	0.050	4.05	0.15	0.36	5.10	0.26	
B7W6	0.26	1.25	740.6	Mountain	0.81	22	0.053	4.98	0.15	0.39	6.20	0.16	28
B8W1	0.15	1.45	165.8	Mountain	0.72	28	0.050	4.55	0.15	0.39	5.80	0.19	
B8W6	0.11	1.00	746.8	Mountain	0.46	16	0.052	5.49	0.15	0.40	6.00	0.17	21
B9W1	0.11	1.08	172.1	Mountain	0.56	22	0.050	4.32	0.15	0.35	3.74	0.55	
B9W6	0.55	1.73	131.0	Mountain	0.97	35	0.050	4.34	0.15	0.35	4.80	0.30	1
B13W6A	0.11	0.51	136.3	Mountain	0.22	12	0.050	3.77	0.15	0.35	4.80	0.30	
B13W6B	0.19	1.36	135.2	Mountain	0.51	25	0.050	4.79	0.15	0.38	5.40	0.23	

TA[illegible] D.2-9B

Flood Control District of Maricopa County

Rio Verde ADMP - North North Hydrology Model

Sub Basin Data – FUTURE CONDITION

8/1/2006

Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt

Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
B10W1	0.12	1.00	191.9	Mountain	0.50	20	0.048	4.40	0.13	0.39	5.80	0.18	6
B10W6A	0.16	1.02	792.4	Mountain	0.50	15	0.047	5.95	0.11	0.39	6.20	0.14	37
B10W6B	0.16	1.21	681.2	Mountain	0.58	17	0.046	6.28	0.10	0.40	6.00	0.15	26
B11W6	0.16	0.94	149.5	Mountain	0.48	18	0.045	4.58	0.10	0.39	6.20	0.14	15
B12W6	0.23	1.21	152.0	Mountain	0.61	22	0.045	4.84	0.10	0.37	5.20	0.21	15
B13W1	0.21	1.52	189.2	Mountain	0.86	29	0.050	4.62	0.15	0.35	4.80	0.30	
B14W1	0.14	1.28	204.7	Mountain	0.58	23	0.050	4.90	0.15	0.39	6.20	0.17	
B14W6	0.11	0.84	145.2	Mountain	0.38	16	0.045	4.62	0.10	0.36	5.00	0.23	15
B15W1	0.02	0.41	350.8	Mountain	0.19	9	0.050	4.02	0.15	0.38	6.40	0.16	
B16W1	0.02	0.36	313.8	Mountain	0.16	8	0.050	3.93	0.15	0.39	6.20	0.17	
B17W1	0.01	0.30	358.5	Mountain	0.12	7	0.050	3.82	0.15	0.40	6.00	0.18	
B18W1	0.05	0.66	244.7	Mountain	0.29	14	0.050	4.16	0.15	0.38	6.40	0.16	
B1W1	0.33	1.81	123.5	Mountain	1.03	37	0.050	4.31	0.15	0.39	5.70	0.20	
B1W2	0.08	1.05	145.1	Mountain	0.54	22	0.049	4.19	0.14	0.39	5.80	0.18	4
B1W3	0.45	1.98	127.3	Mountain	0.90	36	0.050	4.84	0.15	0.35	4.90	0.29	1
B1W4A	0.13	0.89	148.7	Mountain	0.45	18	0.045	4.34	0.10	0.38	5.60	0.18	15
B1W4B	0.12	1.02	147.3	Mountain	0.45	19	0.045	4.72	0.10	0.36	5.00	0.23	15
B1W4C	0.10	1.07	138.9	Mountain	0.52	20	0.045	4.69	0.10	0.36	5.00	0.23	15
B1W5	0.21	1.09	133.6	Mountain	0.62	25	0.050	3.85	0.15	0.39	6.20	0.17	
B1W6	0.52	1.06	125.9	Mountain	0.56	21	0.045	4.46	0.10	0.40	6.00	0.15	15
B2W1	0.12	1.40	154.1	Mountain	0.73	28	0.050	4.41	0.15	0.39	6.20	0.17	
B2W2	0.10	1.22	142.6	Mountain	0.60	25	0.050	4.29	0.15	0.39	5.70	0.20	1
B2W4A	0.12	1.46	127.5	Mountain	0.75	27	0.045	4.76	0.10	0.36	5.00	0.23	15
B2W4B	0.10	0.92	132.9	Mountain	0.43	18	0.045	4.49	0.10	0.35	4.80	0.25	14
B2W4C	0.13	1.89	133.3	Mountain	0.84	33	0.049	5.04	0.14	0.35	4.80	0.29	2
B2W6	0.96	2.49	156.5	Mountain	1.20	39	0.047	5.62	0.11	0.37	5.20	0.22	12
B3W1	0.14	1.16	168.4	Mountain	0.54	23	0.050	4.45	0.15	0.40	6.00	0.18	
B3W4	0.09	0.91	135.6	Mountain	0.37	17	0.045	4.73	0.10	0.36	5.00	0.23	14
B3W5	0.08	0.68	152.0	Mountain	0.38	17	0.050	3.54	0.15	0.36	5.00	0.28	
B3W6	0.36	2.13	290.4	Mountain	1.08	30	0.045	6.24	0.10	0.40	6.00	0.15	17
B4W1	0.14	0.99	156.1	Mountain	0.56	22	0.050	3.94	0.15	0.39	6.20	0.17	
B4W2	0.10	0.79	182.1	Mountain	0.36	17	0.050	4.09	0.15	0.39	5.70	0.20	1
B4W4	0.19	1.59	123.1	Mountain	0.88	33	0.050	4.25	0.15	0.35	4.50	0.36	
B4W5	0.07	0.84	149.9	Mountain	0.38	18	0.050	4.11	0.15	0.36	5.00	0.28	
B4W6A	0.24	1.28	173.8	Mountain	0.62	22	0.045	5.11	0.10	0.40	6.00	0.15	17
B4W6B	0.19	1.12	209.0	Mountain	0.46	20	0.049	4.93	0.11	0.40	6.00	0.15	31
B5W1	0.39	2.79	164.9	Mountain	1.39	46	0.050	5.34	0.15	0.39	5.80	0.19	
B5W4A	0.08	0.86	134.3	Mountain	0.48	19	0.048	4.00	0.13	0.37	5.30	0.23	5
B5W4B	0.15	1.45	134.0	Mountain	0.61	27	0.050	4.72	0.15	0.35	4.55	0.35	
B5W5	0.09	1.09	141.8	Mountain	0.65	25	0.050	3.82	0.15	0.37	5.30	0.24	
B5W5A	0.10	1.04	131.1	Mountain	0.58	24	0.050	3.81	0.15	0.35	4.80	0.30	
B5W6	0.38	1.87	153.9	Mountain	0.98	31	0.045	5.31	0.10	0.39	6.20	0.14	35
B6W1	0.11	1.11	151.0	Mountain	0.57	23	0.050	4.25	0.15	0.35	4.50	0.35	1
B6W5	0.10	0.93	138.4	Mountain	0.50	21	0.050	3.88	0.15	0.35	4.70	0.31	
B6W6	0.22	1.08	168.1	Mountain	0.55	20	0.045	4.77	0.10	0.38	5.40	0.19	24
B7W1	0.15	1.06	169.3	Mountain	0.49	21	0.050	4.45	0.15	0.38	5.40	0.23	

TA[illegible]D.2-9B

Flood Control District of Maricopa County

Rio Verde ADMP - North North Hydrology Model

Sub Basin Data – FUTURE CONDITION

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Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt

Unit Hydrograph: S-Graph

Sub Basin	Area	Length	Slope	S-Graph	Lca	Lag	Kn	Vel	IA	DTHETA	PSIF	XKSAT	RTIMP
	Sub Basin Parameters								Rainfall Losses				
ID	(sq mi)	(mi)	(ft/mi)		(mi)	(min)		(f/s)	(in)	(in)		(in/hr)	(%)
B7W5	0.14	1.20	137.1	Mountain	0.67	26	0.050	4.05	0.15	0.36	5.10	0.26	
B7W6	0.26	1.25	740.6	Mountain	0.81	21	0.050	5.22	0.12	0.39	6.20	0.14	37
B8W1	0.15	1.45	165.8	Mountain	0.72	28	0.050	4.55	0.15	0.39	5.80	0.19	
B8W6	0.11	1.00	746.8	Mountain	0.46	15	0.048	5.86	0.11	0.40	6.00	0.15	34
B9W1	0.11	1.08	172.1	Mountain	0.56	21	0.047	4.53	0.12	0.35	3.74	0.50	9
B9W6	0.55	1.73	131.0	Mountain	0.97	31	0.045	4.90	0.10	0.35	4.80	0.25	15
B13W6A	0.11	0.51	136.3	Mountain	0.22	12	0.049	3.77	0.14	0.35	4.80	0.29	3
B13W6B	0.19	1.36	135.2	Mountain	0.51	23	0.047	5.21	0.12	0.38	5.40	0.21	8

TABLE D.2-9C

Flood Control District of Maricopa County

Rio Verde ADMP - North South Hydrology Model

Sub Basin Data – EXISTING CONDITION

8/1/2006

Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt

Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
1B1	0.49	1.41	426.4	Mountain	0.67	22	0.050	5.65	0.15	0.40	6.00	0.18	4
1B2	0.16	2.14	135.2	Mountain	1.17	40	0.050	4.72	0.15	0.38	5.60	0.22	
1B3	0.13	1.05	463.5	Mountain	0.50	18	0.050	5.13	0.15	0.40	6.00	0.18	11
1B4	0.14	1.41	125.0	Mountain	0.78	30	0.050	4.13	0.15	0.39	5.80	0.19	
1N	0.13	0.58	1314.8	Mountain	0.24	9	0.050	5.70	0.15	0.39	6.20	0.17	25
1S	0.19	1.02	515.5	Mountain	0.48	17	0.050	5.26	0.15	0.39	6.20	0.17	22
2A	0.03	0.70	114.3	Mountain	0.36	17	0.050	3.62	0.15	0.39	6.20	0.17	
2B1	0.47	1.58	393.0	Mountain	0.49	21	0.050	6.63	0.15	0.40	6.00	0.18	1
2B2	0.53	2.28	319.7	Mountain	1.03	33	0.050	6.07	0.15	0.39	5.70	0.20	1
2B3	0.26	1.20	113.2	Mountain	0.70	27	0.050	3.92	0.15	0.40	6.00	0.18	
2B4	0.21	1.50	117.8	Mountain	0.97	34	0.050	3.87	0.15	0.40	6.00	0.18	
2B5	0.13	0.76	133.7	Mountain	0.26	15	0.050	4.48	0.15	0.37	6.60	0.14	7
2B6	0.31	1.10	78.1	Mountain	0.43	24	0.050	4.04	0.15	0.38	6.40	0.16	13
2N	0.21	1.10	345.6	Mountain	0.54	19	0.050	5.09	0.15	0.40	6.00	0.18	14
2S	0.09	0.92	133.4	Mountain	0.46	20	0.050	4.03	0.15	0.38	5.60	0.22	1
3B1	0.10	1.42	111.6	Mountain	0.63	28	0.050	4.45	0.15	0.36	5.00	0.28	
3B2	0.34	1.91	172.6	Mountain	0.90	33	0.050	5.10	0.15	0.39	5.70	0.20	3
3N	0.11	1.17	392.6	Mountain	0.65	21	0.050	4.89	0.15	0.39	6.20	0.17	20
3S	0.09	0.95	138.3	Mountain	0.46	20	0.049	4.20	0.14	0.37	5.30	0.24	2
4A	0.08	1.12	133.7	Mountain	0.57	24	0.050	4.11	0.15	0.39	5.80	0.19	6
4B1	0.37	2.02	125.9	Mountain	0.94	37	0.050	4.80	0.15	0.38	5.40	0.23	
4B2	0.24	1.36	117.7	Mountain	0.66	28	0.050	4.27	0.15	0.36	5.00	0.28	
4N	0.07	0.82	137.4	Mountain	0.42	18	0.048	3.98	0.13	0.36	6.80	0.12	6
4N1	0.05	0.82	129.0	Mountain	0.43	19	0.050	3.78	0.15	0.38	5.60	0.22	2
5B1	0.10	0.96	123.1	Mountain	0.50	22	0.050	3.83	0.15	0.32	7.60	0.10	
5B2	0.12	1.26	125.1	Mountain	0.55	25	0.050	4.45	0.15	0.35	7.00	0.12	
6B	0.20	1.61	123.9	Mountain	0.91	33	0.050	4.30	0.15	0.36	6.80	0.13	3
8B1	0.08	0.83	123.6	Mountain	0.39	18	0.049	4.03	0.14	0.36	5.00	0.27	3
8B2	0.06	0.86	127.6	Mountain	0.46	20	0.050	3.79	0.15	0.36	5.00	0.27	1
9B	0.20	1.58	113.8	Mountain	0.83	32	0.049	4.35	0.14	0.36	5.00	0.27	2

Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Sub Basin Data – FUTURE CONDITION

Page 1 8/1/2006

Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt
Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
1B1	0.49	1.41	426.4	Mountain	0.67	20	0.045	6.21	0.10	0.40	6.00	0.15	19
1B2	0.16	2.14	135.2	Mountain	1.17	36	0.045	5.24	0.10	0.38	5.60	0.18	15
1B3	0.13	1.05	463.5	Mountain	0.50	16	0.045	5.77	0.10	0.40	6.00	0.15	26
1B4	0.14	1.41	125.0	Mountain	0.78	27	0.045	4.59	0.10	0.39	5.80	0.16	15
1N	0.13	0.58	1314.8	Mountain	0.24	8	0.045	6.41	0.10	0.39	6.20	0.14	40
1S	0.19	1.02	515.5	Mountain	0.48	15	0.045	5.96	0.10	0.39	6.20	0.14	37
2A	0.03	0.70	114.3	Mountain	0.36	16	0.045	3.85	0.10	0.39	6.20	0.14	15
2B1	0.47	1.58	393.0	Mountain	0.49	19	0.045	7.33	0.10	0.40	6.00	0.15	16
2B2	0.53	2.28	319.7	Mountain	1.03	30	0.045	6.68	0.10	0.39	5.70	0.17	16
2B3	0.26	1.20	113.2	Mountain	0.70	25	0.045	4.23	0.10	0.40	6.00	0.15	15
2B4	0.21	1.50	117.8	Mountain	0.97	30	0.045	4.39	0.10	0.40	6.00	0.15	15
2B5	0.13	0.76	133.7	Mountain	0.26	14	0.045	4.80	0.10	0.37	6.60	0.12	22
2B6	0.31	1.10	78.1	Mountain	0.43	21	0.045	4.61	0.10	0.38	6.40	0.13	28
2N	0.21	1.10	345.6	Mountain	0.54	18	0.045	5.38	0.10	0.40	6.00	0.15	29
2S	0.09	0.92	133.4	Mountain	0.46	18	0.045	4.47	0.10	0.38	5.60	0.18	16
3B1	0.10	1.42	111.6	Mountain	0.63	25	0.045	4.98	0.10	0.36	5.00	0.23	15
3B2	0.34	1.91	172.6	Mountain	0.90	30	0.045	5.61	0.10	0.39	5.70	0.17	18
3N	0.11	1.17	392.6	Mountain	0.65	19	0.045	5.41	0.10	0.39	6.20	0.14	35
3S	0.09	0.95	138.3	Mountain	0.46	19	0.045	4.42	0.10	0.37	5.30	0.20	15
4A	0.08	1.12	133.7	Mountain	0.57	22	0.045	4.49	0.10	0.39	5.80	0.16	21
4B1	0.37	2.02	125.9	Mountain	0.94	33	0.045	5.38	0.10	0.38	5.40	0.19	15
4B2	0.24	1.36	117.7	Mountain	0.66	25	0.045	4.78	0.10	0.36	5.00	0.23	15
4N	0.07	0.82	137.4	Mountain	0.42	17	0.045	4.22	0.10	0.36	6.80	0.11	15
4N1	0.05	0.82	129.0	Mountain	0.43	17	0.045	4.23	0.10	0.38	5.60	0.18	17
5B1	0.10	0.96	123.1	Mountain	0.50	20	0.045	4.22	0.10	0.32	7.60	0.08	15
5B2	0.12	1.26	125.1	Mountain	0.55	23	0.045	4.83	0.10	0.35	7.00	0.10	15
6B	0.20	1.61	123.9	Mountain	0.91	30	0.045	4.73	0.10	0.36	6.80	0.11	18
8B1	0.08	0.83	123.6	Mountain	0.39	17	0.045	4.27	0.10	0.36	5.00	0.23	15
8B2	0.06	0.86	127.6	Mountain	0.46	18	0.045	4.21	0.10	0.36	5.00	0.23	15
9B	0.20	1.58	113.8	Mountain	0.83	29	0.045	4.80	0.10	0.36	5.00	0.23	15

TA[illegible]D.2-9E
Flood Control District of Maricopa County
Rio Verde ADMP - South Hydrology Model
Sub Basin Data – EXISTING CONDITION

8/1/2006

Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt
Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
500A	0.20	1.12	124.6	Mountain	0.53	24	0.050	4.09	0.15	0.37	5.20	0.25	1
500B	0.19	1.81	118.7	Mountain	0.83	32	0.047	4.98	0.12	0.37	5.30	0.22	8
509A1	0.19	1.42	121.3	Mountain	0.69	28	0.049	4.46	0.14	0.38	6.40	0.15	5
509A2	0.13	1.28	130.3	Mountain	0.63	25	0.048	4.51	0.13	0.36	6.80	0.12	6
509A3	0.16	1.07	123.0	Mountain	0.48	22	0.049	4.29	0.14	0.38	6.40	0.15	4
509A4	0.06	0.49	105.5	Mountain	0.23	13	0.050	3.34	0.15	0.36	6.80	0.13	1
509A5	0.02	0.42	107.2	Mountain	0.18	10	0.047	3.67	0.12	0.36	5.10	0.24	9
509B	0.65	3.58	123.0	Mountain	1.59	56	0.050	5.62	0.15	0.36	5.10	0.26	
509D	0.38	2.66	126.2	Mountain	1.04	41	0.049	5.70	0.14	0.40	6.00	0.17	4
510A	0.92	3.00	112.9	Mountain	1.53	49	0.047	5.39	0.12	0.39	6.20	0.15	10
511A1	0.29	1.41	128.5	Mountain	0.72	29	0.050	4.26	0.15	0.39	6.20	0.17	
511A2	0.06	0.66	123.4	Mountain	0.30	16	0.050	3.61	0.15	0.40	6.00	0.18	
511A3	0.29	1.23	94.0	Mountain	0.64	28	0.050	3.88	0.15	0.39	6.20	0.17	
511B1	0.58	2.07	107.8	Mountain	1.07	40	0.050	4.55	0.15	0.38	6.40	0.16	4
511B2	0.22	1.64	120.3	Mountain	0.78	32	0.050	4.50	0.15	0.38	6.40	0.16	
511B3	0.08	0.73	116.6	Mountain	0.40	18	0.050	3.56	0.15	0.37	6.60	0.14	
511B4	0.19	1.21	431.7	Mountain	0.60	20	0.050	5.30	0.15	0.36	6.80	0.13	12
511C1	0.33	1.47	101.8	Mountain	0.86	33	0.050	3.93	0.15	0.40	6.00	0.18	
511C2	0.39	1.76	102.9	Mountain	0.95	36	0.050	4.30	0.15	0.40	6.00	0.18	
511C3	0.14	1.02	126.0	Mountain	0.50	22	0.050	4.06	0.15	0.40	6.00	0.18	
511C4	0.02	0.35	141.8	Mountain	0.18	10	0.050	3.04	0.15	0.40	6.00	0.18	
511C5	0.11	0.86	130.4	Mountain	0.39	19	0.050	3.99	0.15	0.35	7.00	0.12	
511C6	0.04	0.59	99.6	Mountain	0.30	16	0.050	3.26	0.15	0.35	7.00	0.12	
511C7	0.12	1.22	120.5	Mountain	0.51	24	0.049	4.47	0.14	0.39	6.20	0.16	7
511C8	0.04	0.38	122.1	Mountain	0.20	11	0.050	3.02	0.15	0.37	5.20	0.25	
511D	0.12	1.17	152.6	Mountain	0.54	23	0.050	4.49	0.15	0.36	6.80	0.13	
511E1	0.30	1.61	147.7	Mountain	0.84	31	0.050	4.58	0.15	0.40	6.00	0.18	
511E2	0.28	1.63	117.8	Mountain	0.87	33	0.050	4.34	0.15	0.36	6.80	0.13	1
511F	0.16	0.94	114.1	Mountain	0.40	20	0.049	4.11	0.14	0.38	6.40	0.15	4
511G1	0.31	1.07	276.6	Mountain	0.56	20	0.050	4.72	0.15	0.38	5.60	0.22	8
511G2	0.16	0.99	105.6	Mountain	0.52	23	0.050	3.77	0.15	0.37	5.30	0.24	
511G3	0.10	1.07	105.2	Mountain	0.46	23	0.050	4.07	0.15	0.36	5.00	0.28	
511G4	0.30	1.39	121.9	Mountain	0.77	30	0.050	4.09	0.15	0.35	4.65	0.32	1
511H	0.30	1.36	102.5	Mountain	0.78	31	0.050	3.85	0.15	0.35	4.40	0.38	1
511I	0.20	1.11	123.8	Mountain	0.62	24	0.049	4.05	0.14	0.35	4.10	0.44	2
509A6	0.03	0.37	94.4	Mountain	0.19	11	0.050	2.95	0.15	0.32	7.60	0.10	

Flood Control District of Maricopa County
Rio Verde ADMP - South Hydrology Model
Sub Basin Data – FUTURE CONDITION

Page 1 8/1/2006

Basin: 01 Storms: Single Duration: 6 & 24 Hours Loss Method: Green-Ampt
Unit Hydrograph: S-Graph

Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	Vel (f/s)	IA (in)	DTHETA (in)	PSIF	XKSAT (in/hr)	RTIMP (%)
	Sub Basin Parameters								Rainfall Losses				
500A	0.20	1.12	124.6	Mountain	0.53	21	0.045	4.68	0.10	0.37	5.20	0.21	15
500B	0.19	1.81	118.7	Mountain	0.83	31	0.045	5.14	0.10	0.37	5.30	0.20	15
509A1	0.19	1.42	121.3	Mountain	0.69	26	0.045	4.80	0.10	0.38	6.40	0.13	15
509A2	0.13	1.28	130.3	Mountain	0.63	24	0.045	4.70	0.10	0.36	6.80	0.11	15
509A3	0.16	1.07	123.0	Mountain	0.48	20	0.045	4.72	0.10	0.38	6.40	0.13	15
509A4	0.06	0.49	105.5	Mountain	0.23	12	0.045	3.62	0.10	0.36	6.80	0.11	15
509A5	0.02	0.42	107.2	Mountain	0.18	10	0.045	3.67	0.10	0.36	5.10	0.22	15
509B	0.65	3.58	123.0	Mountain	1.59	50	0.045	6.30	0.10	0.36	5.10	0.22	15
509D	0.38	2.66	126.2	Mountain	1.04	38	0.045	6.15	0.10	0.40	6.00	0.15	15
510A	0.92	3.00	112.9	Mountain	1.53	47	0.045	5.62	0.10	0.39	6.20	0.14	15
511A1	0.29	1.41	128.5	Mountain	0.72	26	0.045	4.76	0.10	0.39	6.20	0.14	15
511A2	0.06	0.66	123.4	Mountain	0.30	14	0.045	4.12	0.10	0.40	6.00	0.15	15
511A3	0.29	1.23	94.0	Mountain	0.64	25	0.045	4.34	0.10	0.39	6.20	0.14	15
511B1	0.58	2.07	107.8	Mountain	1.07	36	0.045	5.06	0.10	0.38	6.40	0.13	19
511B2	0.22	1.64	120.3	Mountain	0.78	29	0.045	4.97	0.10	0.38	6.40	0.13	15
511B3	0.08	0.73	116.6	Mountain	0.40	16	0.045	4.01	0.10	0.37	6.60	0.12	15
511B4	0.19	1.21	431.7	Mountain	0.60	18	0.045	5.89	0.10	0.36	6.80	0.11	27
511C1	0.33	1.47	101.8	Mountain	0.86	29	0.045	4.47	0.10	0.40	6.00	0.15	15
511C2	0.39	1.76	102.9	Mountain	0.95	33	0.045	4.69	0.10	0.40	6.00	0.15	15
511C3	0.14	1.02	126.0	Mountain	0.50	20	0.045	4.47	0.10	0.40	6.00	0.15	15
511C4	0.02	0.35	141.8	Mountain	0.18	9	0.045	3.37	0.10	0.40	6.00	0.15	15
511C5	0.11	0.86	130.4	Mountain	0.39	17	0.045	4.46	0.10	0.35	7.00	0.10	15
511C6	0.04	0.59	99.6	Mountain	0.30	14	0.045	3.72	0.10	0.35	7.00	0.10	15
511C7	0.12	1.22	120.5	Mountain	0.51	22	0.045	4.88	0.10	0.39	6.20	0.14	17
511C8	0.04	0.38	122.1	Mountain	0.20	10	0.045	3.32	0.10	0.37	5.20	0.21	15
511D	0.12	1.17	152.6	Mountain	0.54	21	0.045	4.92	0.10	0.36	6.80	0.11	15
511E1	0.30	1.61	147.7	Mountain	0.84	28	0.045	5.07	0.10	0.40	6.00	0.15	15
511E2	0.28	1.63	117.8	Mountain	0.87	30	0.045	4.78	0.10	0.36	6.80	0.11	15
511F	0.16	0.94	114.1	Mountain	0.40	18	0.045	4.57	0.10	0.38	6.40	0.13	15
511G1	0.31	1.07	276.6	Mountain	0.56	18	0.045	5.25	0.10	0.38	5.60	0.18	23
511G2	0.16	0.99	105.6	Mountain	0.52	21	0.045	4.13	0.10	0.37	5.30	0.20	15
511G3	0.10	1.07	105.2	Mountain	0.46	20	0.045	4.69	0.10	0.36	5.00	0.23	15
511G4	0.30	1.39	121.9	Mountain	0.77	27	0.045	4.54	0.10	0.35	4.65	0.27	15
511H	0.30	1.36	102.5	Mountain	0.78	27	0.045	4.42	0.10	0.35	4.40	0.32	15
511I	0.20	1.11	123.8	Mountain	0.62	22	0.045	4.42	0.10	0.35	4.10	0.38	15
509A6	0.03	0.37	94.4	Mountain	0.19	10	0.045	3.25	0.10	0.32	7.60	0.08	15

TABLE D.2-10A
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Soil Data

8/1/2006

	Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop	(%) Effective
Major Basin:	**01**							
	B10W1	Aguila/Carefree	6	0.000	0.1	0.62		
		Aguila/Carefree	6	0.007	5.4	0.62		
		Aguila/Carefree	37	0.081	66.1	0.13		
		FCDMC	6	0.007	5.9	0.62		
		FCDMC	37	0.012	9.5	0.13		
		FCDMC	6	0.000		0.62		
		FCDMC	37	0.016	13.0	0.13		
	B10W6A	Aguila/Carefree	33	0.002	1.2	0.23		
		Aguila/Carefree	61	0.036	22.9	0.15		
		Aguila/Carefree	63	0.120	75.9	0.14	25.0	100
	B10W6B	Aguila/Carefree	96	0.001	0.6	0.07		
		Aguila/Carefree	33	0.013	7.7	0.23		
		Aguila/Carefree	61	0.093	56.8	0.15		
		Aguila/Carefree	63	0.057	34.8	0.14	25.0	100
	B11W6	Aguila/Carefree	33	0.000		0.23		
		Aguila/Carefree	61	0.002	1.2	0.15		
		Aguila/Carefree	61	0.004	2.4	0.15		
		Aguila/Carefree	33	0.051	31.0	0.23		
		Aguila/Carefree	96	0.069	42.1	0.07		
		Aguila/Carefree	61	0.001	0.9	0.15		
		Aguila/Carefree	33	0.037	22.4	0.23		
	B12W6	Aguila/Carefree	61	0.050	21.9	0.15		
		Aguila/Carefree	93	0.000		0.33		
		Aguila/Carefree	93	0.000		0.33		
		Aguila/Carefree	33	0.172	75.1	0.23		
		Aguila/Carefree	93	0.007	3.0	0.33		
	B13W1	FCDMC	122	0.003	1.3	0.33		
		FCDMC	37	0.005	2.4	0.13		
		FCDMC	37	0.032	15.2	0.13		
		FCDMC	40	0.034	16.2	0.17		
		FCDMC	6	0.082	38.8	0.62		
		FCDMC	37	0.055	26.1	0.13		
	B14W1	FCDMC	6	0.008	5.5	0.62		
		FCDMC	37	0.136	94.5	0.13		
	B14W6	Aguila/Carefree	33	0.107	100.0	0.23		
	B15W1	FCDMC	37	0.024	100.0	0.13		
	B16W1	FCDMC	122	0.001	7.3	0.33		
		FCDMC	37	0.014	92.7	0.13		
	B17W1	FCDMC	122	0.002	16.3	0.33		
		FCDMC	37	0.009	83.7	0.13		
	B18W1	FCDMC	122	0.001	2.0	0.33		
		FCDMC	37	0.048	98.0	0.13		
	B1W1	FCDMC	40	0.036	10.9	0.17		
		FCDMC	6	0.028	8.4	0.62		
		FCDMC	33	0.044	13.3	0.23		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		
		FCDMC	37	0.224	67.4	0.13		
	B1W2	Aguila/Carefree	40	0.000		0.17		
		Aguila/Carefree	6	0.002	3.0	0.62		
		Aguila/Carefree	96	0.010	13.1	0.07		
		Aguila/Carefree	40	0.024	30.0	0.17		
		FCDMC	40	0.043	53.9	0.17		
	B1W3	Aguila/Carefree	34	0.000		0.23		
		Aguila/Carefree	33	0.029	6.5	0.23		
		FCDMC	33	0.001	0.1	0.23		
		FCDMC	6	0.011	2.4	0.62		
		FCDMC	122	0.001	0.3	0.33		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		
		FCDMC	41	0.000		0.17		

TABLE D.2-10A
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Soil Data

8/1/2006

Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop	(%)	Effective
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	33	0.406	90.1	0.23			
	FCDMC	41	0.000	0.1	0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.001	0.3	0.17			
B1W4A	Aguila/Carefree	33	0.048	36.9	0.23			
	Aguila/Carefree	61	0.083	63.1	0.15			
B1W4B	Aguila/Carefree	61	0.001	0.7	0.15			
	Aguila/Carefree	33	0.116	99.3	0.23			
B1W4C	Aguila/Carefree	33	0.104	100.0	0.23			
B1W5	Aguila/Carefree	96	0.010	4.9	0.07			
	FCDMC	96	0.075	35.5	0.07			
	FCDMC	33	0.125	59.6	0.23			
B1W6	Aguila/Carefree	61	0.519	100.0	0.15			
B2W1	FCDMC	6	0.007	5.8	0.62			
	FCDMC	41	0.000		0.17			
	FCDMC	41	0.000		0.17			
	FCDMC	37	0.113	94.2	0.13			
B2W2	Aguila/Carefree	6	0.000	0.2	0.62			
	Aguila/Carefree	40	0.021	20.9	0.17			
	FCDMC	40	0.080	78.9	0.17			
B2W4A	Aguila/Carefree	33	0.122	98.5	0.23			
	FCDMC	33	0.002	1.5	0.23			
B2W4B	Aguila/Carefree	33	0.081	77.3	0.23			
	FCDMC	33	0.000	0.2	0.23			
	FCDMC	122	0.024	22.6	0.33			
B2W4C	Aguila/Carefree	33	0.016	12.0	0.23			
	FCDMC	122	0.001	0.6	0.33			
	FCDMC	33	0.083	63.1	0.23			
	FCDMC	122	0.032	24.3	0.33			
B2W6	Aguila/Carefree	6	0.036	3.8	0.62			
	Aguila/Carefree	121	0.041	4.3	0.12			
	Aguila/Carefree	61	0.604	63.1	0.15			
	Tonto National	301	0.260	27.1	0.40			
	Tonto National	301	0.016	1.7	0.40			
B3W1	FCDMC	6	0.010	7.3	0.62			
	FCDMC	41	0.000		0.17			
	FCDMC	37	0.126	92.6	0.13			
	FCDMC	41	0.000	0.1	0.17			
B3W4	Aguila/Carefree	33	0.092	98.1	0.23			
	FCDMC	33	0.002	1.9	0.23			
B3W5	FCDMC	33	0.080	100.0	0.23			
B3W6	Aguila/Carefree	63	0.021	5.7	0.14	25.0		100
	Aguila/Carefree	61	0.341	94.3	0.15			
B4W1	FCDMC	6	0.007	4.8	0.62			
	FCDMC	41	0.000		0.17			
	FCDMC	37	0.136	95.2	0.13			
	FCDMC	41	0.000		0.17			
B4W2	Aguila/Carefree	6	0.001	0.8	0.62			
	Aguila/Carefree	40	0.014	14.8	0.17			
	Aguila/Carefree	6	0.000	0.2	0.62			
	FCDMC	6	0.000	0.4	0.62			
	FCDMC	6	0.000		0.62			
	FCDMC	40	0.081	83.8	0.17			
B4W4	FCDMC	33	0.001	0.3	0.23			
	FCDMC	33	0.029	15.1	0.23			
	FCDMC	33	0.022	11.3	0.23			
	FCDMC	122	0.141	73.3	0.33			
B4W5	FCDMC	96	0.000		0.07			
	FCDMC	33	0.071	100.0	0.23			

TABLE D.2-10A
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Soil Data

8/1/2006

Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop (%)	Effective
B4W6A	Aguila/Carefree	63	0.011	4.6	0.14	25.0	100
	Aguila/Carefree	61	0.229	95.4	0.15		
B4W6B	Aguila/Carefree	63	0.079	41.8	0.14	25.0	100
	Aguila/Carefree	61	0.110	58.2	0.15		
B5W1	Aguila/Carefree	37	0.001	0.2	0.13		
	Aguila/Carefree	37	0.018	4.5	0.13		
	Aguila/Carefree	6	0.003	0.8	0.62		
	FCDMC	37	0.048	12.4	0.13		
	FCDMC	6	0.017	4.3	0.62		
	FCDMC	37	0.019	4.8	0.13		
	FCDMC	6	0.034	8.9	0.62		
	FCDMC	37	0.247	64.1	0.13		
B5W4A	Aguila/Carefree	96	0.011	12.8	0.07		
	Aguila/Carefree	33	0.010	11.8	0.23		
	Aguila/Carefree	33	0.009	10.5	0.23		
	FCDMC	122	0.000		0.33		
	FCDMC	96	0.000	0.2	0.07		
	FCDMC	33	0.054	64.7	0.23		
B5W4B	Aguila/Carefree	96	0.000	0.1	0.07		
	FCDMC	96	0.001	0.7	0.07		
	FCDMC	122	0.096	62.9	0.33		
	FCDMC	33	0.055	36.4	0.23		
B5W5	FCDMC	122	0.010	12.0	0.33		
	FCDMC	33	0.062	73.1	0.23		
	FCDMC	96	0.013	14.8	0.07		
B5W5A	FCDMC	122	0.022	21.0	0.33		
	FCDMC	33	0.081	79.0	0.23		
B5W6	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.002	0.5	0.15		
	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.000	0.1	0.15		
	Aguila/Carefree	63	0.302	78.6	0.14	25.0	100
	Aguila/Carefree	61	0.080	20.8	0.15		
B6W1	Aguila/Carefree	40	0.000		0.17		
	Aguila/Carefree	40	0.003	3.1	0.17		
	Aguila/Carefree	6	0.026	23.7	0.62		
	Aguila/Carefree	37	0.006	5.2	0.13		
	FCDMC	37	0.001	0.8	0.13		
	FCDMC	40	0.027	24.2	0.17		
	FCDMC	6	0.028	25.5	0.62		
	FCDMC	37	0.019	17.5	0.13		
B6W5	FCDMC	96	0.000	0.2	0.07		
	FCDMC	96	0.001	0.6	0.07		
	FCDMC	6	0.003	2.4	0.62		
	FCDMC	122	0.025	24.0	0.33		
	FCDMC	122	0.000		0.33		
	FCDMC	33	0.076	72.9	0.23		
B6W6	Aguila/Carefree	96	0.008	3.6	0.07		
	Aguila/Carefree	33	0.037	16.9	0.23		
	Aguila/Carefree	63	0.081	37.5	0.14	25.0	100
	Aguila/Carefree	61	0.030	14.0	0.15		
	Aguila/Carefree	6	0.035	16.1	0.62		
	Aguila/Carefree	61	0.026	11.9	0.15		
B7W1	Aguila/Carefree	37	0.004	2.6	0.13		
	Aguila/Carefree	37	0.010	6.6	0.13		
	Aguila/Carefree	6	0.007	5.1	0.62		
	FCDMC	6	0.000		0.62		
	FCDMC	37	0.031	21.1	0.13		
	FCDMC	37	0.000	0.1	0.13		
	FCDMC	6	0.026	17.7	0.62		
	FCDMC	37	0.068	46.8	0.13		
B7W5	FCDMC	6	0.000	0.1	0.62		
	FCDMC	96	0.021	14.8	0.07		
	FCDMC	122	0.051	36.3	0.33		
	FCDMC	33	0.069	48.7	0.23		

TABLE D.2-10A
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop (%)	8/1/2006 Effective
B7W6	Aguila/Carefree	93	0.000		0.33		
	Aguila/Carefree	93	0.000		0.33		
	Aguila/Carefree	63	0.006	2.4	0.14	25.0	100
	Aguila/Carefree	63	0.000		0.14	25.0	100
	Aguila/Carefree	63	0.001	0.5	0.14	25.0	100
	Aguila/Carefree	63	0.000		0.14	25.0	100
	Aguila/Carefree	63	0.157	59.6	0.14	25.0	100
	Aguila/Carefree	63	0.001	0.3	0.14	25.0	100
	Aguila/Carefree	63	0.000	0.1	0.14	25.0	100
	Aguila/Carefree	61	0.098	37.1	0.15		
B8W1	Aguila/Carefree	6	0.005	3.0	0.62		
	Aguila/Carefree	37	0.002	1.0	0.13		
	FCDMC	6	0.017	11.0	0.62		
	FCDMC	37	0.129	85.1	0.13		
B8W6	Aguila/Carefree	33	0.007	6.3	0.23		
	Aguila/Carefree	93	0.000	0.4	0.33		
	Aguila/Carefree	63	0.065	60.3	0.14	25.0	100
	Aguila/Carefree	61	0.036	33.1	0.15		
B9W1	Aguila/Carefree	40	0.000		0.17		
	Aguila/Carefree	40	0.000		0.17		
	Aguila/Carefree	37	0.002	1.8	0.13		
	Aguila/Carefree	40	0.014	13.3	0.17		
	Aguila/Carefree	6	0.055	51.4	0.62		
	FCDMC	40	0.000		0.17		
	FCDMC	40	0.006	5.5	0.17		
	FCDMC	6	0.028	25.7	0.62		
	FCDMC	37	0.003	2.3	0.13		
B9W6	Aguila/Carefree	33	0.001	0.2	0.23		
	Aguila/Carefree	33	0.003	0.5	0.23		
	Aguila/Carefree	96	0.030	5.4	0.07		
	Aguila/Carefree	61	0.006	1.1	0.15		
	Aguila/Carefree	93	0.051	9.1	0.33		
	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.020	3.7	0.15		
	Aguila/Carefree	33	0.153	27.6	0.23		
	Aguila/Carefree	63	0.016	3.0	0.14	25.0	100
	Aguila/Carefree	6	0.088	16.0	0.62		
	Aguila/Carefree	33	0.160	29.0	0.23		
	FCDMC	33	0.001	0.2	0.23		
	FCDMC	6	0.006	1.1	0.62		
	FCDMC	96	0.017	3.0	0.07		
B13W6A	FCDMC	96	0.000	0.1	0.07		
	FCDMC	33	0.012	10.8	0.23		
	FCDMC	96	0.017	14.7	0.07		
	FCDMC	33	0.022	19.4	0.23		
	FCDMC	6	0.030	26.6	0.62		
	Aguila/Carefree	33	0.032	28.5	0.23		
B13W6B	Aguila/Carefree	96	0.000		0.07		
	FCDMC	33	0.003	1.5	0.23		
	FCDMC	33	0.014	7.1	0.23		
	FCDMC	6	0.022	11.6	0.62		
	FCDMC	96	0.023	12.0	0.07		
	FCDMC	33	0.026	13.5	0.23		
	Aguila/Carefree	96	0.030	15.5	0.07		
	Aguila/Carefree	33	0.030	15.6	0.23		
	Aguila/Carefree	33	0.045	23.3	0.23		

TABLE D.2-10B
Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Soil Data

8/1/2006

	Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop (%)	Effective
Major Basin:	**01**							
	1B1	Aguila/Carefree	63	0.029	5.8	0.14	25.0	100
		Aguila/Carefree	63	0.059	12.0	0.14	25.0	100
		Aguila/Carefree	61	0.406	82.2	0.15		
	1B2	Aguila/Carefree	93	0.002	1.2	0.33		
		Aguila/Carefree	33	0.069	42.9	0.23		
		Aguila/Carefree	61	0.090	55.9	0.15		
	1B3	Aguila/Carefree	63	0.056	43.3	0.14	25.0	100
		Aguila/Carefree	61	0.073	56.7	0.15		
	1B4	Aguila/Carefree	61	0.031	21.8	0.15		
		Aguila/Carefree	96	0.031	22.2	0.07		
		Aguila/Carefree	33	0.079	56.0	0.23		
	1N	Aguila/Carefree	63	0.131	100.0	0.14	25.0	100
	1S	Aguila/Carefree	61	0.025	13.3	0.15		
		Aguila/Carefree	63	0.163	86.7	0.14	25.0	100
	2A	Aguila/Carefree	93	0.000	1.0	0.33		
		Aguila/Carefree	96	0.013	41.2	0.07		
		Aguila/Carefree	33	0.018	57.8	0.23		
	2B1	Aguila/Carefree	61	0.001	0.1	0.15		
		Aguila/Carefree	63	0.024	5.2	0.14	25.0	100
		Aguila/Carefree	33	0.030	6.3	0.23		
		Aguila/Carefree	96	0.042	8.9	0.07		
		Aguila/Carefree	33	0.077	16.4	0.23		
		Aguila/Carefree	61	0.298	63.1	0.15		
	2B2	Aguila/Carefree	61	0.006	1.2	0.15		
		Aguila/Carefree	61	0.009	1.6	0.15		
		Aguila/Carefree	63	0.020	3.7	0.14	25.0	100
		Aguila/Carefree	96	0.046	8.7	0.07		
		Aguila/Carefree	33	0.048	8.9	0.23		
		Aguila/Carefree	61	0.076	14.3	0.15		
		Aguila/Carefree	61	0.147	27.6	0.15		
		Aguila/Carefree	33	0.182	34.1	0.23		
	2B3	Aguila/Carefree	61	0.002	0.6	0.15		
		Aguila/Carefree	96	0.019	7.3	0.07		
		Aguila/Carefree	33	0.034	13.0	0.23		
		Aguila/Carefree	61	0.205	79.1	0.15		
	2B4	Aguila/Carefree	33	0.002	0.8	0.23		
		Aguila/Carefree	61	0.210	99.2	0.15		
	2B5	Aguila/Carefree	33	0.007	5.4	0.23		
		Aguila/Carefree	96	0.020	15.7	0.07		
		Aguila/Carefree	72	0.031	24.6	0.09	30.0	100
		Aguila/Carefree	61	0.068	54.3	0.15		
	2B6	Aguila/Carefree	61	0.002	0.7	0.15		
		Aguila/Carefree	33	0.026	8.4	0.23		
		Aguila/Carefree	96	0.028	8.9	0.07		
		Aguila/Carefree	121	0.043	14.0	0.12		
		Aguila/Carefree	33	0.079	25.7	0.23		
		Aguila/Carefree	72	0.130	42.3	0.09	30.0	100
	2N	Aguila/Carefree	96	0.021	10.1	0.07		
		Aguila/Carefree	61	0.031	15.0	0.15		
		Aguila/Carefree	33	0.037	18.1	0.23		
		Aguila/Carefree	63	0.116	56.8	0.14	25.0	100
	2S	Aguila/Carefree	63	0.002	2.3	0.14	25.0	100
		Aguila/Carefree	96	0.002	2.4	0.07		
		Aguila/Carefree	93	0.005	5.9	0.33		
		Aguila/Carefree	33	0.039	41.8	0.23		
		Aguila/Carefree	61	0.044	47.7	0.15		
	3B1	Aguila/Carefree	121	0.000	0.2	0.12		
		Aguila/Carefree	33	0.098	99.8	0.23		
	3B2	Aguila/Carefree	6	0.016	4.5	0.62		
		Aguila/Carefree	72	0.029	8.6	0.09	30.0	100
		Aguila/Carefree	121	0.033	9.7	0.12		
		Aguila/Carefree	96	0.060	17.6	0.07		
		Aguila/Carefree	33	0.101	29.4	0.23		
		Aguila/Carefree	33	0.103	30.2	0.23		
	3N	Aguila/Carefree	33	0.004	3.8	0.23		
		Aguila/Carefree	61	0.004	3.9	0.15		
		Aguila/Carefree	61	0.005	4.9	0.15		

TABLE D.2-10B
Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Soil Data

8/1/2006

Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop (%)	Effective
	Aguila/Carefree	96	0.010	8.9	0.07		
	Aguila/Carefree	63	0.087	78.5	0.14	25.0	100
3S	Aguila/Carefree	96	0.010	10.9	0.07		
	Aguila/Carefree	33	0.078	89.1	0.23		
4A	Aguila/Carefree	61	0.003	3.4	0.15		
	Aguila/Carefree	93	0.007	8.3	0.33		
	Aguila/Carefree	96	0.012	14.7	0.07		
	Aguila/Carefree	61	0.014	16.8	0.15		
	Aguila/Carefree	63	0.020	24.6	0.14	25.0	100
	Aguila/Carefree	33	0.026	32.2	0.23		
4B1	Aguila/Carefree	61	0.163	44.4	0.15		
	Aguila/Carefree	33	0.205	55.6	0.23		
4B2	Aguila/Carefree	93	0.006	2.3	0.33		
	Aguila/Carefree	121	0.009	3.7	0.12		
	Aguila/Carefree	33	0.226	94.0	0.23		
4N	Aguila/Carefree	33	0.000	0.4	0.23		
	Aguila/Carefree	6	0.001	0.7	0.62		
	Aguila/Carefree	33	0.001	1.9	0.23		
	Aguila/Carefree	33	0.023	30.6	0.23		
	Aguila/Carefree	96	0.049	66.4	0.07		
4N1	Aguila/Carefree	61	0.002	3.6	0.15		
	Aguila/Carefree	63	0.005	9.8	0.14	25.0	100
	Aguila/Carefree	96	0.009	17.6	0.07		
	Aguila/Carefree	33	0.035	69.0	0.23		
5B1	Aguila/Carefree	33	0.010	10.3	0.23		
	Aguila/Carefree	96	0.089	89.7	0.07		
5B2	Aguila/Carefree	33	0.040	32.3	0.23		
	Aguila/Carefree	96	0.084	67.7	0.07		
6B	Aguila/Carefree	93	0.000		0.33		
	Aguila/Carefree	33	0.000		0.23		
	Aguila/Carefree	33	0.000	0.1	0.23		
	Aguila/Carefree	93	0.009	4.6	0.33		
	Aguila/Carefree	63	0.020	10.0	0.14	25.0	100
	Aguila/Carefree	33	0.022	10.9	0.23		
	Aguila/Carefree	61	0.045	21.9	0.15		
	Aguila/Carefree	96	0.107	52.4	0.07		
8B1	Aguila/Carefree	121	0.000	0.3	0.12		
	Aguila/Carefree	6	0.001	0.7	0.62		
	Aguila/Carefree	33	0.076	99.1	0.23		
8B2	Aguila/Carefree	6	0.010	15.3	0.62		
	Aguila/Carefree	121	0.017	26.1	0.12		
	Aguila/Carefree	33	0.038	58.7	0.23		
9B	Aguila/Carefree	6	0.003	1.7	0.62		
	Aguila/Carefree	33	0.196	98.3	0.23		

TABLE D.2-10C
Flood Control District of Maricopa County
Rio Verde ADMP - South Hydrology Model
Soil Data

8/1/2006

	Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop	(%)	Effective
Major Basin:	**01**								
	500A	Aguila/Carefree	33	0.172	84.5	0.23			
		Aguila/Carefree	6	0.007	3.5	0.62			
		Aguila/Carefree	96	0.025	12.0	0.07			
	500B	Aguila/Carefree	122	0.034	17.9	0.33			
		Aguila/Carefree	33	0.002	1.0	0.23			
		Aguila/Carefree	33	0.004	1.9	0.23			
		Aguila/Carefree	33	0.118	61.1	0.23			
		Aguila/Carefree	6	0.000		0.62			
		Aguila/Carefree	96	0.035	18.2	0.07			
	509A1	Aguila/Carefree	61	0.000	0.1	0.15			
		Aguila/Carefree	61	0.006	3.2	0.15			
		Aguila/Carefree	61	0.153	79.4	0.15			
		Aguila/Carefree	96	0.033	17.3	0.07			
	509A2	Aguila/Carefree	33	0.000	0.2	0.23			
		Aguila/Carefree	33	0.002	1.5	0.23			
		Aguila/Carefree	61	0.003	2.3	0.15			
		Aguila/Carefree	61	0.027	20.9	0.15			
		Aguila/Carefree	61	0.030	23.4	0.15			
		Aguila/Carefree	63	0.000		0.14	25.0		100
		Aguila/Carefree	63	0.002	1.7	0.14	25.0		100
		Aguila/Carefree	93	0.000		0.33			
		Aguila/Carefree	93	0.008	5.9	0.33			
		Aguila/Carefree	96	0.002	1.2	0.07			
		Aguila/Carefree	96	0.021	16.3	0.07			
		Aguila/Carefree	96	0.034	26.7	0.07			
	509A3	Aguila/Carefree	33	0.000	0.1	0.23			
		Aguila/Carefree	33	0.020	12.4	0.23			
		Aguila/Carefree	61	0.102	63.2	0.15			
		Aguila/Carefree	96	0.000	0.1	0.07			
		Aguila/Carefree	96	0.039	24.2	0.07			
	509A4	Aguila/Carefree	33	0.000		0.23			
		Aguila/Carefree	33	0.001	0.8	0.23			
		Aguila/Carefree	33	0.005	8.7	0.23			
		Aguila/Carefree	33	0.019	31.0	0.23			
		Aguila/Carefree	96	0.002	3.2	0.07			
		Aguila/Carefree	96	0.035	56.2	0.07			
	509A5	Aguila/Carefree	33	0.019	95.1	0.23			
		Aguila/Carefree	96	0.000		0.07			
		Aguila/Carefree	96	0.001	4.9	0.07			
	509A6	Aguila/Carefree	33	0.000	0.3	0.23			
		Aguila/Carefree	33	0.003	9.3	0.23			
		Aguila/Carefree	96	0.029	90.3	0.07			
	509B	Aguila/Carefree	121	0.063	9.6	0.12			
		Aguila/Carefree	33	0.015	2.3	0.23			
		Aguila/Carefree	33	0.531	81.3	0.23			
		Aguila/Carefree	6	0.025	3.8	0.62			
		Aguila/Carefree	96	0.003	0.4	0.07			
		Aguila/Carefree	96	0.017	2.6	0.07			
	509D	Aguila/Carefree	33	0.005	1.3	0.23			
		Aguila/Carefree	33	0.248	64.9	0.23			
		Aguila/Carefree	96	0.000		0.07			
		Aguila/Carefree	96	0.000		0.07			
		Aguila/Carefree	96	0.004	1.1	0.07			
		Aguila/Carefree	96	0.125	32.7	0.07			
	510A	Aguila/Carefree	33	0.000		0.23			
		Aguila/Carefree	33	0.034	3.7	0.23			
		Aguila/Carefree	33	0.494	53.4	0.23			
		Aguila/Carefree	6	0.000		0.62			
		Aguila/Carefree	6	0.001	0.1	0.62			
		Aguila/Carefree	96	0.000		0.07			
		Aguila/Carefree	96	0.001	0.1	0.07			
		Aguila/Carefree	96	0.001	0.1	0.07			
		Aguila/Carefree	96	0.393	42.5	0.07			
	511A1	Aguila/Carefree	61	0.002	0.8	0.15			
		Aguila/Carefree	61	0.266	90.4	0.15			
		Aguila/Carefree	96	0.026	8.8	0.07			
	511A2	Aguila/Carefree	61	0.059	100.0	0.15			

TABLE D.2-10C
Flood Control District of Maricopa County
Rio Verde ADMP - South Hydrology Model
Soil Data

8/1/2006

Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop (%)	Effective
511A3	Aguila/Carefree	61	0.260	88.5	0.15		
	Aguila/Carefree	96	0.006	1.9	0.07		
	Aguila/Carefree	96	0.028	9.6	0.07		
511B1	Aguila/Carefree	61	0.002	0.4	0.15		
	Aguila/Carefree	61	0.429	73.6	0.15		
	Aguila/Carefree	72	0.080	13.6	0.09	30.0	100
	Aguila/Carefree	96	0.073	12.4	0.07		
511B2	Aguila/Carefree	61	0.008	3.7	0.15		
	Aguila/Carefree	61	0.010	4.7	0.15		
	Aguila/Carefree	61	0.166	74.8	0.15		
	Aguila/Carefree	96	0.037	16.8	0.07		
511B3	Aguila/Carefree	61	0.019	24.0	0.15		
	Aguila/Carefree	61	0.038	48.2	0.15		
	Aguila/Carefree	96	0.022	27.8	0.07		
511B4	Aguila/Carefree	33	0.022	11.4	0.23		
	Aguila/Carefree	61	0.001	0.3	0.15		
	Aguila/Carefree	61	0.044	22.8	0.15		
	Aguila/Carefree	72	0.078	40.4	0.09	30.0	100
	Aguila/Carefree	96	0.049	25.2	0.07		
511C1	Aguila/Carefree	61	0.329	100.0	0.15		
511C2	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.390	99.3	0.15		
	Aguila/Carefree	93	0.003	0.7	0.33		
511C3	Aguila/Carefree	61	0.141	100.0	0.15		
511C4	Aguila/Carefree	61	0.020	100.0	0.15		
511C5	Aguila/Carefree	61	0.032	28.5	0.15		
	Aguila/Carefree	93	0.010	8.9	0.33		
	Aguila/Carefree	96	0.069	62.6	0.07		
511C6	Aguila/Carefree	33	0.000		0.23		
	Aguila/Carefree	61	0.017	49.6	0.15		
	Aguila/Carefree	96	0.018	50.4	0.07		
511C7	Aguila/Carefree	33	0.006	4.7	0.23		
	Aguila/Carefree	33	0.017	14.0	0.23		
	Aguila/Carefree	6	0.002	1.6	0.62		
	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.000		0.15		
	Aguila/Carefree	61	0.056	45.8	0.15		
	Aguila/Carefree	63	0.011	9.2	0.14	25.0	100
	Aguila/Carefree	93	0.002	1.2	0.33		
	Aguila/Carefree	96	0.000		0.07		
	Aguila/Carefree	96	0.000		0.07		
	Aguila/Carefree	96	0.000	0.1	0.07		
	Aguila/Carefree	96	0.009	7.3	0.07		
	Aguila/Carefree	96	0.019	16.0	0.07		
511C8	Aguila/Carefree	33	0.008	19.4	0.23		
	Aguila/Carefree	33	0.014	34.6	0.23		
	Aguila/Carefree	6	0.008	20.6	0.62		
	Aguila/Carefree	61	0.000	0.2	0.15		
	Aguila/Carefree	96	0.010	25.1	0.07		
511D	Aguila/Carefree	33	0.001	1.2	0.23		
	Aguila/Carefree	61	0.007	5.9	0.15		
	Aguila/Carefree	61	0.061	50.4	0.15		
	Aguila/Carefree	96	0.052	42.6	0.07		
511E1	Aguila/Carefree	61	0.296	100.0	0.15		
511E2	Aguila/Carefree	33	0.001	0.2	0.23		
	Aguila/Carefree	33	0.001	0.5	0.23		
	Aguila/Carefree	33	0.010	3.6	0.23		
	Aguila/Carefree	61	0.005	1.8	0.15		
	Aguila/Carefree	61	0.153	55.4	0.15		
	Aguila/Carefree	96	0.106	38.6	0.07		
511F	Aguila/Carefree	33	0.020	12.5	0.23		
	Aguila/Carefree	33	0.043	27.4	0.23		
	Aguila/Carefree	6	0.005	3.4	0.62		
	Aguila/Carefree	61	0.013	8.4	0.15		
	Aguila/Carefree	96	0.000	0.1	0.07		
	Aguila/Carefree	96	0.076	48.3	0.07		
511G1	Aguila/Carefree	33	0.228	73.4	0.23		
	Aguila/Carefree	72	0.083	26.6	0.09	30.0	100
511G2	Aguila/Carefree	121	0.030	18.8	0.12		

TABLE D.2-10C
Flood Control District of Maricopa County
Rio Verde ADMP - South Hydrology Model
Soil Data

8/1/2006 Effective

Sub Basin ID	Soil Survey	Map Unit	Area (%)	Area Pct	XKSAT (%)	Rock Outcrop (%)
	Aguila/Carefree	33	0.000		0.23	
	Aguila/Carefree	33	0.000	0.1	0.23	
	Aguila/Carefree	33	0.000	0.1	0.23	
	Aguila/Carefree	33	0.127	81.0	0.23	
511G3	Aguila/Carefree	33	0.097	100.0	0.23	
511G4	Aguila/Carefree	121	0.000		0.12	
	Aguila/Carefree	121	0.000		0.12	
	Aguila/Carefree	121	0.001	0.2	0.12	
	Aguila/Carefree	121	0.009	3.0	0.12	
	Aguila/Carefree	33	0.001	0.3	0.23	
	Aguila/Carefree	33	0.008	2.7	0.23	
	Aguila/Carefree	33	0.045	15.0	0.23	
	Aguila/Carefree	33	0.183	61.2	0.23	
	Aguila/Carefree	6	0.053	17.6	0.62	
	Aguila/Carefree	W	0.000			
511H	Aguila/Carefree	33	0.062	20.5	0.23	
	Aguila/Carefree	33	0.144	47.7	0.23	
	Aguila/Carefree	6	0.001	0.2	0.62	
	Aguila/Carefree	6	0.094	30.9	0.62	
	Aguila/Carefree	W	0.003	0.8		
511I	Aguila/Carefree	33	0.011	5.4	0.23	
	Aguila/Carefree	33	0.015	7.4	0.23	
	Aguila/Carefree	33	0.075	38.0	0.23	
	Aguila/Carefree	6	0.000	0.2	0.62	
	Aguila/Carefree	6	0.097	49.0	0.62	
	Aguila/Carefree	96	0.000		0.07	
	Aguila/Carefree	96	0.000		0.07	

TABLE D.2-11A
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Land Use Data – EXISTING CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
Major Basin: 01								
B10W1	DESERT	0.032	26.0	Dry	25.0		0.15	0.050
	DESERT	0.051	41.5	Dry	25.0		0.15	0.050
	DESERT	0.040	32.5	Dry	25.0		0.15	0.050
B10W6A	HILLSIDE	0.024	15.3	Dry	10.0	35	0.15	0.060
	DESERT	0.134	84.7	Dry	25.0		0.15	0.050
B10W6B	DESERT	0.148	90.2	Dry	25.0		0.15	0.050
	HILLSIDE	0.016	9.8	Dry	10.0	35	0.15	0.060
B11W6	DESERT	0.163	100.0	Dry	25.0		0.15	0.050
B12W6	DESERT	0.229	100.0	Dry	25.0		0.15	0.050
B13W1	DESERT	0.210	100.0	Dry	25.0		0.15	0.050
B14W1	DESERT	0.144	100.0	Dry	25.0		0.15	0.050
B14W6	DESERT	0.107	100.0	Dry	25.0		0.15	0.050
B15W1	DESERT	0.024	100.0	Dry	25.0		0.15	0.050
B16W1	DESERT	0.015	100.0	Dry	25.0		0.15	0.050
B17W1	DESERT	0.010	100.0	Dry	25.0		0.15	0.050
B18W1	DESERT	0.049	100.0	Dry	25.0		0.15	0.050
B1W1	DESERT	0.333	100.0	Dry	25.0		0.15	0.050
B1W2	DESERT	0.021	26.7	Dry	25.0		0.15	0.050
	DESERT	0.058	73.3	Dry	25.0		0.15	0.050
B1W3	DESERT	0.425	94.3	Dry	25.0		0.15	0.050
	DESERT	0.026	5.7	Dry	25.0		0.15	0.050
B1W4A	DESERT	0.131	100.0	Dry	25.0		0.15	0.050
B1W4B	DESERT	0.117	100.0	Dry	25.0		0.15	0.050
B1W4C	DESERT	0.104	100.0	Dry	25.0		0.15	0.050
B1W5	DESERT	0.006	2.9	Dry	25.0		0.15	0.050
	DESERT	0.204	97.1	Dry	25.0		0.15	0.050
B1W6	DESERT	0.519	100.0	Dry	25.0		0.15	0.050
B2W1	DESERT	0.119	100.0	Dry	25.0		0.15	0.050
B2W2	DESERT	0.006	5.9	Dry	25.0		0.15	0.050
	DESERT	0.095	94.1	Dry	25.0		0.15	0.050
B2W4A	DESERT	0.004	3.2	Dry	25.0		0.15	0.050
	DESERT	0.120	96.8	Dry	25.0		0.15	0.050
B2W4B	DESERT	0.007	6.8	Dry	25.0		0.15	0.050
	DESERT	0.097	93.2	Dry	25.0		0.15	0.050
B2W4C	DESERT	0.114	86.1	Dry	25.0		0.15	0.050
	DESERT	0.018	13.9	Dry	25.0		0.15	0.050
B2W6	DESERT	0.677	70.7	Dry	25.0		0.15	0.050
	HILLSIDE	0.022	2.3	Dry	10.0	35	0.15	0.060
	DESERT	0.253	26.5	Dry	25.0		0.15	0.050
	HILLSIDE	0.005	0.6	Dry	10.0	35	0.15	0.060
B3W1	DESERT	0.136	100.0	Dry	25.0		0.15	0.050
B3W4	DESERT	0.005	4.9	Dry	25.0		0.15	0.050
	DESERT	0.089	95.1	Dry	25.0		0.15	0.050
B3W5	DESERT	0.080	100.0	Dry	25.0		0.15	0.050
B3W6	HILLSIDE	0.003	0.8	Dry	10.0	35	0.15	0.060
	DESERT	0.358	99.2	Dry	25.0		0.15	0.050
B4W1	DESERT	0.143	100.0	Dry	25.0		0.15	0.050
B4W2	DESERT	0.088	90.9	Dry	25.0		0.15	0.050
	DESERT	0.009	9.1	Dry	25.0		0.15	0.050
B4W4	DESERT	0.192	100.0	Dry	25.0		0.15	0.050
B4W5	DESERT	0.071	100.0	Dry	25.0		0.15	0.050
B4W6A	HILLSIDE	0.004	1.8	Dry	10.0	35	0.15	0.060
	DESERT	0.236	98.2	Dry	25.0		0.15	0.050
B4W6B	HILLSIDE	0.048	25.5	Dry	10.0	35	0.15	0.060
	DESERT	0.141	74.5	Dry	25.0		0.15	0.050
B5W1	DESERT	0.000	0.1	Dry	25.0		0.15	0.050
	DESERT	0.385	99.9	Dry	25.0		0.15	0.050
B5W4A	DESERT	0.018	21.8	Dry	25.0		0.15	0.050
	DESERT	0.059	69.9	Dry	25.0		0.15	0.050
	DESERT	0.007	8.3	Dry	25.0		0.15	0.050
B5W4B	DESERT	0.152	100.0	Dry	25.0		0.15	0.050
B5W5	DESERT	0.085	100.0	Dry	25.0		0.15	0.050
B5W5A	DESERT	0.103	100.0	Dry	25.0		0.15	0.050
B5W6	HILLSIDE	0.013	3.3	Dry	10.0	35	0.15	0.060
	DESERT	0.371	96.7	Dry	25.0		0.15	0.050
B6W1	DESERT	0.010	8.7	Dry	25.0		0.15	0.050

TABLE D.2-11A
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Land Use Data – EXISTING CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
	DESERT	0.100	91.3	Dry	25.0		0.15	0.050
B6W5	DESERT	0.104	100.0	Dry	25.0		0.15	0.050
B6W6	DESERT	0.217	100.0	Dry	25.0		0.15	0.050
B7W1	DESERT	0.001	0.4	Dry	25.0		0.15	0.050
	DESERT	0.145	99.6	Dry	25.0		0.15	0.050
B7W5	DESERT	0.141	100.0	Dry	25.0		0.15	0.050
B7W6	HILLSIDE	0.089	33.7	Dry	10.0	35	0.15	0.060
	DESERT	0.175	66.3	Dry	25.0		0.15	0.050
B8W1	DESERT	0.152	100.0	Dry	25.0		0.15	0.050
B8W6	HILLSIDE	0.019	17.5	Dry	10.0	35	0.15	0.060
	DESERT	0.089	82.5	Dry	25.0		0.15	0.050
B9W1	DESERT	0.041	38.3	Dry	25.0		0.15	0.050
	DESERT	0.065	60.5	Dry	25.0		0.15	0.050
	DESERT	0.001	1.2	Dry	25.0		0.15	0.050
B9W6	DESERT	0.034	6.1	Dry	25.0		0.15	0.050
	DESERT	0.519	93.9	Dry	25.0		0.15	0.050
B13W6A	DESERT	0.024	21.3	Dry	25.0		0.15	0.050
	DESERT	0.089	78.7	Dry	25.0		0.15	0.050
B13W6B	DESERT	0.098	51.1	Dry	25.0		0.15	0.050
	DESERT	0.094	48.9	Dry	25.0		0.15	0.050

TABLE D.2-11B
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Land Use Data – FUTURE CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
Major Basin: 01								
B10W1	DESERT	0.032	26.0	Dry	25.0		0.15	0.050
	VLDR	0.051	41.5	Dry	10.0	15	0.10	0.045
	DESERT	0.040	32.5	Dry	25.0		0.15	0.050
B10W6A	HILLSIDE	0.024	15.3	Dry	10.0	35	0.15	0.060
	VLDR	0.134	84.7	Dry	10.0	15	0.10	0.045
B10W6B	VLDR	0.148	90.2	Dry	10.0	15	0.10	0.045
	HILLSIDE	0.016	9.8	Dry	10.0	35	0.15	0.060
B11W6	VLDR	0.163	100.0	Dry	10.0	15	0.10	0.045
B12W6	VLDR	0.229	100.0	Dry	10.0	15	0.10	0.045
B13W1	DESERT	0.210	100.0	Dry	25.0		0.15	0.050
B13W6A	VLDR	0.024	21.3	Dry	10.0	15	0.10	0.045
	DESERT	0.089	78.7	Dry	25.0		0.15	0.050
B13W6B	VLDR	0.098	51.1	Dry	10.0	15	0.10	0.045
	DESERT	0.094	48.9	Dry	25.0		0.15	0.050
B14W1	DESERT	0.144	100.0	Dry	25.0		0.15	0.050
B14W6	VLDR	0.107	100.0	Dry	10.0	15	0.10	0.045
B15W1	DESERT	0.024	100.0	Dry	25.0		0.15	0.050
B16W1	DESERT	0.015	100.0	Dry	25.0		0.15	0.050
B17W1	DESERT	0.010	100.0	Dry	25.0		0.15	0.050
B18W1	DESERT	0.049	100.0	Dry	25.0		0.15	0.050
B1W1	DESERT	0.333	100.0	Dry	25.0		0.15	0.050
B1W2	VLDR	0.021	26.7	Dry	10.0	15	0.10	0.045
	DESERT	0.058	73.3	Dry	25.0		0.15	0.050
B1W3	DESERT	0.425	94.3	Dry	25.0		0.15	0.050
	VLDR	0.026	5.7	Dry	10.0	15	0.10	0.045
B1W4A	VLDR	0.131	100.0	Dry	10.0	15	0.10	0.045
B1W4B	VLDR	0.117	100.0	Dry	10.0	15	0.10	0.045
B1W4C	VLDR	0.104	100.0	Dry	10.0	15	0.10	0.045
B1W5	VLDR	0.006	2.9	Dry	10.0	15	0.10	0.045
	DESERT	0.204	97.1	Dry	25.0		0.15	0.050
B1W6	VLDR	0.519	100.0	Dry	10.0	15	0.10	0.045
B2W1	DESERT	0.119	100.0	Dry	25.0		0.15	0.050
B2W2	VLDR	0.006	5.9	Dry	10.0	15	0.10	0.045
	DESERT	0.095	94.1	Dry	25.0		0.15	0.050
B2W4A	DESERT	0.004	3.2	Dry	25.0		0.15	0.050
	VLDR	0.120	96.8	Dry	10.0	15	0.10	0.045
B2W4B	DESERT	0.007	6.8	Dry	25.0		0.15	0.050
	VLDR	0.097	93.2	Dry	10.0	15	0.10	0.045
B2W4C	DESERT	0.114	86.1	Dry	25.0		0.15	0.050
	VLDR	0.018	13.9	Dry	10.0	15	0.10	0.045
B2W6	VLDR	0.677	70.7	Dry	10.0	15	0.10	0.045
	HILLSIDE	0.022	2.3	Dry	10.0	35	0.15	0.060
	DESERT	0.253	26.5	Dry	25.0		0.15	0.050
	HILLSIDE	0.005	0.6	Dry	10.0	35	0.15	0.060
B3W1	DESERT	0.136	100.0	Dry	25.0		0.15	0.050
B3W4	DESERT	0.005	4.9	Dry	25.0		0.15	0.050
	VLDR	0.089	95.1	Dry	10.0	15	0.10	0.045
B3W5	DESERT	0.080	100.0	Dry	25.0		0.15	0.050
B3W6	HILLSIDE	0.003	0.8	Dry	10.0	35	0.15	0.060
	VLDR	0.358	99.2	Dry	10.0	15	0.10	0.045
B4W1	DESERT	0.143	100.0	Dry	25.0		0.15	0.050
B4W2	DESERT	0.088	90.9	Dry	25.0		0.15	0.050
	VLDR	0.009	9.1	Dry	10.0	15	0.10	0.045
B4W4	DESERT	0.192	100.0	Dry	25.0		0.15	0.050
B4W5	DESERT	0.071	100.0	Dry	25.0		0.15	0.050
B4W6A	HILLSIDE	0.004	1.8	Dry	10.0	35	0.15	0.060
	VLDR	0.236	98.2	Dry	10.0	15	0.10	0.045
B4W6B	HILLSIDE	0.048	25.5	Dry	10.0	35	0.15	0.060
	VLDR	0.141	74.5	Dry	10.0	15	0.10	0.045
B5W1	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
	DESERT	0.385	99.9	Dry	25.0		0.15	0.050
B5W4A	VLDR	0.018	21.8	Dry	10.0	15	0.10	0.045
	DESERT	0.059	69.9	Dry	25.0		0.15	0.050
	VLDR	0.007	8.3	Dry	10.0	15	0.10	0.045
B5W4B	DESERT	0.152	100.0	Dry	25.0		0.15	0.050
B5W5	DESERT	0.085	100.0	Dry	25.0		0.15	0.050

TABLE D.2-11B
Flood Control District of Maricopa County
Rio Verde ADMP - North North Hydrology Model
Land Use Data – FUTURE CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
B5W5A	DESERT	0.103	100.0	Dry	25.0		0.15	0.050
B5W6	HILLSIDE	0.013	3.3	Dry	10.0	35	0.15	0.060
	VLDR	0.371	96.7	Dry	10.0	15	0.10	0.045
B6W1	VLDR	0.010	8.7	Dry	10.0	15	0.10	0.045
	DESERT	0.100	91.3	Dry	25.0		0.15	0.050
B6W5	DESERT	0.104	100.0	Dry	25.0		0.15	0.050
B6W6	VLDR	0.217	100.0	Dry	10.0	15	0.10	0.045
B7W1	VLDR	0.001	0.4	Dry	10.0	15	0.10	0.045
	DESERT	0.145	99.6	Dry	25.0		0.15	0.050
B7W5	DESERT	0.141	100.0	Dry	25.0		0.15	0.050
B7W6	HILLSIDE	0.089	33.7	Dry	10.0	35	0.15	0.060
	VLDR	0.175	66.3	Dry	10.0	15	0.10	0.045
B8W1	DESERT	0.152	100.0	Dry	25.0		0.15	0.050
B8W6	HILLSIDE	0.019	17.5	Dry	10.0	35	0.15	0.060
	VLDR	0.089	82.5	Dry	10.0	15	0.10	0.045
B9W1	DESERT	0.041	38.3	Dry	25.0		0.15	0.050
	VLDR	0.065	60.5	Dry	10.0	15	0.10	0.045
	DESERT	0.001	1.2	Dry	25.0		0.15	0.050
B9W6	DESERT	0.034	6.1	Dry	25.0		0.15	0.050
	VLDR	0.519	93.9	Dry	10.0	15	0.10	0.045

TABLE D.2-11C
Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Land Use Data – EXISTING CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
Major Basin: 01								
1B1	DESERT	0.494	100.0	Dry	25.0		0.15	0.050
1B2	DESERT	0.161	100.0	Dry	25.0		0.15	0.050
1B3	DESERT	0.129	100.0	Dry	25.0		0.15	0.050
1B4	DESERT	0.141	100.0	Dry	25.0		0.15	0.050
1N	DESERT	0.131	100.0	Dry	25.0		0.15	0.050
1S	DESERT	0.188	100.0	Dry	25.0		0.15	0.050
2A	DESERT	0.000	0.3	Dry	25.0		0.15	0.050
	DESERT	0.031	99.7	Dry	25.0		0.15	0.050
2B1	DESERT	0.472	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
2B2	DESERT	0.533	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
2B3	DESERT	0.259	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
2B4	DESERT	0.212	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
2B5	DESERT	0.125	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
2B6	DESERT	0.308	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
2N	DESERT	0.002	0.7	Dry	25.0		0.15	0.050
	DESERT	0.203	99.3	Dry	25.0		0.15	0.050
2S	DESERT	0.002	1.6	Dry	25.0		0.15	0.050
	DESERT	0.091	98.4	Dry	25.0		0.15	0.050
3B1	DESERT	0.098	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
3B2	DESERT	0.221	64.6	Dry	25.0		0.15	0.050
	DESERT	0.114	33.5	Dry	25.0		0.15	0.050
	VLDR	0.006	1.8	Dry	10.0	15	0.10	0.045
	DESERT	0.000	0.1	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
3N	DESERT	0.002	1.4	Dry	25.0		0.15	0.050
	DESERT	0.109	98.6	Dry	25.0		0.15	0.050
3S	VLDR	0.010	10.9	Dry	10.0	15	0.10	0.045
	DESERT	0.052	59.9	Dry	25.0		0.15	0.050
	DESERT	0.025	29.2	Dry	25.0		0.15	0.050
4A	DESERT	0.001	1.0	Dry	25.0		0.15	0.050
	DESERT	0.081	99.0	Dry	25.0		0.15	0.050
4B1	DESERT	0.368	100.0	Dry	25.0		0.15	0.050
4B2	DESERT	0.240	100.0	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
4N	VLDR	0.029	39.2	Dry	10.0	15	0.10	0.045
	DESERT	0.045	60.8	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
4N1	DESERT	0.011	22.6	Dry	25.0		0.15	0.050
	DESERT	0.039	77.4	Dry	25.0		0.15	0.050
5B1	DESERT	0.099	99.7	Dry	25.0		0.15	0.050
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
	DESERT	0.000	0.1	Dry	25.0		0.15	0.050
5B2	DESERT	0.123	99.1	Dry	25.0		0.15	0.050
	DESERT	0.000	0.2	Dry	25.0		0.15	0.050
	DESERT	0.001	0.6	Dry	25.0		0.15	0.050
6B	DESERT	0.003	1.3	Dry	25.0		0.15	0.050
	DESERT	0.201	98.7	Dry	25.0		0.15	0.050
8B1	DESERT	0.001	0.7	Dry	25.0		0.15	0.050
	VLDR	0.003	4.2	Dry	10.0	15	0.10	0.045
	VLDR	0.001	1.0	Dry	10.0	15	0.10	0.045
	DESERT	0.001	0.7	Dry	25.0		0.15	0.050
	DESERT	0.014	18.2	Dry	25.0		0.15	0.050
	VLDR	0.012	15.5	Dry	10.0	15	0.10	0.045
	DESERT	0.027	35.6	Dry	25.0		0.15	0.050
	DESERT	0.018	24.1	Dry	25.0		0.15	0.050

TABLE D.2-11C
Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Land Use Data – EXISTING CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
	DESERT	0.000		Dry	25.0		0.15	0.050
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	DESERT	0.000		Dry	25.0		0.15	0.050
	VLDR	0.000		Dry	10.0	15	0.10	0.045
8B2	DESERT	0.004	5.8	Dry	25.0		0.15	0.050
	VLDR	0.001	0.9	Dry	10.0	15	0.10	0.045
	DESERT	0.002	2.7	Dry	25.0		0.15	0.050
	DESERT	0.026	39.9	Dry	25.0		0.15	0.050
	VLDR	0.005	7.8	Dry	10.0	15	0.10	0.045
	DESERT	0.028	42.9	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
9B	DESERT	0.066	33.0	Dry	25.0		0.15	0.050
	DESERT	0.005	2.5	Dry	25.0		0.15	0.050
	VLDR	0.008	4.0	Dry	10.0	15	0.10	0.045
	DESERT	0.016	8.1	Dry	25.0		0.15	0.050
	VLDR	0.003	1.5	Dry	10.0	15	0.10	0.045
	VLDR	0.005	2.4	Dry	10.0	15	0.10	0.045
	VLDR	0.012	5.8	Dry	10.0	15	0.10	0.045
	DESERT	0.010	5.0	Dry	25.0		0.15	0.050
	VLDR	0.002	0.8	Dry	10.0	15	0.10	0.045
	DESERT	0.050	24.8	Dry	25.0		0.15	0.050
	DESERT	0.024	12.2	Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.000		Dry	25.0		0.15	0.050
	VLDR	0.000		Dry	10.0	15	0.10	0.045

TABLE D.2-11D
Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Land Use Data – FUTURE CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
Major Basin: 01								
1B1	VLDR	0.494	100.0	Dry	10.0	15	0.10	0.045
1B2	VLDR	0.161	100.0	Dry	10.0	15	0.10	0.045
1B3	VLDR	0.129	100.0	Dry	10.0	15	0.10	0.045
1B4	VLDR	0.141	100.0	Dry	10.0	15	0.10	0.045
1N	VLDR	0.131	100.0	Dry	10.0	15	0.10	0.045
1S	VLDR	0.188	100.0	Dry	10.0	15	0.10	0.045
2A	VLDR	0.000	0.3	Dry	10.0	15	0.10	0.045
	VLDR	0.031	99.7	Dry	10.0	15	0.10	0.045
2B1	VLDR	0.472	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
2B2	VLDR	0.533	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
2B3	VLDR	0.259	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
2B4	VLDR	0.212	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
2B5	VLDR	0.125	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
2B6	VLDR	0.308	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
2N	VLDR	0.002	0.7	Dry	10.0	15	0.10	0.045
	VLDR	0.203	99.3	Dry	10.0	15	0.10	0.045
2S	VLDR	0.002	1.6	Dry	10.0	15	0.10	0.045
	VLDR	0.091	98.4	Dry	10.0	15	0.10	0.045
3B1	VLDR	0.098	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
3B2	VLDR	0.221	64.6	Dry	10.0	15	0.10	0.045
	VLDR	0.114	33.5	Dry	10.0	15	0.10	0.045
	VLDR	0.006	1.8	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
3N	VLDR	0.002	1.4	Dry	10.0	15	0.10	0.045
	VLDR	0.109	98.6	Dry	10.0	15	0.10	0.045
3S	VLDR	0.010	10.9	Dry	10.0	15	0.10	0.045
	VLDR	0.052	59.9	Dry	10.0	15	0.10	0.045
	VLDR	0.025	29.2	Dry	10.0	15	0.10	0.045
4A	VLDR	0.001	1.0	Dry	10.0	15	0.10	0.045
	VLDR	0.081	99.0	Dry	10.0	15	0.10	0.045
4B1	VLDR	0.368	100.0	Dry	10.0	15	0.10	0.045
4B2	VLDR	0.240	100.0	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
4N	VLDR	0.029	39.2	Dry	10.0	15	0.10	0.045
	VLDR	0.045	60.8	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
4N1	VLDR	0.011	22.6	Dry	10.0	15	0.10	0.045
	VLDR	0.039	77.4	Dry	10.0	15	0.10	0.045
5B1	VLDR	0.099	99.7	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
5B2	VLDR	0.123	99.1	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
	VLDR	0.001	0.6	Dry	10.0	15	0.10	0.045
6B	VLDR	0.003	1.3	Dry	10.0	15	0.10	0.045
	VLDR	0.201	98.7	Dry	10.0	15	0.10	0.045
8B1	VLDR	0.001	0.7	Dry	10.0	15	0.10	0.045
	VLDR	0.003	4.2	Dry	10.0	15	0.10	0.045
	VLDR	0.001	1.0	Dry	10.0	15	0.10	0.045
	VLDR	0.001	0.7	Dry	10.0	15	0.10	0.045
	VLDR	0.014	18.2	Dry	10.0	15	0.10	0.045
	VLDR	0.012	15.5	Dry	10.0	15	0.10	0.045
	VLDR	0.027	35.6	Dry	10.0	15	0.10	0.045
	VLDR	0.018	24.1	Dry	10.0	15	0.10	0.045

TABLE D.2-11D
Flood Control District of Maricopa County
Rio Verde ADMP - North South Hydrology Model
Land Use Data – FUTURE CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
8B2	VLDR	0.004	5.8	Dry	10.0	15	0.10	0.045
	VLDR	0.001	0.9	Dry	10.0	15	0.10	0.045
	VLDR	0.002	2.7	Dry	10.0	15	0.10	0.045
	VLDR	0.026	39.9	Dry	10.0	15	0.10	0.045
	VLDR	0.005	7.8	Dry	10.0	15	0.10	0.045
	VLDR	0.028	42.9	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
9B	VLDR	0.066	33.0	Dry	10.0	15	0.10	0.045
	VLDR	0.005	2.5	Dry	10.0	15	0.10	0.045
	VLDR	0.008	4.0	Dry	10.0	15	0.10	0.045
	VLDR	0.016	8.1	Dry	10.0	15	0.10	0.045
	VLDR	0.003	1.5	Dry	10.0	15	0.10	0.045
	VLDR	0.005	2.4	Dry	10.0	15	0.10	0.045
	VLDR	0.012	5.8	Dry	10.0	15	0.10	0.045
	VLDR	0.010	5.0	Dry	10.0	15	0.10	0.045
	VLDR	0.002	0.8	Dry	10.0	15	0.10	0.045
	VLDR	0.050	24.8	Dry	10.0	15	0.10	0.045
	VLDR	0.024	12.2	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045

TABLE D.2-11E
Flood Control District of Maricopa County
Rio Verde ADMP – South Hydrology Model
Land Use Data – EXISTING CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
Major Basin: 01								
500A	DESERT	0.193	94.8	Dry	25.0		0.15	0.050
	VLDR	0.006	3.1	Dry	10.0	15	0.10	0.045
	VLDR	0.004	2.2	Dry	10.0	15	0.10	0.045
500B	DESERT	0.095	49.4	Dry	25.0		0.15	0.050
	VLDR	0.009	4.5	Dry	10.0	15	0.10	0.045
	VLDR	0.089	46.1	Dry	10.0	15	0.10	0.045
509A1	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.098	51.1	Dry	25.0		0.15	0.050
	DESERT	0.037	19.0	Dry	25.0		0.15	0.050
	VLDR	0.058	29.9	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
509A2	DESERT	0.006	4.3	Dry	25.0		0.15	0.050
	DESERT	0.075	58.6	Dry	25.0		0.15	0.050
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.015	11.7	Dry	10.0	15	0.10	0.045
	VLDR	0.033	25.4	Dry	10.0	15	0.10	0.045
509A3	DESERT	0.097	59.5	Dry	25.0		0.15	0.050
	DESERT	0.028	17.1	Dry	25.0		0.15	0.050
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
	VLDR	0.038	23.2	Dry	10.0	15	0.10	0.045
509A4	DESERT	0.060	96.6	Dry	25.0		0.15	0.050
	VLDR	0.001	1.1	Dry	10.0	15	0.10	0.045
	VLDR	0.001	2.3	Dry	10.0	15	0.10	0.045
509A5	DESERT	0.000		Dry	25.0		0.15	0.050
	DESERT	0.004	17.6	Dry	25.0		0.15	0.050
	DESERT	0.004	20.6	Dry	25.0		0.15	0.050
	VLDR	0.013	61.8	Dry	10.0	15	0.10	0.045
509A6	DESERT	0.029	91.6	Dry	25.0		0.15	0.050
	DESERT	0.002	4.7	Dry	25.0		0.15	0.050
	DESERT	0.001	3.7	Dry	25.0		0.15	0.050
509B	DESERT	0.650	99.4	Dry	25.0		0.15	0.050
	VLDR	0.004	0.6	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
509D	DESERT	0.283	73.9	Dry	25.0		0.15	0.050
	VLDR	0.084	22.1	Dry	10.0	15	0.10	0.045
	VLDR	0.015	4.0	Dry	10.0	15	0.10	0.045
510A	DESERT	0.003	0.3	Dry	25.0		0.15	0.050
	DESERT	0.006	0.6	Dry	25.0		0.15	0.050
	DESERT	0.321	34.7	Dry	25.0		0.15	0.050
	VLDR	0.029	3.2	Dry	10.0	15	0.10	0.045
	VLDR	0.565	61.2	Dry	10.0	15	0.10	0.045
511A1	DESERT	0.283	96.2	Dry	25.0		0.15	0.050
	DESERT	0.002	0.5	Dry	25.0		0.15	0.050
	VLDR	0.010	3.3	Dry	10.0	15	0.10	0.045
511A2	DESERT	0.059	100.0	Dry	25.0		0.15	0.050
511A3	DESERT	0.294	100.0	Dry	25.0		0.15	0.050
511B1	DESERT	0.583	100.0	Dry	25.0		0.15	0.050
511B2	DESERT	0.221	99.3	Dry	25.0		0.15	0.050
	VLDR	0.002	0.7	Dry	10.0	15	0.10	0.045
511B3	DESERT	0.080	100.0	Dry	25.0		0.15	0.050
511B4	DESERT	0.194	100.0	Dry	25.0		0.15	0.050
511C1	DESERT	0.329	100.0	Dry	25.0		0.15	0.050
511C2	DESERT	0.392	100.0	Dry	25.0		0.15	0.050
511C3	DESERT	0.141	100.0	Dry	25.0		0.15	0.050
511C4	DESERT	0.020	100.0	Dry	25.0		0.15	0.050
511C5	DESERT	0.111	100.0	Dry	25.0		0.15	0.050
511C6	DESERT	0.035	100.0	Dry	25.0		0.15	0.050
511C7	DESERT	0.086	70.9	Dry	25.0		0.15	0.050
	VLDR	0.035	29.1	Dry	10.0	15	0.10	0.045
511C8	DESERT	0.041	100.0	Dry	25.0		0.15	0.050
511D	DESERT	0.121	99.8	Dry	25.0		0.15	0.050
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
511E1	DESERT	0.292	98.7	Dry	25.0		0.15	0.050
	VLDR	0.004	1.4	Dry	10.0	15	0.10	0.045
511E2	DESERT	0.253	91.5	Dry	25.0		0.15	0.050
	DESERT	0.001	0.4	Dry	25.0		0.15	0.050

TABLE D.2-11E
Flood Control District of Maricopa County
Rio Verde ADMP – South Hydrology Model
Land Use Data – EXISTING CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
	VLDR	0.022	8.1	Dry	10.0	15	0.10	0.045
511F	DESERT	0.001	0.3	Dry	25.0		0.15	0.050
	DESERT	0.117	74.1	Dry	25.0		0.15	0.050
	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
	VLDR	0.034	21.7	Dry	10.0	15	0.10	0.045
	VLDR	0.006	3.7	Dry	10.0	15	0.10	0.045
511G1	DESERT	0.310	100.0	Dry	25.0		0.15	0.050
511G2	DESERT	0.157	100.0	Dry	25.0		0.15	0.050
511G3	DESERT	0.097	100.0	Dry	25.0		0.15	0.050
511G4	DESERT	0.282	94.6	Dry	25.0		0.15	0.050
	VLDR	0.002	0.6	Dry	10.0	15	0.10	0.045
	VLDR	0.009	3.2	Dry	10.0	15	0.10	0.045
	VLDR	0.005	1.7	Dry	10.0	15	0.10	0.045
511H	DESERT	0.275	91.0	Dry	25.0		0.15	0.050
	VLDR	0.005	1.7	Dry	10.0	15	0.10	0.045
	VLDR	0.005	1.5	Dry	10.0	15	0.10	0.045
	VLDR	0.006	2.0	Dry	10.0	15	0.10	0.045
	VLDR	0.009	2.9	Dry	10.0	15	0.10	0.045
	VLDR	0.003	0.9	Dry	10.0	15	0.10	0.045
511I	DESERT	0.167	84.3	Dry	25.0		0.15	0.050
	VLDR	0.031	15.7	Dry	10.0	15	0.10	0.045

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
Major Basin: 01								
500A	VLDR	0.193	94.8	Dry	10.0	15	0.10	0.045
	VLDR	0.006	3.1	Dry	10.0	15	0.10	0.045
	VLDR	0.004	2.2	Dry	10.0	15	0.10	0.045
500B	VLDR	0.095	49.4	Dry	10.0	15	0.10	0.045
	VLDR	0.009	4.5	Dry	10.0	15	0.10	0.045
	VLDR	0.089	46.1	Dry	10.0	15	0.10	0.045
509A1	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.098	51.1	Dry	10.0	15	0.10	0.045
	VLDR	0.037	19.0	Dry	10.0	15	0.10	0.045
	VLDR	0.058	29.9	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
509A2	VLDR	0.006	4.3	Dry	10.0	15	0.10	0.045
	VLDR	0.075	58.6	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.015	11.7	Dry	10.0	15	0.10	0.045
	VLDR	0.033	25.4	Dry	10.0	15	0.10	0.045
509A3	VLDR	0.097	59.5	Dry	10.0	15	0.10	0.045
	VLDR	0.028	17.1	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
	VLDR	0.038	23.2	Dry	10.0	15	0.10	0.045
509A4	VLDR	0.060	96.6	Dry	10.0	15	0.10	0.045
	VLDR	0.001	1.1	Dry	10.0	15	0.10	0.045
	VLDR	0.001	2.3	Dry	10.0	15	0.10	0.045
509A5	VLDR	0.000		Dry	10.0	15	0.10	0.045
	VLDR	0.004	17.6	Dry	10.0	15	0.10	0.045
	VLDR	0.004	20.6	Dry	10.0	15	0.10	0.045
	VLDR	0.013	61.8	Dry	10.0	15	0.10	0.045
509A6	VLDR	0.029	91.6	Dry	10.0	15	0.10	0.045
	VLDR	0.002	4.7	Dry	10.0	15	0.10	0.045
	VLDR	0.001	3.7	Dry	10.0	15	0.10	0.045
509B	VLDR	0.650	99.4	Dry	10.0	15	0.10	0.045
	VLDR	0.004	0.6	Dry	10.0	15	0.10	0.045
	VLDR	0.000		Dry	10.0	15	0.10	0.045
509D	VLDR	0.283	73.9	Dry	10.0	15	0.10	0.045
	VLDR	0.084	22.1	Dry	10.0	15	0.10	0.045
	VLDR	0.015	4.0	Dry	10.0	15	0.10	0.045
510A	VLDR	0.003	0.3	Dry	10.0	15	0.10	0.045
	VLDR	0.006	0.6	Dry	10.0	15	0.10	0.045
	VLDR	0.321	34.7	Dry	10.0	15	0.10	0.045
	VLDR	0.029	3.2	Dry	10.0	15	0.10	0.045
	VLDR	0.565	61.2	Dry	10.0	15	0.10	0.045
511A1	VLDR	0.283	96.2	Dry	10.0	15	0.10	0.045
	VLDR	0.002	0.5	Dry	10.0	15	0.10	0.045
	VLDR	0.010	3.3	Dry	10.0	15	0.10	0.045
511A2	VLDR	0.059	100.0	Dry	10.0	15	0.10	0.045
511A3	VLDR	0.294	100.0	Dry	10.0	15	0.10	0.045
511B1	VLDR	0.583	100.0	Dry	10.0	15	0.10	0.045
511B2	VLDR	0.221	99.3	Dry	10.0	15	0.10	0.045
	VLDR	0.002	0.7	Dry	10.0	15	0.10	0.045
511B3	VLDR	0.080	100.0	Dry	10.0	15	0.10	0.045
511B4	VLDR	0.194	100.0	Dry	10.0	15	0.10	0.045
511C1	VLDR	0.329	100.0	Dry	10.0	15	0.10	0.045
511C2	VLDR	0.392	100.0	Dry	10.0	15	0.10	0.045
511C3	VLDR	0.141	100.0	Dry	10.0	15	0.10	0.045
511C4	VLDR	0.020	100.0	Dry	10.0	15	0.10	0.045
511C5	VLDR	0.111	100.0	Dry	10.0	15	0.10	0.045
511C6	VLDR	0.035	100.0	Dry	10.0	15	0.10	0.045
511C7	VLDR	0.086	70.9	Dry	10.0	15	0.10	0.045
	VLDR	0.035	29.1	Dry	10.0	15	0.10	0.045
511C8	VLDR	0.041	100.0	Dry	10.0	15	0.10	0.045
511D	VLDR	0.121	99.8	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.2	Dry	10.0	15	0.10	0.045
511E1	VLDR	0.292	98.7	Dry	10.0	15	0.10	0.045
	VLDR	0.004	1.4	Dry	10.0	15	0.10	0.045
511E2	VLDR	0.253	91.5	Dry	10.0	15	0.10	0.045
	VLDR	0.001	0.4	Dry	10.0	15	0.10	0.045
	VLDR	0.022	8.1	Dry	10.0	15	0.10	0.045

TABLE D.2-11F
Flood Control District of Maricopa County
Rio Verde ADMP – South Hydrology Model
Land Use Data – FUTURE CONDITION

8/1/2006

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
511F	VLDR	0.001	0.3	Dry	10.0	15	0.10	0.045
	VLDR	0.117	74.1	Dry	10.0	15	0.10	0.045
	VLDR	0.000	0.1	Dry	10.0	15	0.10	0.045
	VLDR	0.034	21.7	Dry	10.0	15	0.10	0.045
	VLDR	0.006	3.7	Dry	10.0	15	0.10	0.045
511G1	VLDR	0.310	100.0	Dry	10.0	15	0.10	0.045
511G2	VLDR	0.157	100.0	Dry	10.0	15	0.10	0.045
511G3	VLDR	0.097	100.0	Dry	10.0	15	0.10	0.045
511G4	VLDR	0.282	94.6	Dry	10.0	15	0.10	0.045
	VLDR	0.002	0.6	Dry	10.0	15	0.10	0.045
	VLDR	0.009	3.2	Dry	10.0	15	0.10	0.045
	VLDR	0.005	1.7	Dry	10.0	15	0.10	0.045
511H	VLDR	0.275	91.0	Dry	10.0	15	0.10	0.045
	VLDR	0.005	1.7	Dry	10.0	15	0.10	0.045
	VLDR	0.005	1.5	Dry	10.0	15	0.10	0.045
	VLDR	0.006	2.0	Dry	10.0	15	0.10	0.045
	VLDR	0.009	2.9	Dry	10.0	15	0.10	0.045
	VLDR	0.003	0.9	Dry	10.0	15	0.10	0.045
511I	VLDR	0.167	84.3	Dry	10.0	15	0.10	0.045
	VLDR	0.031	15.7	Dry	10.0	15	0.10	0.045

SECTION D.3 – HYDROGRAPH ROUTING DATA

D.3 HYDROGRAPH ROUTING DATA

(a) North-North Basin – **TABLE D.3-1** lists the routing data for the the north-north basin.

TABLE D.3-1
Routing Data for the North-North Basin

NO.	Reach ID	RC CARD						RS CARD		RX, RY CARDS								Remarks
		ANL	ANCH	ANR	RLNGTH	SEL	ELMAX	NSTPS		1	2	3	4	5	6	7	8	
1	RB11WA	0.06	0.04	0.06	3975.5	0.026160	2504	8	X_i	891.2	920.4	948.4	1002.2	1029.3	1123.9	1170	1233	
									Y_i	2504	2501.3	2501.6	2501.2	2501.9	2501.8	2501.2	2504	
2	RB11WB	0.06	0.04	0.06	3284.3	0.02527	2504	8	X_i	891.2	920.4	948.4	1002.2	1029.3	1123.9	1170	1233	
									Y_i	2504	2501.3	2501.6	2501.2	2501.9	2501.8	2501.2	2504	
3	RB12W6	0.06	0.04	0.06	5915.9	0.02671	2513.3	8	X_i	913.1	932	945.6	957	1017	1062.2	1114.5	1158.6	
									Y_i	2510	2508	2507.8	2507.9	2507.2	2507.9	2509	2513.3	
4	RB13WA	0.06	0.04	0.06	7423.5	0.03529	1638	8	X_i	743.1	818	855.4	862.5	1137.5	1144.7	1174	1232.5	
									Y_i	1638	1625	1612	1610	1610	1612	1625	1638	
5	RB13WB	0.06	0.04	0.06	641.4	0.02806	1560	2	X_i	0	26.2	48.5	140.8	209.5	289.8	303.2	320.4	New
									Y_i	1560	1553.6	1554	1554.8	1554	1552.5	1554	1560	
6	RB1W4B	0.06	0.04	0.06	2065.8	0.02130	2611	2	X_i	0	31.3	79.9	172	197	258.1	272.3	296.2	New
									Y_i	2610	2608	2606	2605	2606	2608	2610	2611	
7	RB2W4B	0.06	0.04	0.06	3686.4	0.02550	2539.4	4	X_i	912.5	945	954.6	970	1016.9	1034.3	1045.8	1081.6	
									Y_i	2539.4	2538	2537.2	2536.4	2536	2531.3	2538	2539.3	
8	RB2W4C	0.06	0.04	0.06	9175.9	0.02528	2539.4	4	X_i	912.5	945	954.6	970	1016.9	1034.3	1045.8	1081.6	
									Y_i	2539.4	2538	2537.2	2536.4	2536	2537.3	2538	2539.3	
9	RB2W6	0.06	0.04	0.06	4434.2	0.02120	2768	4	X_i	722.4	797.6	811.9	894	1001	1183.3	1194.5	1243	
									Y_i	2768	2760	2758	2760	2760	2758.9	2760	2765.9	
10	RB4W4A	0.06	0.04	0.06	8110.3	0.02343	2354	5	X_i	580	605	616	631	635	660	701	762	
									Y_i	2354	2352.7	2352.5	2352.3	2352.3	2352.6	2353.4	2354	
11	RB4W4B	0.06	0.04	0.06	1050.5	0.01904	2314.8	5	X_i	0	18	46.6	90.7	154.6	178.6	197.3	307.9	New
									Y_i	2314.8	2314	2312	2311.2	2310.7	2311.2	2312	2314	
12	RB5W4A	0.06	0.04	0.06	2975.3	0.02084	2352.4	6	X_i	948.4	1000.4	1033.9	1065.3	1116.2	1149.5	1202	1248.6	
									Y_i	2352.4	2351.1	2351.2	2351.7	2351	2351.5	2351	2352.4	
13	RB5W4B	0.06	0.04	0.06	4687.3	0.02432	2370	5	X_i	0	42.2	79.2	92.7	286.7	394.5	502.4	538.1	New
									Y_i	2370	2368	2366	2365.5	2364.2	2365.5	2364.2	2366.5	
14	RB6W1	0.06	0.04	0.06	5152.8	0.02756	2018	7	X_i	885.1	917.4	993.1	1090	1128.2	1186.2	1209.6	1279.8	
									Y_i	2018	2014.8	2016.7	2015.3	2018	2017.4	2016	2018	
15	RB6W5	0.045	0.045	0.045	4399.8	0.02409	2218.6	7	X_i	886	902.2	913.2	956.8	1002.7	1045.2	1060	1076.7	
									Y_i	2217.3	2217	2216.8	2217.8	2217.8	2217.2	2218	2218.6	
16	RB6W6	0.06	0.04	0.06	5260.1	0.02814	2680.3	7	X_i	840.2	877.9	945.2	1019.8	1062.5	1117.4	1123.6	1159.6	
									Y_i	2680.3	2676.3	2677.2	2675.5	2676.8	2674.5	2674.5	2680	

TABLE D.3-1
Routing Data for the North-North Basin

NO.	Reach ID	RC CARD						RS CARD		RX, RY CARDS								Remarks
		ANL	ANCH	ANR	RLNGTH	SEL	ELMAX	NSTPS		1	2	3	4	5	6	7	8	
17	RB7W1	0.06	0.04	0.06	5004.9	0.02797	2030	5	X_i	944.3	993.7	1022.8	1054.8	1127.7	1170.8	1179.2	1226.5	
									Y_i	2030	2020.1	2021.3	2021.3	2019.5	2020.1	2019.7	2030	
18	RB7W5	0.06	0.04	0.06	4035.0	0.02429	2272	7	X_i	835.1	903.3	932.5	1081.2	1288.7	1316.1	1344.6	1382.2	
									Y_i	2271.5	2268.7	2269.1	2268.6	2270.1	2260.6	2269.7	2272	
19	RB7W6	0.06	0.04	0.06	5674.0	0.03137	2721.9	8	X_i	967.3	969.1	973.5	1014	1024.7	1033	1047.6	1056	
									Y_i	2721.9	2721.1	2720.7	2720.1	2720.3	2720.8	2721.6	2721.9	
20	RB9W1A	0.06	0.04	0.06	5840.8	0.03185	1884	8	X_i	693	735.4	785	820.4	877.4	990	1016	1059.6	
									Y_i	1884	1880.4	1881.2	1880.9	1881.6	1880.8	1880.4	1884	
21	RB9W1B	0.06	0.04	0.06	1232.5	0.02921	1838	4	X_i	916.6	936.5	967.9	982.9	1009.5	1038.5	1095.3	1140.2	
									Y_i	1838	1833	1828	1827.3	1827.2	1828	1829.9	1830	
22	RB9W6	0.06	0.04	0.06	6715.9	0.02308	2492.3	4	X_i	827.5	860.5	876.8	922.6	983.1	1059.4	1096.4	1149.6	
									Y_i	2492.3	2491.2	2490.5	2489.3	2489.4	2490.4	2491.3	2492	
23	RB9W6A	0.06	0.04	0.06	6768.2	0.02423	2548	4	X_i	59	108	130	181	203	212	251	416	
									Y_i	2548	2544	2542	2541	2542	2544	2546	2548	

NOTE: The RC Record (Normal-Depth Channel Routing) is used in combination with the RX and RY records to describe the channel in a routing reach. The variables in the RC Record are: ANL (Left overbank Manning's n value), ANCH (Channel Manning's n value), ANR (Right overbank Manning's n value), RLNTH (Reach length, in feet), SEL (Energy grade line slope in ft/ft), ELMAX (Maximum elevation for which storage and outflow values are to be computed. The default is the maximum elevation on RY Record). NSTPS defines the number of steps to be used in the storage routing, which is about equal to (reach length/average velocity/ time interval). The RX Record defines the cross-section X coordinates, in which the left bank and right bank of channel are assumed to be located at points 3 and 6, repectively, of the cross-section. The RY Record defines the cross-section Y coordinates, in which the left and right bank of channel are assumed to be located at points 3 and 6, respectively, of the cross-section.

(b) North-South Basin – **TABLE D.3-2** lists the routing data for the north-south basin.

TABLE D.3-2
Routing Data for the North-South Basin

NO.	Reach ID	RC CARD						RS CARD		RX, RY CARDS								REMARKS
		ANL	ANCH	ANR	RLNGTH	SEL	ELMAX	NSTPS		1	2	3	4	5	6	7	8	
1	RT1112	0.06	0.045	0.06	10466.3	0.022	82.3	9	X_i	0	55	110	165	520	580	630	730	
									Y_i	82	80	80	82	82.3	80	80	82	
2	RT1314	0.045	0.04	0.045	7191.1	0.0225	82.3	6	X_i	0	55	110	165	520	580	630	730	
									Y_i	82	80	80	82	82.3	80	80	82	
3	RT2122	0.06	0.045	0.06	4908.7	0.0159	2708	3	X_i	0	21.5	45.4	106.3	127.2	150.7	278.9	305.2	New
									Y_i	2708	2706	2704	2702	2700	2700	2704	2704.4	
4	RT2226	0.05	0.04	0.05	4243.8	0.0118	2628	6	X_i	0	87.2	131.2	144.4	173.8	435.1	470.9	555.8	New
									Y_i	2628	2626	2624	2622	2621	2622	2624	2628	
5	RT4526	0.06	0.045	0.06	4060.3	0.0113	2628	4	X_i	0	87.2	131.2	144.4	173.8	435.1	470.9	555.8	New
									Y_i	2628	2626	2624	2622	2621	2622	2624	2628	
6	RT1S2S	0.06	0.045	0.06	4833.1	0.0252	100	3	X_i	0	88	100	115	131	152	163	200	
									Y_i	100	92	91	92	94	96	98	100	

TABLE D.3-2
Routing Data for the North-South Basin

NO.	Reach ID	RC CARD						RS CARD		RX, RY CARDS								REMARKS
		ANL	ANCH	ANR	RLNGTH	SEL	ELMAX	NSTPS		1	2	3	4	5	6	7	8	
7	RT2632	0.07	0.05	0.07	8967.1	0.0221	20	4	X_i	0	68.2	216.8	370.2	450.7	491.4	528.9	590.1	
									Y_i	20	16	13.8	14	13.2	14	18	20	
8	RT3132	0.06	0.045	0.06	3657.2	0.0202	52	4	X_i	0	55	213	227	234	315	428	450	
									Y_i	50	48.4	48	47.7	48	51.1	50	52	
9	RT2S3S	0.05	0.05	0.05	2773.9	0.0231	29.1	5	X_i	0	62	70	161.3	193.3	215.9	237.4	240.5	
									Y_i	28.8	26	24.8	23.7	25.9	27.2	28.9	29.1	
10	RT4142	0.05	0.05	0.05	6204	0.0213	64.7	4	X_i	0	36.2	52.6	89.2	115.7	126.3	132.2	136.6	
									Y_i	64.7	60.7	59.1	58.8	61.3	61.5	62.3	62.9	
11	RT2N4N	0.06	0.045	0.06	3991.6	0.0256	72.7	5	X_i	0	72.7	118	159.8	163.3	190.8	200.4	230	
									Y_i	72.4	69.6	69.8	69.3	69.3	70.4	70.9	72.7	
12	RT3N4N	0.06	0.045	0.06	3950.2	0.0248	2510.2	4	X_i	0	7.5	46.2	56.2	72.2	122.4	180.3	197	New
									Y_i	2510.2	2510	2508.2	2508	2508.6	2509.2	2510	2510.1	
13	RT3S4N	0.06	0.045	0.06	1039.9	0.025	2472	4	X_i	0	16.9	39.1	64.9	89.7	113	136.5	170.1	New
									Y_i	2470.7	2470	2468.8	2468.7	2468.9	2469.5	2470	2472	
14	RT1452	0.05	0.05	0.05	2610	0.0207	82.3	3	X_i	0	55	110	165	520	580	630	730	
									Y_i	82	80	80	82	82.3	80	80	82	
15	RT136B	0.06	0.045	0.06	8532.9	0.0234	86.5	12	X_i	0	50	100	130	155	185	230	295	
									Y_i	86.5	84	84	83	84	86	84	86	
16	RT3282	0.06	0.045	0.06	329.2	0.0213	2419.6	9	X_i	0	71.1	89.5	106.2	122.1	195.9	208.1	245.1	New
									Y_i	2417	2416	2414	2413.6	2414	1416	2418	2419.6	
17	RT4282	0.05	0.05	0.05	3773.2	0.0217	64.7	3	X_i	0	36.2	52.6	89.2	115.7	126.3	132.2	136.6	
									Y_i	64.7	60.7	59.1	58.8	61.3	61.5	62.3	62.9	
18	RT519B	0.05	0.05	0.05	5345.8	0.0213	92	3	X_i	0	60	330	355	390	430	550	720	
									Y_i	92	88	88.3	88	87.4	88.3	86.9	92	
19	RT529B	0.045	0.04	0.045	5010.7	0.0216	92	6	X_i	0	60	330	355	390	430	550	720	
									Y_i	92	88	88.3	88	87.4	88.3	86.9	92	
20	RT819B	0.05	0.05	0.05	676.5	0.0177	64.7	3	X_i	0	36.2	52.6	89.2	115.7	126.3	132.2	136.6	
									Y_i	64.7	60.7	59.1	58.8	61.3	61.5	62.3	62.9	
21	RT829B	0.06	0.045	0.06	506.8	0.0178	2410	9	X_i	0	41.1	62.2	68.6	77.2	103.9	144.6	157.5	New
									Y_i	2410	2408	2406	2405.4	2405.4	2406	2408	2408.8	
22	RT2631	0.06	0.045	0.06	5540	0.02202	2556	4	X_i	0	20.5	34.9	58.6	71.4	96	139	169	
									Y_i	2554	2550	2546	2543	2544	2548	2552	2556	
23	RT34N1	0.06	0.045	0.06	940	0.02765	2542.0	5	X_i	0	22	44	67	73	115	161	180	New
									Y_i	2542	2541	2540	2539	2540	2541.5	2541.8	2542	
24	RT4N14	0.06	0.045	0.06	3010	0.02392	72.7	5	X_i	0	72.7	118	159.8	163.3	190.8	200.4	230	
									Y_i	72.4	69.6	69.8	69.3	69.3	70.4	70.9	72.7	

NOTE: The RC Record (Normal-Depth Channel Routing) is used in combination with the RX and RY records to describe the channel in a routing reach. The variables in the RC Record are: ANL (Left overbank Manning's n value), ANCH (Channel Manning's n value), ANR (Right overbank Manning's n value), RLNTH (Reach length, in feet), SEL (Energy grade line slope in ft/ft), ELMAX (Maximum elevation for which storage and outflow values are to be computed. The default is the maximum elevation on RY Record). NSTPS defines the number of steps to be used in the storage routing, which is about equal to (reach length/average velocity/ time interval). The RX Record defines the cross-section X coordinates, in which the left bank and right bank of channel are assumed to be located at points 3 and 6, repectively, of the cross-section. The RY Record defines the cross-section Y coordinates, in which the left and right bank of channel are assumed to be located at points 3 and 6, respectively, of the cross-section.

(c) South Basin – **TABLE D.3-3** lists the routing data for the south basin

TABLE D.3-3
Routing Data for the South Basin

NO.	Reach ID	RC CARD						RS CARD		RX, RY CARDS								REMARKS
		ANL	ANCH	ANR	RLNGTH	SEL	ELMAX	NSTPS		1	2	3	4	5	6	7	8	
1	RT12B4	0.07	0.04	0.07	3972.9	0.01863	2582	16	X_i	0	36.4	62.6	86.9	98	114.8	303	378.7	New
									Y_i	2582	2578	2576	2574	2573.4	2574	2578	2582	
2	RTA1A2	0.07	0.04	0.07	1427.4	0.02340	2464.8	8	X_i	0	33	66	86	114	120	135	177	
									Y_i	2464	2464	2463.2	2462.8	2463.2	2463.8	2464	2464.8	
3	RTA1D	0.07	0.04	0.07	5357.9	0.01857	151.2	16	X_i	900	1000	1035	1038	1048	1054	1120	1330	
									Y_i	151	100	99.5	99	99	99.6	99.7	151.2	
4	RTA2A3	0.07	0.04	0.07	3286.0	0.01582	2665	16	X_i	0	100.1	119	129.4	137.7	156.2	367.9	409	New
									Y_i	2665	2658	2657.5	2657	2657.2	2658	2662	2662.5	
5	RTA2A4	0.07	0.04	0.07	2603.8	0.03841	2426	16	X_i	0	103	187	344	439	505	563	596	
									Y_i	2422	2418	2417.4	2417.3	2418	2416.4	2422	2426	
6	RTA3A4	0.07	0.04	0.07	717.0	0.01674	2406	8	X_i	0	69	124	175	252	303	342	363	
									Y_i	2405	2404	2403.5	2402.8	2403.6	2403	2404	2406	
7	RTA59B	0.07	0.04	0.07	18484.1	0.02326	2188	8	X_i	0	61	150	160	164	174	266	290	
									Y_i	2185	2184	2182	2180	2179.8	2180	2186	2188	
8	RTAB	0.07	0.04	0.07	6186.8	0.02829	2261	14	X_i	822	1013	1035	1045	1049	1053	1076	1573	
									Y_i	2261	2159	2158.9	2156.6	2156.8	2158.9	2159	2261	
9	RTB3B4	0.07	0.04	0.07	3125.7	0.02048	2565	16	X_i	0	16.6	28	34.2	39.7	63.76	108.6	198.6	New
									Y_i	2563	2562	2560.8	2560.3	2560.6	2562	2564.3	2565	
10	RTB4D	0.07	0.04	0.07	520.6	0.01786	2536	8	X_i	0	89	118	165	222	363	411	516	
									Y_i	2536	2534	2532	2531.5	2532	2532.2	2532.8	2534	
11	RTC1C4	0.07	0.04	0.07	1058.3	0.01701	2605.3	8	X_i	0	104	140	187	243	273	302	324	
									Y_i	2599	2600	2598.4	2598.3	2600	2602	2604	2605.3	
12	RTC1E2	0.07	0.04	0.07	7084.5	0.02089	2506	16	X_i	0	120.9	137.9	150.8	209.8	266.4	359.6	477.6	New
									Y_i	2506	2500	2498	2497	2495.7	2496.7	2498	2502	
13	RTC2A2	0.07	0.04	0.07	6045.3	0.02183	2520	20	X_i	0	147	228.3	252.5	257.8	262.8	282.7	348.4	New
									Y_i	2502	2501	2500	2498	2497.6	2498	2500	2520	
14	RTC2C5	0.07	0.04	0.07	3085.9	0.02301	2554.5	16	X_i	0	9.3	49.5	114.2	122.3	140.1	149.6	197.3	New
									Y_i	2554.5	2554	2552.2	2552	2551.8	2551.6	2552	2553.8	
15	RTC3C5	0.07	0.04	0.07	3234.3	0.02319	2532.5	16	X_i	0	17.5	62.9	117.1	128.2	142.8	157.3	170.1	New
									Y_i	2532.5	2532	2530	2526	2525.5	2526	2530	2530.2	
16	RTC4C5	0.07	0.04	0.07	3181.7	0.02357	2532.5	16	X_i	0	17.5	62.9	117.1	128.2	142.8	157.3	170.1	New
									Y_i	2532.5	2532	2530	2526	2525.5	2526	2530	2530.2	
17	RTC4E2	0.07	0.04	0.07	6075.4	0.02140	2506	8	X_i	0	120.9	137.9	150.8	209.8	266.4	359.6	477.6	New
									Y_i	2506	2500	2498	2497	2495.7	2496.7	2498	2502	

TABLE D.3-3
Routing Data for the South Basin

NO.	Reach ID	RC CARD						RS CARD		RX, RY CARDS								REMARKS
		ANL	ANCH	ANR	RLNGTH	SEL	ELMAX	NSTPS		1	2	3	4	5	6	7	8	
18	RTC5C6	0.07	0.04	0.07	2643.7	0.01551	2490.8	8	X_i	0	68.8	177.6	245.2	257	350	363.8	398.6	New
									Y_i	2490	2489	2488.8	2490	2489	2489	2490	2490.8	
19	RTC5E2	0.07	0.04	0.07	2668.4	0.02174	2506	8	X_i	0	120.9	137.9	150.8	209.8	266.4	359.6	477.6	New
									Y_i	2506	2500	2498	2497	2495.7	2496.7	2498	2502	
20	RTC6C7	0.07	0.04	0.07	1800.8	0.02332	2450	8	X_i	0	73	80	90	93	96	103	162	
									Y_i	2450	2448	2446	2444	2443.7	2444	2446	2448	
21	RTC7H	0.07	0.04	0.07	6347.6	0.01764	2460	8	X_i	950	1053	1139	1150	1177	1255	1302	1352	
									Y_i	2460	2357	2357.4	2356.4	2356.3	2357.8	2359.6	2460	
22	RTC8C7	0.07	0.04	0.07	547.2	0.01462	2460	8	X_i	950	1053	1139	1150	1177	1255	1302	1352	
									Y_i	2460	2357	2357.4	2356.4	2356.3	2357.8	2359.6	2460	
23	RTDF	0.07	0.04	0.07	3664.2	0.01910	151	16	X_i	900	1000	1035	1038	1048	1054	1120	1330	
									Y_i	151	100	99.5	99	99	99.6	99.7	151.2	
24	RTE1E2	0.07	0.04	0.07	4907.0	0.01875	2506	16	X_i	0	120.9	137.9	150.8	209.8	266.4	359.6	477.6	New
									Y_i	2506	2500	2498	2497	2495.7	2496.7	2498	2502	
25	RTEFC8	0.07	0.04	0.07	1277.6	0.01409	2454	16	X_i	0	86	92	125	207.6	319	482.9	605.1	New
									Y_i	2454	2448	2447	2447	2448	2450	2451	2452	
26	RTG1G2	0.07	0.04	0.07	4245.8	0.01460	2472.0	8	X_i	19	45	98	182	219	234	270	308	
									Y_i	2472	2470	2468	2466	2465.5	2466	2468	2472	
27	RTG2G4	0.07	0.04	0.07	5907.9	0.01896	2460	8	X_i	950	1053	1139	1150	1177	1255	1302	1352	
									Y_i	2460	2357	2357.4	2356.4	2356.3	2357.8	2359.6	2460	
28	RTG3G4	0.07	0.04	0.07	5322.4	0.02311	2380.3	8	X_i	34	65	84	98	105	131	166	173	
									Y_i	2380	2378	2376	2374	2376	2378	2380	2380.3	
29	RTG4I	0.07	0.04	0.07	4437.7	0.03606	2460	8	X_i	950	1053	1139	1150	1177	1255	1302	1352	
									Y_i	2460	2357	2357.4	2356.4	2356.3	2357.8	2359.6	2460	
30	RTHG4	0.07	0.04	0.07	932.7	0.02091	2336	8	X_i	0	44	71	80	90	101	143	154	
									Y_i	2336	2330	2324	2323.3	2324	2330	2334	2335	

NOTE: The RC Record (Normal-Depth Channel Routing) is used in combination with the RX and RY records to describe the channel in a routing reach. The variables in the RC Record are: ANL (Left overbank Manning's n value), ANCH (Channel Manning's n value), ANR (Right overbank Manning's n value), RLNTH (Reach length, in feet), SEL (Energy grade line slope in ft/ft), ELMAX (Maximum elevation for which storage and outflow values are to be computed. The default is the maximum elevation on RY Record). NSTPS defines the number of steps to be used in the storage routing, which is about equal to (reach length/average velocity/ time interval). The RX Record defines the cross-section X coordinates, in which the left bank and right bank of channel are assumed to be located at points 3 and 6, repectively, of the cross-section. The RY Record defines the cross-section Y coordinates, in which the left and right bank of channel are assumed to be located at points 3 and 6, respectively, of the cross-section.

SECTION D.4 – RESERVOIR ROUTING DATA

D.4 RESERVOIR ROUTING DATA

Only one location in the Rio Verde watershed was found for reservoir routing analysis. This is found in the north-south basin at the Black Hills Tank. The topographic information for the Black Hills Tank is shown in **FIGURE D.4-1**. Reservoir routing data used in HEC-1 for Black Hills Tank are provided below:

TABLE D.4-1
Storage Volume Calculations for Black Hills Tank
North-South basin, Rio Verde ADMP

No	Elevation	Contour Difference	Area	Mean Area	Incremental Volume	Storage Volume
	(ft)	(ft)	(sq. ft)	(sq. ft	(ac-ft)	(ac-ft)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2594.0		11,425.0			0
2	2596.0	2.0	76,412.5	43,918.8	2.02	2.02
3	2598.0	2.0	112,697.9	94,555.2	4.34	6.36
4	2600.0	2.0	159,761.9	136,229.9	6.25	12.61
5	2602.0	2.0	214,787.5	187,274.7	8.60	21.21
6	2604.0	2.0	278,805.7	246,796.6	11.33	32.54
7	2606.0	2.0	356,476.1	317,640.9	14.58	47.13
8	2608.0	2.0	453,691.7	405,083.9	18.60	65.73
9	2610.0	2.0	559,419.6	506,555.6	23.26	88.98
10	2612.0	2.0	670,155.2	614,787.4	28.23	117.21
11	2614.0	2.0	769,990.5	720,072.8	33.06	150.27

Flood Control District of Maricopa County

RIO VERDE ADMP

F.C.D. CONTRACT NO. 2001C056

LEGEND:

2 - ft Contours

Weir

Flow

1 inch equals 150 feet

BLACK HILLS TANK TOPOGRAPHIC INFORMATION

FIGURE D.4-1

DIBBLE & ASSOCIATES CONSULTING ENGINEERS

TABLE D.4-2
Weir Section Data

No	Station (ft)	Elevation (ft)	No	Station (ft)	Elevation (ft)
(1)	(2)	(3)	(1)	(2)	(3)
1	1000.00	2616.00	17	1231.67	2611.04
2	1006.57	2615.81	18	1243.29	2610.85
3	1025.43	2615.41	19	1261.67	2610.51
4	1027.74	2615.41	20	1281.56	2610.01
5	1052.89	2615.17	21	1284.40	2609.91
6	1072.18	2614.74	22	1310.17	2608.93
7	1088.83	2614.38	23	1322.34	2608.55
8	1101.32	2614.07	24	1324.15	2608.63
9	1115.70	2613.76	25	1343.24	2609.47
10	1133.39	2613.25	26	1358.12	2610.36
11	1147.11	2613.11	27	1376.26	2611.52
12	1158.20	2612.82	28	1392.31	2612.48
13	1171.83	2612.61	29	1409.66	2614.00
14	1191.47	2612.32	30	1429.52	2615.90
15	1208.87	2611.83	31	1445.20	2617.97
16	1217.23	2611.54	32	1457.84	2620.00

TABLE D.4-3
Evaluated Discharge Rating Data for Black Hills Tank
North-South Basin, Rio Verde ADMP

No	Elevation (ft)	Head (ft)	Weir Coefficient, C (-)	Discharge (cfs)
(1)	(2)	(3)	(4)	(5)
1	2608.55	0.00	2.5000	0.00
2	2609.05	0.50	2.5417	9.64
3	2609.55	1.00	2.5833	53.83
4	2610.05	1.50	2.6250	146.07
5	2610.55	2.00	2.6667	299.07
6	2611.05	2.50	2.7083	531.50
7	2611.55	3.00	2.7500	859.12
8	2612.05	3.50	2.7917	1,286.00
9	2612.55	4.00	2.8333	1,822.67
10	2613.05	4.50	2.8750	2,490.39
11	2613.55	5.00	2.9167	3,303.20
12	2614.05	5.50	2.9583	4,268.51

TABLE D.4-3
Evaluated Discharge Rating Data for Black Hills Tank
North-South Basin, Rio Verde ADMP

No	Elevation	Head	Weir Coefficient, C	Discharge
	(ft)	(ft)	(-)	(cfs)
(1)	(2)	(3)	(4)	(5)
13	2614.55	6.00	3.0000	5,394.46
14	2615.05	6.50	3.0028	6,685.33
15	2615.55	7.00	3.0056	8,142.09
16	2616.05	7.50	3.0083	9,786.32
17	2616.55	8.00	3.0111	11,605.56
18	2617.05	8.50	3.0139	13,579.39
19	2617.55	9.00	3.0167	15,692.83
20	2618.05	9.50	3.0194	17,951.66
21	2618.55	10.00	3.0222	20,338.25
22	2619.05	10.50	3.0250	22,850.60
23	2619.55	11.00	3.0278	25,478.66

NOTE: The above rating data were evaluated from the Uneven Weir program that employs COE Upper Curve for the Weir Discharge Coefficients. The plot of the discharge rating data is shown in FIGURE D.4-2.

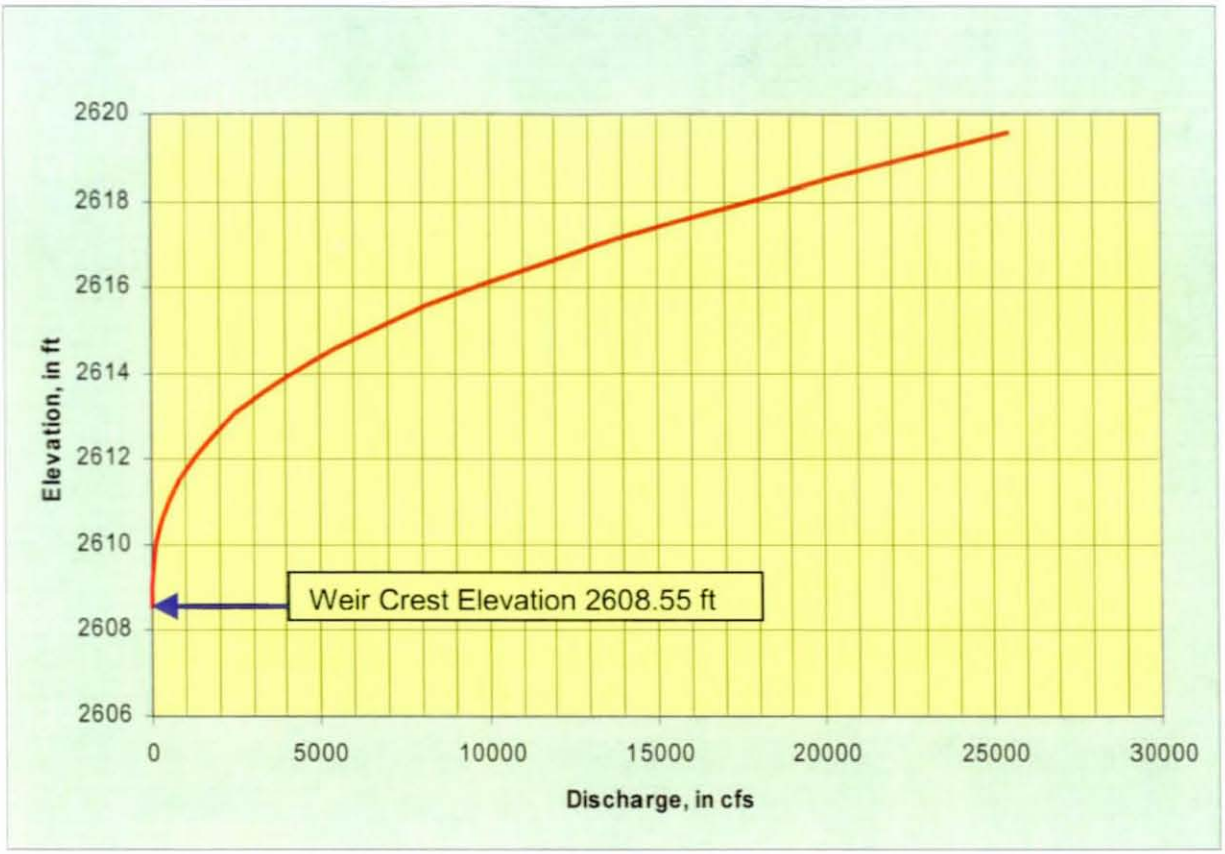


FIGURE D.4-2
Discharge Rating Data for the Black Hills Tank
Rio Verde ADMP

SECTION D.5 – FLOW SPLITS AND DIVERSION DATA

D.5 FLOW SPLITS AND DIVERSION DATA

D.5.1 South Basin – There were five split flows in the hydrologic model of the south basin. The flow diversion distribution was evaluated from backwater analysis using the US Army Corps of Engineer's HEC-RAS program. The evaluation is made by developing a 5- to 6-station hydraulic model in which Stations 1, 2, 3 and 4 are geometric cross-sections in the OUTPUT and DIVERSION reaches, while Stations 5 and 6 are geometric cross-sections in the INPUT reach. The hydraulic model is run using six or more discharges. The flow diversion distribution analysis requires that the evaluated energy grades at the split flow location (i.e., Station 3 or 4) for the OUTPUT and DIVERSION reaches are the same. The schematics of the hydraulic modeling for the split flow analysis is shown in **FIGURE D.5-1.**

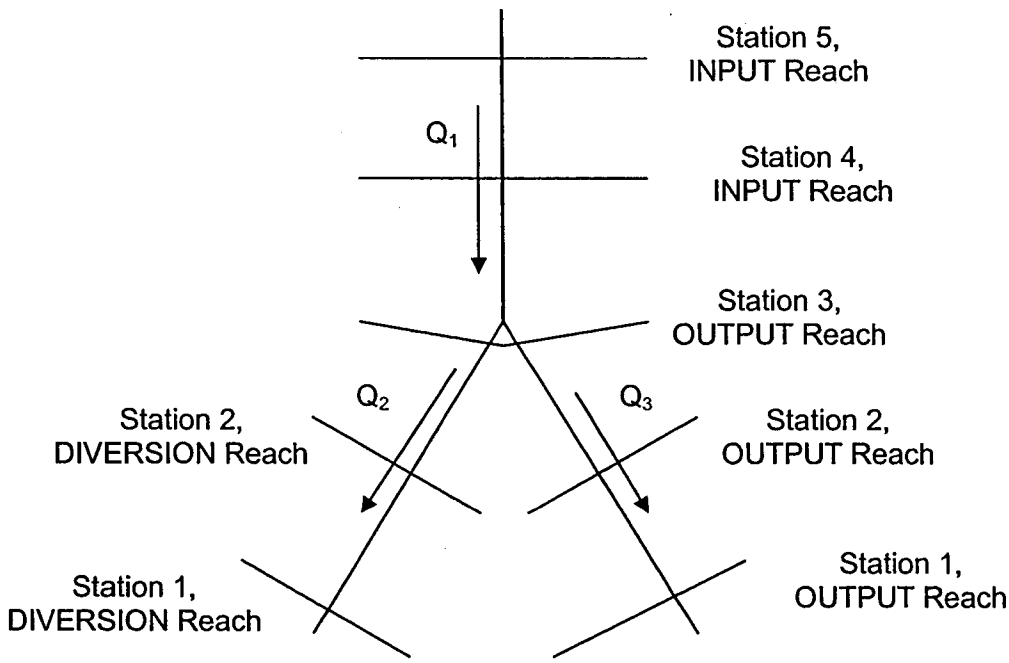


FIGURE D.5-1

Flow Schematics for the Split Flow Analysis

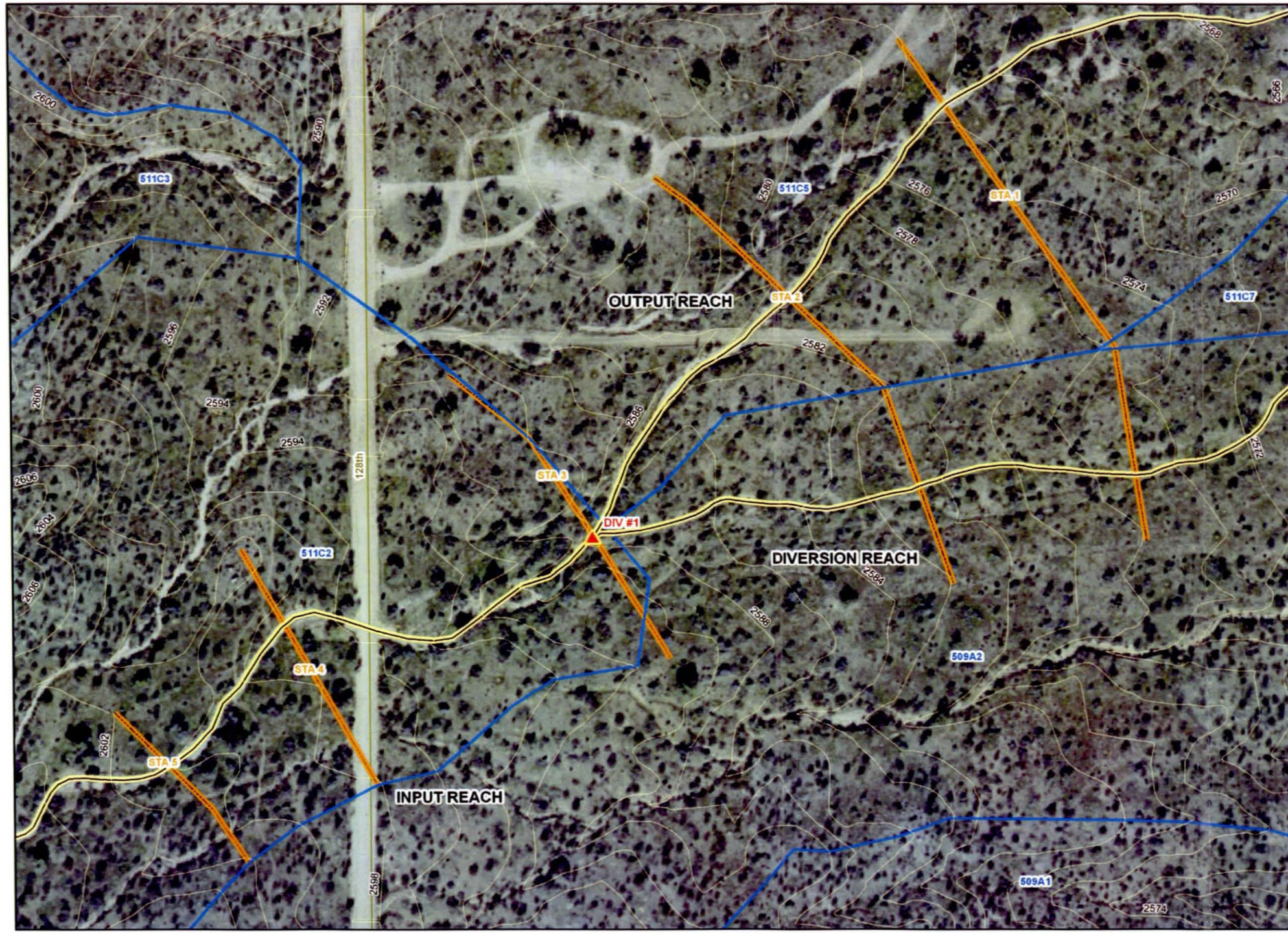
The flow splits for the south basin are performed downstream of the following concentration points: 511C2, 509A5, 511C1, 511C4, and 511C5.

(a) Flow Split at 511C2 - The HEC-RAS output associated with the split flow analysis involving the flow at concentration point 511C2 is listed below. The associated map (**FIGURE D.5-2**) shows the cross-section stations used to define the geometric data.

Profile Output Table - TDN
HEC-RAS Plan: Plan 02

Rivers = 1
Hydraulic Reaches = 3
River Stations = 8
Plans = 1
Profiles = 6

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	Froude # Chl
INPUT	5	Q = 25	25.00	2600.20	2600.69	2600.54	2600.71	0.39
INPUT	5	Q = 70	70.00	2600.20	2600.92	2600.71	2600.95	0.43
INPUT	5	Q = 150	150.00	2600.20	2601.14	2600.89	2601.19	0.46
INPUT	5	Q = 300	300.00	2600.20	2601.40	2601.10	2601.49	0.51
INPUT	5	Q = 400	400.00	2600.20	2601.54	2601.21	2601.65	0.52
INPUT	5	Q = 500	500.00	2600.20	2601.66	2601.31	2601.79	0.54
INPUT	4	Q = 25	25.00	2597.00	2597.44	2597.44	2597.54	1.00
INPUT	4	Q = 70	70.00	2597.00	2597.63	2597.63	2597.75	1.02
INPUT	4	Q = 150	150.00	2597.00	2597.80	2597.80	2597.96	1.02
INPUT	4	Q = 300	300.00	2597.00	2598.00	2598.00	2598.20	1.01
INPUT	4	Q = 400	400.00	2597.00	2598.08	2598.08	2598.32	1.03
INPUT	4	Q = 500	500.00	2597.00	2598.16	2598.16	2598.43	1.02
DIVERSION	3	Q = 25	7.00	2587.80	2588.23	2588.11	2588.27	0.49
DIVERSION	3	Q = 70	22.50	2587.80	2588.53	2588.34	2588.61	0.54
DIVERSION	3	Q = 150	51.00	2587.80	2588.87	2588.61	2588.99	0.59
DIVERSION	3	Q = 300	111.00	2587.80	2589.31	2589.00	2589.51	0.64
DIVERSION	3	Q = 400	152.00	2587.80	2589.53	2589.21	2589.77	0.66
DIVERSION	3	Q = 500	197.00	2587.80	2589.73	2589.40	2590.01	0.69
DIVERSION	2	Q = 25	7.00	2581.00	2581.21	2581.19	2581.24	0.84
DIVERSION	2	Q = 70	22.50	2581.00	2581.32	2581.31	2581.38	0.90
DIVERSION	2	Q = 150	51.00	2581.00	2581.44	2581.42	2581.53	0.94
DIVERSION	2	Q = 300	111.00	2581.00	2581.59	2581.58	2581.73	0.98
DIVERSION	2	Q = 400	152.00	2581.00	2581.66	2581.65	2581.82	1.00
DIVERSION	2	Q = 500	197.00	2581.00	2581.73	2581.72	2581.91	1.01
DIVERSION	1	Q = 25	7.00	2574.50	2574.76	2574.71	2574.78	0.58
DIVERSION	1	Q = 70	22.50	2574.50	2574.90	2574.83	2574.94	0.63
DIVERSION	1	Q = 150	51.00	2574.50	2575.04	2574.96	2575.11	0.66
DIVERSION	1	Q = 300	111.00	2574.50	2575.23	2575.13	2575.32	0.70
DIVERSION	1	Q = 400	152.00	2574.50	2575.32	2575.21	2575.43	0.71
DIVERSION	1	Q = 500	197.00	2574.50	2575.41	2575.30	2575.54	0.73
OUTPUT	3	Q = 25	18.00	2587.80	2588.23	2588.13	2588.28	0.56
OUTPUT	3	Q = 70	47.50	2587.80	2588.49	2588.32	2588.60	0.61
OUTPUT	3	Q = 150	99.00	2587.80	2588.81	2588.59	2588.99	0.66
OUTPUT	3	Q = 300	189.00	2587.80	2589.18		2589.50	0.73
OUTPUT	3	Q = 400	248.00	2587.80	2589.40	2589.14	2589.78	0.76
OUTPUT	3	Q = 500	303.00	2587.80	2589.57	2589.32	2590.02	0.78
OUTPUT	2	Q = 25	18.00	2580.00	2580.55	2580.54	2580.67	0.94
OUTPUT	2	Q = 70	47.50	2580.00	2580.78	2580.77	2580.93	0.99
OUTPUT	2	Q = 150	99.00	2580.00	2580.98	2580.98	2581.19	1.02
OUTPUT	2	Q = 300	189.00	2580.00	2581.23	2581.23	2581.49	1.00
OUTPUT	2	Q = 400	248.00	2580.00	2581.34	2581.34	2581.64	1.02
OUTPUT	2	Q = 500	303.00	2580.00	2581.45	2581.45	2581.75	1.02
OUTPUT	1	Q = 25	18.00	2573.60	2574.20	2574.11	2574.22	0.54
OUTPUT	1	Q = 70	47.50	2573.60	2574.35	2574.25	2574.39	0.57
OUTPUT	1	Q = 150	99.00	2573.60	2574.50	2574.40	2574.56	0.59
OUTPUT	1	Q = 300	189.00	2573.60	2574.66	2574.54	2574.74	0.63
OUTPUT	1	Q = 400	248.00	2573.60	2574.74	2574.61	2574.84	0.64
OUTPUT	1	Q = 500	303.00	2573.60	2574.81	2574.65	2574.93	0.66



Flood Control District of Maricopa County

RIO VERDE ADMP

F.C.D. CONTRACT NO. 2001C056

LEGEND:

- Flow Diversions
- 2 - ft Contour
- Routing Reaches
- X-Section Stations
- Streets
- Subbasins

1 inch equals 100 feet

FLOW DIVERSION # 1
SOUTH BASIN
FIGURE D.5-2

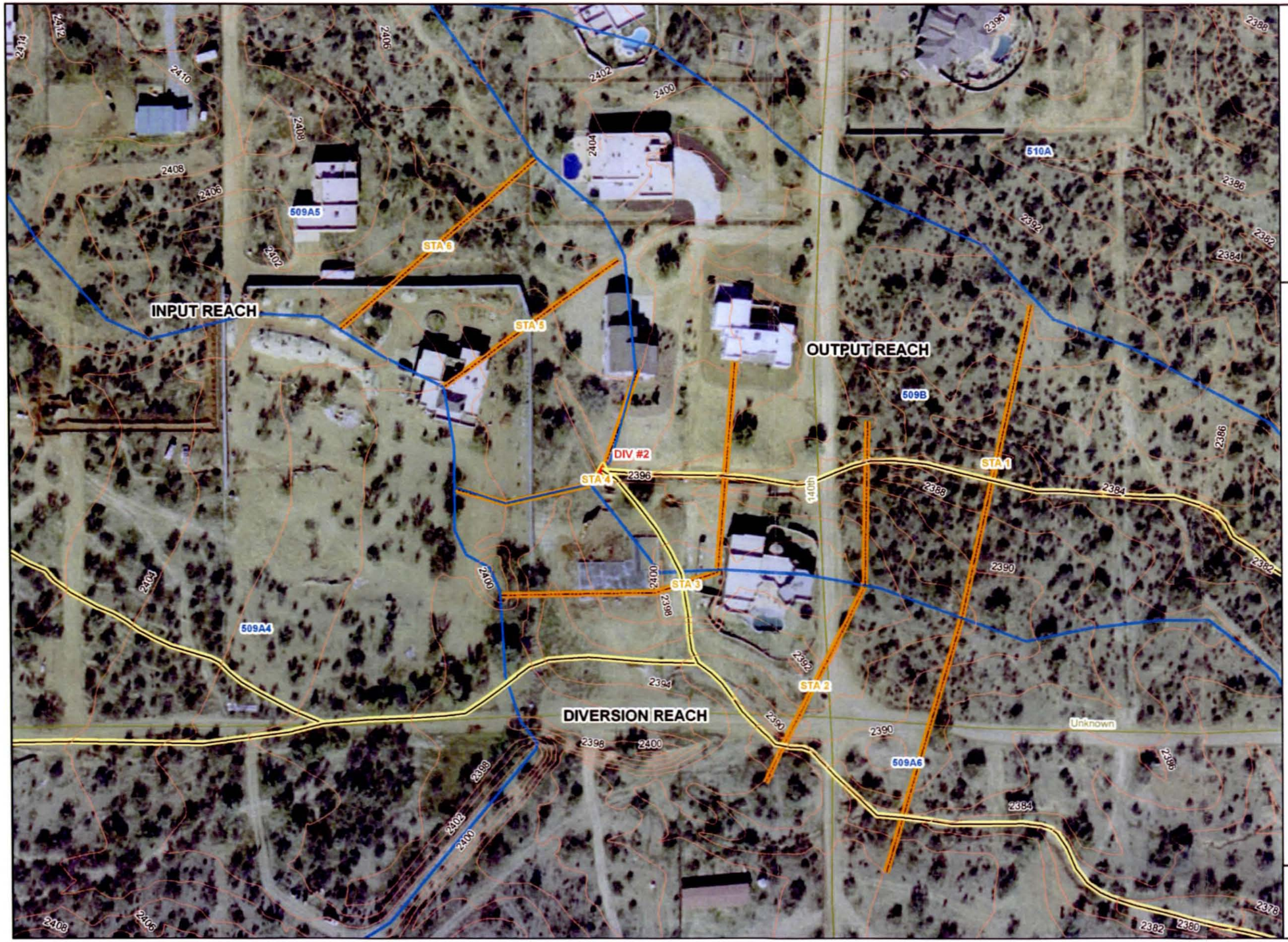
DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

(b) Flow Split at 509A5 - The HEC-RAS output associated with the split flow analysis involving the flow at concentration point 509A5 is listed below. The associated map (**FIGURE D.5-3**) shows the cross-section stations used to define the geometric data.

Profile Output Table - TDN
HEC-RAS Plan: Plan 01

Rivers = 1
Hydraulic Reaches = 3
River Stations = 10
Plans = 1
Profiles = 6

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	Froude # Chl
INPUT	6	75	75.00	2399.70	2400.34	2400.25	2400.41	0.69
INPUT	6	150	150.00	2399.70	2400.51	2400.42	2400.62	0.74
INPUT	6	225	225.00	2399.70	2400.63	2400.54	2400.77	0.77
INPUT	6	308	308.00	2399.70	2400.74	2400.65	2400.90	0.78
INPUT	6	480	480.00	2399.70	2400.92	2400.81	2401.15	0.80
INPUT	6	650	650.00	2399.70	2401.08	2400.95	2401.35	0.81
INPUT	5	75	75.00	2397.40	2398.08	2397.95	2398.14	0.57
INPUT	5	150	150.00	2397.40	2398.30	2398.11	2398.39	0.58
INPUT	5	225	225.00	2397.40	2398.47	2398.25	2398.58	0.59
INPUT	5	308	308.00	2397.40	2398.62	2398.37	2398.76	0.60
INPUT	5	480	480.00	2397.40	2398.89	2398.58	2399.06	0.61
INPUT	5	650	650.00	2397.40	2399.10	2398.76	2399.30	0.62
OUTPUT	4	75	73.00	2394.80	2396.37	2396.18	2396.50	0.70
OUTPUT	4	150	135.00	2394.80	2396.66	2396.48	2396.83	0.73
OUTPUT	4	225	195.00	2394.80	2396.86	2396.67	2397.05	0.74
OUTPUT	4	308	258.00	2394.80	2397.01	2396.84	2397.23	0.76
OUTPUT	4	480	385.00	2394.80	2397.23	2397.07	2397.52	0.81
OUTPUT	4	650	510.00	2394.80	2397.40	2397.26	2397.75	0.85
OUTPUT	3	75	73.00	2391.80	2392.89	2392.89	2393.18	1.01
OUTPUT	3	150	135.00	2391.80	2393.21	2393.21	2393.59	1.01
OUTPUT	3	225	195.00	2391.80	2393.44	2393.44	2393.88	1.01
OUTPUT	3	308	258.00	2391.80	2393.66	2393.64	2394.13	0.99
OUTPUT	3	480	385.00	2391.80	2394.07	2393.98	2394.56	0.93
OUTPUT	3	650	510.00	2391.80	2394.45	2394.30	2394.88	0.87
OUTPUT	2	75	73.00	2388.00	2389.53	2389.24	2389.67	0.60
OUTPUT	2	150	135.00	2388.00	2389.87	2389.59	2390.08	0.67
OUTPUT	2	225	195.00	2388.00	2390.11	2389.84	2390.38	0.72
OUTPUT	2	308	258.00	2388.00	2390.30	2390.05	2390.64	0.76
OUTPUT	2	480	385.00	2388.00	2390.59	2390.41	2391.05	0.85
OUTPUT	2	650	510.00	2388.00	2390.82	2390.70	2391.40	0.91
OUTPUT	1	75	73.00	2386.80	2387.70	2387.55	2387.78	0.62
OUTPUT	1	150	135.00	2386.80	2387.91	2387.74	2388.02	0.64
OUTPUT	1	225	195.00	2386.80	2388.08	2387.88	2388.20	0.66
OUTPUT	1	308	258.00	2386.80	2388.21	2387.99	2388.34	0.66
OUTPUT	1	480	385.00	2386.80	2388.39	2388.20	2388.56	0.69
OUTPUT	1	650	510.00	2386.80	2388.54	2388.33	2388.75	0.70
DIVERSION	4	75	2.00	2396.20	2396.44	2396.43	2396.49	0.85
DIVERSION	4	150	15.00	2396.20	2396.72	2396.70	2396.83	0.95
DIVERSION	4	225	30.00	2396.20	2396.87	2396.87	2397.04	0.99
DIVERSION	4	308	50.00	2396.20	2397.01	2397.01	2397.23	1.02
DIVERSION	4	480	95.00	2396.20	2397.25	2397.25	2397.53	1.01
DIVERSION	4	650	140.00	2396.20	2397.43	2397.43	2397.75	1.01
DIVERSION	3	75	2.00	2393.60	2393.90	2393.82	2393.91	0.49
DIVERSION	3	150	15.00	2393.60	2394.23	2394.09	2394.28	0.57
DIVERSION	3	225	30.00	2393.60	2394.43	2394.26	2394.51	0.59
DIVERSION	3	308	50.00	2393.60	2394.62	2394.42	2394.73	0.60
DIVERSION	3	480	95.00	2393.60	2394.94	2394.68	2395.08	0.62
DIVERSION	3	650	140.00	2393.60	2395.17	2394.88	2395.34	0.63
DIVERSION	2	75	2.00	2388.00	2388.36		2388.39	0.63
DIVERSION	2	150	15.00	2388.00	2388.75		2388.85	0.72
DIVERSION	2	225	30.00	2388.00	2388.98	2388.87	2389.12	0.76
DIVERSION	2	308	50.00	2388.00	2389.18		2389.36	0.78
DIVERSION	2	480	95.00	2388.00	2389.49	2389.38	2389.75	0.83
DIVERSION	2	650	140.00	2388.00	2389.73	2389.61	2390.04	0.85
DIVERSION	1	75	2.00	2384.80	2385.14	2385.07	2385.16	0.60
DIVERSION	1	150	15.00	2384.80	2385.51	2385.41	2385.59	0.68
DIVERSION	1	225	30.00	2384.80	2385.72	2385.60	2385.84	0.71
DIVERSION	1	308	50.00	2384.80	2385.92	2385.78	2386.07	0.73
DIVERSION	1	480	95.00	2384.80	2386.19	2386.06	2386.42	0.77
DIVERSION	1	650	140.00	2384.80	2386.38	2386.27	2386.69	0.80



Flood Control District of Maricopa County

RIO VERDE ADMP

F.C.D. CONTRACT NO. 2001C056

LEGEND:

- Flow Diversions
- 2 - ft Contour
- Routing Reaches
- X-Section Stations
- Streets
- Subbasins

1 inch equals 100 feet

FLOW DIVERSION # 2
SOUTH BASIN

FIGURE D.5-3

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

(c) Flow Split at 511C1 - The HEC-RAS output associated with the split flow analysis involving the flow at concentration point 511C1 is listed below. The associated map (**FIGURE D.5-4**) shows the cross-section stations used to define the geometric data.

```
Profile Output Table - TDN
HEC-RAS  Plan: Plan 01
# Rivers            = 1
# Hydraulic Reaches = 3
# River Stations    = 10
# Plans             = 1
# Profiles          = 6
```

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	Froude # Chl
INPUT	6	Q = 75	75.00	2613.30	2614.90	2614.57	2615.03	0.57
INPUT	6	Q = 150	150.00	2613.30	2615.37	2614.97	2615.54	0.59
INPUT	6	Q = 225	225.00	2613.30	2615.71		2615.92	0.60
INPUT	6	Q = 300	300.00	2613.30	2615.98		2616.23	0.61
INPUT	6	Q = 480	480.00	2613.30	2616.45		2616.77	0.64
INPUT	6	Q = 650	650.00	2613.30	2616.77		2617.17	0.69
INPUT	5	Q = 75	75.00	2611.80	2612.98	2612.98	2613.34	1.01
INPUT	5	Q = 150	150.00	2611.80	2613.43	2613.43	2613.91	1.01
INPUT	5	Q = 225	225.00	2611.80	2613.76	2613.76	2614.32	1.01
INPUT	5	Q = 300	300.00	2611.80	2614.11	2614.11	2614.66	1.00
INPUT	5	Q = 480	480.00	2611.80	2614.63	2614.63	2615.14	1.01
INPUT	5	Q = 650	650.00	2611.80	2614.90	2614.90	2615.45	1.00
DIVERSION	4	Q = 75	38.00	2608.80	2609.93	2609.76	2610.05	0.68
DIVERSION	4	Q = 150	77.00	2608.80	2610.25	2610.07	2610.44	0.73
DIVERSION	4	Q = 225	117.00	2608.80	2610.48	2610.30	2610.73	0.76
DIVERSION	4	Q = 300	155.00	2608.80	2610.65	2610.48	2610.96	0.79
DIVERSION	4	Q = 480	250.00	2608.80	2611.00	2610.84	2611.41	0.84
DIVERSION	4	Q = 650	340.00	2608.80	2611.25	2611.12	2611.74	0.88
DIVERSION	3	Q = 75	38.00	2605.40	2606.14	2606.03	2606.23	0.66
DIVERSION	3	Q = 150	77.00	2605.40	2606.37	2606.23	2606.49	0.70
DIVERSION	3	Q = 225	117.00	2605.40	2606.54	2606.39	2606.69	0.71
DIVERSION	3	Q = 300	155.00	2605.40	2606.67	2606.51	2606.85	0.72
DIVERSION	3	Q = 480	250.00	2605.40	2606.94	2606.76	2607.16	0.75
DIVERSION	3	Q = 650	340.00	2605.40	2607.13	2606.94	2607.40	0.76
DIVERSION	2	Q = 75	38.00	2601.00	2601.45	2601.39	2601.54	0.79
DIVERSION	2	Q = 150	77.00	2601.00	2601.63	2601.57	2601.78	0.83
DIVERSION	2	Q = 225	117.00	2601.00	2601.77	2601.71	2601.96	0.86
DIVERSION	2	Q = 300	155.00	2601.00	2601.88	2601.82	2602.10	0.88
DIVERSION	2	Q = 480	250.00	2601.00	2602.09	2602.04	2602.37	0.92
DIVERSION	2	Q = 650	340.00	2601.00	2602.24	2602.21	2602.58	0.95
DIVERSION	1	Q = 75	38.00	2598.40	2598.98	2598.89	2599.05	0.69
DIVERSION	1	Q = 150	77.00	2598.40	2599.15	2599.05	2599.26	0.72
DIVERSION	1	Q = 225	117.00	2598.40	2599.29	2599.18	2599.42	0.74
DIVERSION	1	Q = 300	155.00	2598.40	2599.39	2599.28	2599.54	0.75
DIVERSION	1	Q = 480	250.00	2598.40	2599.60	2599.47	2599.79	0.78
DIVERSION	1	Q = 650	340.00	2598.40	2599.75	2599.61	2599.97	0.79
OUTPUT	4	Q = 75	37.00	2608.80	2609.84	2609.80	2610.06	0.91
OUTPUT	4	Q = 150	73.00	2608.80	2610.12	2610.11	2610.45	0.99
OUTPUT	4	Q = 225	108.00	2608.80	2610.33	2610.33	2610.73	1.01
OUTPUT	4	Q = 300	145.00	2608.80	2610.52	2610.52	2610.97	1.01
OUTPUT	4	Q = 480	230.00	2608.80	2610.88	2610.88	2611.42	1.01
OUTPUT	4	Q = 650	310.00	2608.80	2611.14	2611.14	2611.75	1.02
OUTPUT	3	Q = 75	37.00	2605.00	2605.79		2605.87	0.62
OUTPUT	3	Q = 150	73.00	2605.00	2606.03		2606.13	0.64
OUTPUT	3	Q = 225	108.00	2605.00	2606.19		2606.32	0.66
OUTPUT	3	Q = 300	145.00	2605.00	2606.33		2606.48	0.67
OUTPUT	3	Q = 480	230.00	2605.00	2606.57		2606.77	0.71
OUTPUT	3	Q = 650	310.00	2605.00	2606.75	2606.53	2606.99	0.73
OUTPUT	2	Q = 75	37.00	2601.50	2602.11	2602.08	2602.23	0.88
OUTPUT	2	Q = 150	73.00	2601.50	2602.28	2602.26	2602.45	0.93
OUTPUT	2	Q = 225	108.00	2601.50	2602.40	2602.38	2602.60	0.96
OUTPUT	2	Q = 300	145.00	2601.50	2602.50	2602.49	2602.74	1.00
OUTPUT	2	Q = 480	230.00	2601.50	2602.69	2602.69	2602.98	1.01
OUTPUT	2	Q = 650	310.00	2601.50	2602.83	2602.83	2603.17	1.01
OUTPUT	1	Q = 75	37.00	2598.60	2599.45	2599.35	2599.49	0.58
OUTPUT	1	Q = 150	73.00	2598.60	2599.60	2599.48	2599.66	0.60
OUTPUT	1	Q = 225	108.00	2598.60	2599.70	2599.58	2599.77	0.62
OUTPUT	1	Q = 300	145.00	2598.60	2599.79	2599.66	2599.87	0.63
OUTPUT	1	Q = 480	230.00	2598.60	2599.94	2599.78	2600.04	0.64
OUTPUT	1	Q = 650	310.00	2598.60	2600.06	2599.89	2600.17	0.65

Flood Control District of Maricopa County

RIO VERDE ADMP

F.C.D. CONTRACT NO. 2001C056

LEGEND:

- Flow Diversions
- 2 - ft Contour
- Streets
- Routing Reaches
- X-Section Stations
- Subbasins

1 inch equals 100 feet

FLOW DIVERSION # 3
SOUTH BASIN
FIGURE D.5-4

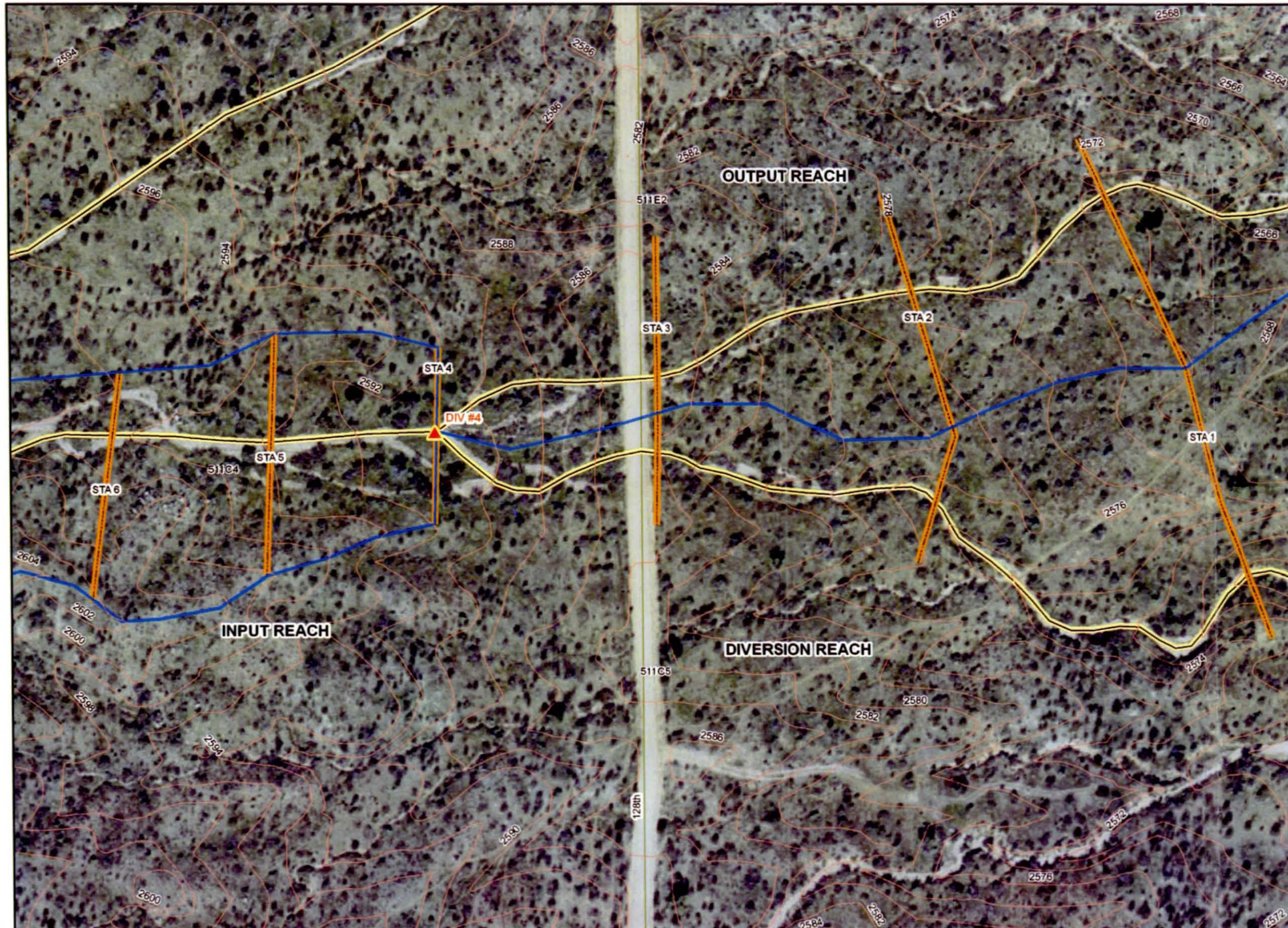
DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

(d) Flow Split at 511C4 - The HEC-RAS output associated with the split flow analysis involving the flow at concentration point 511C4 is listed listed below. The associated map (**FIGURE D.5-5**) shows the cross-section stations used to define the geometric data.

Profile Output Table - TDN
HEC-RAS Plan: Plan 01

Rivers = 1
Hydraulic Reaches = 3
River Stations = 10
Plans = 1
Profiles = 6

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	Froude # Chl
INPUT	6	25	25.00	2596.40	2597.12	2596.91	2597.15	0.43
INPUT	6	100	100.00	2596.40	2597.56	2597.28	2597.64	0.51
INPUT	6	150	150.00	2596.40	2597.74	2597.44	2597.83	0.54
INPUT	6	300	300.00	2596.40	2598.09	2597.77	2598.24	0.59
INPUT	6	400	400.00	2596.40	2598.25	2597.94	2598.44	0.62
INPUT	6	500	500.00	2596.40	2598.40	2598.07	2598.62	0.64
INPUT	5	25	25.00	2593.80	2594.21	2594.21	2594.30	1.05
INPUT	5	100	100.00	2593.80	2594.47	2594.47	2594.62	1.02
INPUT	5	150	150.00	2593.80	2594.58	2594.58	2594.75	1.01
INPUT	5	300	300.00	2593.80	2594.79	2594.79	2595.04	1.02
INPUT	5	400	400.00	2593.80	2594.91	2594.91	2595.20	1.00
INPUT	5	500	500.00	2593.80	2595.00	2595.00	2595.34	1.02
OUTPUT	4	25	5.00	2590.80	2591.03	2590.99	2591.05	0.57
OUTPUT	4	100	27.00	2590.80	2591.30	2591.18	2591.34	0.55
OUTPUT	4	150	44.00	2590.80	2591.39	2591.27	2591.47	0.63
OUTPUT	4	300	97.00	2590.80	2591.63	2591.49	2591.76	0.69
OUTPUT	4	400	136.00	2590.80	2591.77	2591.62	2591.92	0.72
OUTPUT	4	500	175.00	2590.80	2591.87	2591.72	2592.06	0.74
OUTPUT	3	25	5.00	2584.60	2584.77	2584.74	2584.79	0.68
OUTPUT	3	100	27.00	2584.60	2584.89	2584.89	2584.94	0.97
OUTPUT	3	150	44.00	2584.60	2584.95	2584.93	2585.00	0.87
OUTPUT	3	300	97.00	2584.60	2585.05	2585.03	2585.15	0.92
OUTPUT	3	400	136.00	2584.60	2585.11	2585.09	2585.24	0.94
OUTPUT	3	500	175.00	2584.60	2585.16	2585.14	2585.32	0.95
OUTPUT	2	25	5.00	2575.60	2575.85	2575.81	2575.88	0.64
OUTPUT	2	100	27.00	2575.60	2576.07	2576.01	2576.14	0.72
OUTPUT	2	150	44.00	2575.60	2576.17	2576.10	2576.25	0.75
OUTPUT	2	300	97.00	2575.60	2576.37	2576.30	2576.51	0.80
OUTPUT	2	400	136.00	2575.60	2576.48	2576.41	2576.65	0.83
OUTPUT	2	500	175.00	2575.60	2576.57	2576.50	2576.77	0.85
OUTPUT	1	25	5.00	2569.50	2569.70	2569.67	2569.72	0.65
OUTPUT	1	100	27.00	2569.50	2569.88	2569.83	2569.93	0.73
OUTPUT	1	150	44.00	2569.50	2569.96	2569.90	2570.02	0.75
OUTPUT	1	300	97.00	2569.50	2570.11	2570.06	2570.21	0.79
OUTPUT	1	400	136.00	2569.50	2570.19	2570.14	2570.31	0.81
OUTPUT	1	500	175.00	2569.50	2570.26	2570.21	2570.39	0.83
DIVERSION	4	25	20.00	2590.80	2591.02	2590.94	2591.05	0.52
DIVERSION	4	100	73.00	2590.80	2591.26	2591.13	2591.33	0.62
DIVERSION	4	150	106.00	2590.80	2591.36	2591.23	2591.46	0.65
DIVERSION	4	300	203.00	2590.80	2591.60		2591.77	0.71
DIVERSION	4	400	264.00	2590.80	2591.71	2591.56	2591.92	0.74
DIVERSION	4	500	325.00	2590.80	2591.82		2592.06	0.76
DIVERSION	3	25	20.00	2584.10	2584.33	2584.33	2584.41	1.01
DIVERSION	3	100	73.00	2584.10	2584.55	2584.55	2584.69	1.01
DIVERSION	3	150	106.00	2584.10	2584.64	2584.64	2584.81	1.01
DIVERSION	3	300	203.00	2584.10	2584.83	2584.83	2585.07	1.01
DIVERSION	3	400	264.00	2584.10	2584.92	2584.92	2585.20	1.01
DIVERSION	3	500	325.00	2584.10	2585.00	2585.00	2585.32	1.01
DIVERSION	2	25	20.00	2575.00	2575.53	2575.43	2575.58	0.62
DIVERSION	2	100	73.00	2575.00	2575.87	2575.73	2575.96	0.66
DIVERSION	2	150	106.00	2575.00	2576.00	2575.85	2576.11	0.67
DIVERSION	2	300	203.00	2575.00	2576.24	2576.09	2576.42	0.70
DIVERSION	2	400	264.00	2575.00	2576.37	2576.21	2576.58	0.72
DIVERSION	2	500	325.00	2575.00	2576.48	2576.32	2576.73	0.72
DIVERSION	1	25	20.00	2565.60	2566.20	2566.14	2566.31	0.79
DIVERSION	1	100	73.00	2565.60	2566.62	2566.55	2566.85	0.86
DIVERSION	1	150	106.00	2565.60	2566.80	2566.73	2567.07	0.89
DIVERSION	1	300	203.00	2565.60	2567.18	2567.12	2567.56	0.93
DIVERSION	1	400	264.00	2565.60	2567.36	2567.30	2567.80	0.94
DIVERSION	1	500	325.00	2565.60	2567.52	2567.47	2568.02	0.95



Flood Control District of Maricopa County

RIO VERDE ADMP

F.C.D. CONTRACT NO. 2001C056

LEGEND:

- Flow Diversions
- 2 - ft Contour
- Streets
- X-Section Stations
- Routing Reaches
- Subbasins

1 inch equals 100 feet

FLOW DIVERSION # 4
SOUTH BASIN
FIGURE D.5-5

DIBBLE & ASSOCIATES
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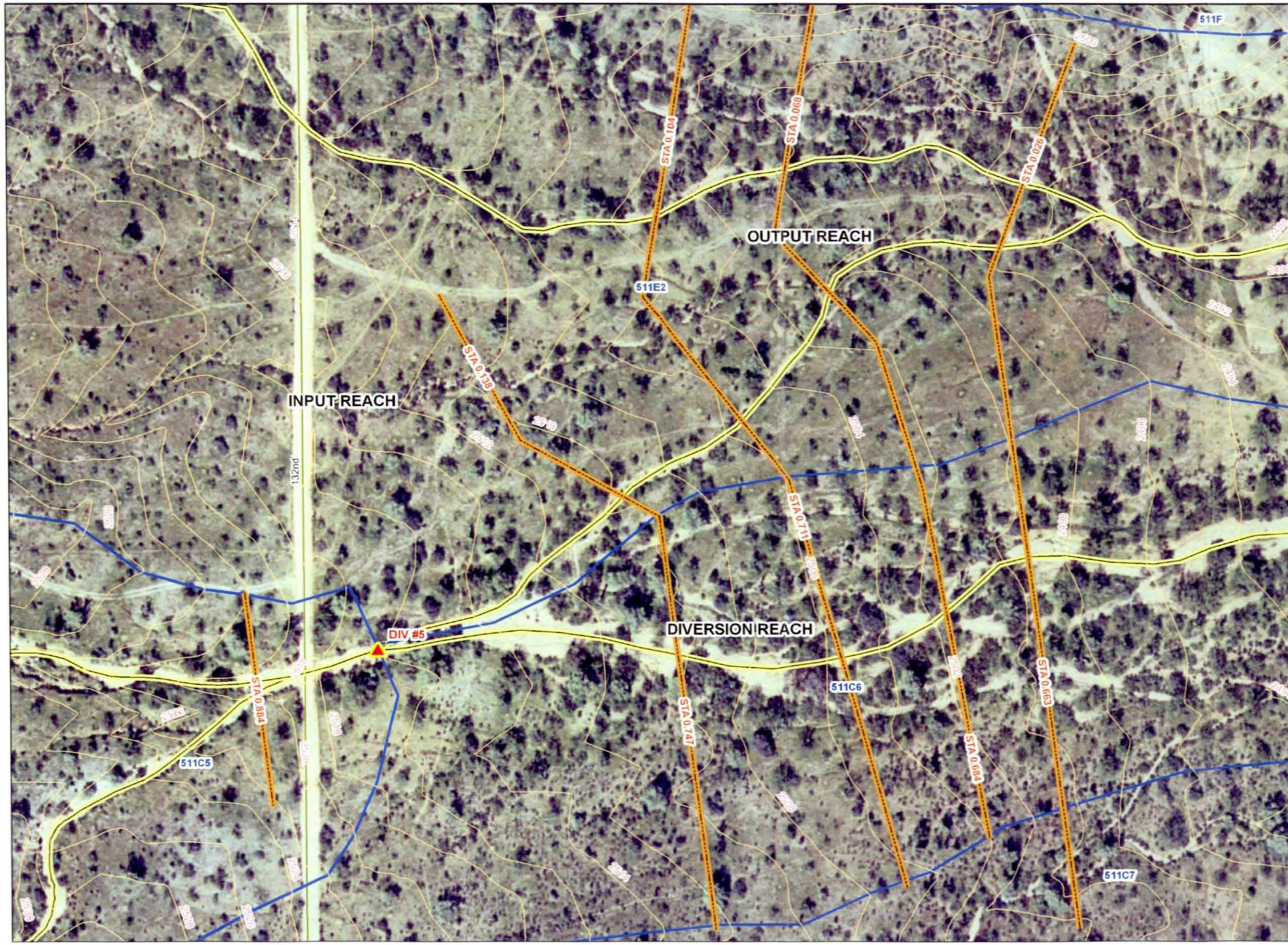
(e) Flow Split at 511C5 - The HEC-RAS output associated with the split flow analysis involving the flow at concentration point 511C5 is listed below. The associated map (**FIGURE D.5-6**) shows the cross-section stations used to define the geometric data.

Profile Output Table - Standard Table 1
HEC-RAS Plan: Plan 01

Rivers = 3
Hydraulic Reaches = 3
River Stations = 14
Plans = 1
Profiles = 8

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	Froude # Chl
511C5	INPUT	0.844	Q = 100	100.00	2518.68	2520.09	2519.97	2520.31	0.83
511C5	INPUT	0.844	Q = 200	200.00	2518.68	2520.47	2520.41	2520.75	0.87
511C5	INPUT	0.844	Q = 300	300.00	2518.68	2520.65	2520.63	2521.04	0.93
511C5	INPUT	0.844	Q = 400	400.00	2518.68	2520.83	2520.83	2521.28	0.93
511C5	INPUT	0.844	Q = 500	500.00	2518.68	2520.96	2520.94	2521.49	0.95
511C5	INPUT	0.844	Q = 600	600.00	2518.68	2521.21	2521.21	2521.68	0.84
511C5	INPUT	0.844	Q = 700	700.00	2518.68	2521.35	2521.35	2521.82	0.81
511C5	INPUT	0.844	Q = 800	800.00	2518.68	2521.47	2521.47	2521.95	0.81
511C5	INPUT	0.845	Q = 100	100.00	2509.87	2520.34	2510.13	2520.34	0.00
511C5	INPUT	0.845	Q = 200	200.00	2509.87	2520.78	2510.23	2520.78	0.00
511C5	INPUT	0.845	Q = 300	300.00	2509.87	2521.08	2510.31	2521.08	0.00
511C5	INPUT	0.845	Q = 400	400.00	2509.87	2521.33	2510.37	2521.33	0.00
511C5	INPUT	0.845	Q = 500	500.00	2509.87	2521.55	2510.44	2521.55	0.00
511C5	INPUT	0.845	Q = 600	600.00	2509.87	2521.73	2510.50	2521.73	0.00
511C5	INPUT	0.845	Q = 700	700.00	2509.87	2521.87	2510.54	2521.87	0.00
511C5	INPUT	0.845	Q = 800	800.00	2509.87	2521.99	2510.58	2521.99	0.00
511C6	DIVERSION	0.659	Q = 100	59.83	2498.54	2494.88	2494.88	2495.00	0.00
511C6	DIVERSION	0.659	Q = 200	135.76	2498.54	2495.07	2495.07	2495.23	0.00
511C6	DIVERSION	0.659	Q = 300	218.26	2498.54	2495.20	2495.20	2495.39	0.00
511C6	DIVERSION	0.659	Q = 400	290.52	2498.54	2495.30	2495.28	2495.50	0.00
511C6	DIVERSION	0.659	Q = 500	374.86	2498.54	2495.38	2495.37	2495.61	0.00
511C6	DIVERSION	0.659	Q = 600	455.27	2498.54	2495.45	2495.44	2495.71	0.00
511C6	DIVERSION	0.659	Q = 700	401.12	2498.54	2495.41	2495.39	2495.65	0.00
511C6	DIVERSION	0.659	Q = 800	416.09	2498.54	2495.42	2495.41	2495.67	0.00
511C6	DIVERSION	0.661	Q = 100	59.83	2498.77	2495.21		2495.27	0.00
511C6	DIVERSION	0.661	Q = 200	135.76	2498.77	2495.42		2495.49	0.00
511C6	DIVERSION	0.661	Q = 300	218.26	2498.77	2495.55		2495.65	0.00
511C6	DIVERSION	0.661	Q = 400	290.52	2498.77	2495.65		2495.76	0.00
511C6	DIVERSION	0.661	Q = 500	374.86	2498.77	2495.75		2495.88	0.00
511C6	DIVERSION	0.661	Q = 600	455.27	2498.77	2495.83		2495.98	0.00
511C6	DIVERSION	0.661	Q = 700	401.12	2498.77	2495.78		2495.91	0.00
511C6	DIVERSION	0.661	Q = 800	416.09	2498.77	2495.79		2495.93	0.00
511C6	DIVERSION	0.663	Q = 100	59.83	2499.01	2499.59	2499.59	2499.68	0.94
511C6	DIVERSION	0.663	Q = 200	135.76	2499.01	2499.72	2499.72	2499.82	0.97
511C6	DIVERSION	0.663	Q = 300	218.26	2499.01	2499.80	2499.80	2499.93	0.96
511C6	DIVERSION	0.663	Q = 400	290.52	2499.01	2499.87	2499.87	2500.02	0.93
511C6	DIVERSION	0.663	Q = 500	374.86	2499.01	2499.93	2499.93	2500.10	0.94
511C6	DIVERSION	0.663	Q = 600	455.27	2499.01	2499.98	2499.98	2500.17	0.95
511C6	DIVERSION	0.663	Q = 700	401.12	2499.01	2499.95	2499.95	2500.12	0.92
511C6	DIVERSION	0.663	Q = 800	416.09	2499.01	2499.96	2499.96	2500.13	0.93
511C6	DIVERSION	0.684	Q = 100	59.83	2501.55	2501.93	2501.84	2501.95	0.48
511C6	DIVERSION	0.684	Q = 200	135.76	2501.55	2502.06	2501.93	2502.11	0.52
511C6	DIVERSION	0.684	Q = 300	218.26	2501.55	2502.16	2502.02	2502.23	0.56
511C6	DIVERSION	0.684	Q = 400	290.52	2501.55	2502.23	2502.10	2502.32	0.60
511C6	DIVERSION	0.684	Q = 500	374.86	2501.55	2502.31	2502.16	2502.41	0.61
511C6	DIVERSION	0.684	Q = 600	455.27	2501.55	2502.37	2502.23	2502.49	0.63
511C6	DIVERSION	0.684	Q = 700	401.12	2501.55	2502.33	2502.18	2502.43	0.63
511C6	DIVERSION	0.684	Q = 800	416.09	2501.55	2502.34	2502.20	2502.45	0.63
511C6	DIVERSION	0.711	Q = 100	59.83	2505.10	2505.49	2505.49	2505.58	0.97
511C6	DIVERSION	0.711	Q = 200	135.76	2505.10	2505.63	2505.63	2505.74	0.94
511C6	DIVERSION	0.711	Q = 300	218.26	2505.10	2505.72	2505.72	2505.85	0.96
511C6	DIVERSION	0.711	Q = 400	290.52	2505.10	2505.78	2505.78	2505.94	0.97
511C6	DIVERSION	0.711	Q = 500	374.86	2505.10	2505.86	2505.86	2506.02	0.90
511C6	DIVERSION	0.711	Q = 600	455.27	2505.10	2505.91	2505.91	2506.08	0.91
511C6	DIVERSION	0.711	Q = 700	401.12	2505.10	2505.88	2505.88	2506.04	0.91
511C6	DIVERSION	0.711	Q = 800	416.09	2505.10	2505.88	2505.88	2506.05	0.94
511C6	DIVERSION	0.747	Q = 100	59.83	2509.87	2510.12	2510.05	2510.15	0.49
511C6	DIVERSION	0.747	Q = 200	135.76	2509.87	2510.26	2510.17	2510.30	0.60
511C6	DIVERSION	0.747	Q = 300	218.26	2509.87	2510.37	2510.25	2510.42	0.62
511C6	DIVERSION	0.747	Q = 400	290.52	2509.87	2510.44	2510.30	2510.51	0.63
511C6	DIVERSION	0.747	Q = 500	374.86	2509.87	2510.51	2510.35	2510.58	0.68
511C6	DIVERSION	0.747	Q = 600	455.27	2509.87	2510.57	2510.41	2510.65	0.68
511C6	DIVERSION	0.747	Q = 700	401.12	2509.87	2510.53	2510.37	2510.61	0.67
511C6	DIVERSION	0.747	Q = 800	416.09	2509.87	2510.55	2510.39	2510.63	0.66

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	Froude # Chl
511E2	OUTPUT	0.022	Q = 100	40.17	2494.54	2494.84	2494.80	2494.92	0.69
511E2	OUTPUT	0.022	Q = 200	64.24	2494.54	2494.93	2494.88	2495.03	0.72
511E2	OUTPUT	0.022	Q = 300	81.74	2494.54	2494.99	2494.95	2495.09	0.77
511E2	OUTPUT	0.022	Q = 400	109.48	2494.54	2495.06	2495.02	2495.17	0.80
511E2	OUTPUT	0.022	Q = 500	125.14	2494.54	2495.09	2495.05	2495.21	0.81
511E2	OUTPUT	0.022	Q = 600	144.73	2494.54	2495.13	2495.09	2495.26	0.81
511E2	OUTPUT	0.022	Q = 700	298.88	2494.54	2495.36	2495.29	2495.53	0.81
511E2	OUTPUT	0.022	Q = 800	383.92	2494.54	2495.45	2495.38	2495.64	0.81
511E2	OUTPUT	0.024	Q = 100	40.17	2494.80	2495.13		2495.18	0.64
511E2	OUTPUT	0.024	Q = 200	64.24	2494.80	2495.22		2495.28	0.63
511E2	OUTPUT	0.024	Q = 300	81.74	2494.80	2495.28		2495.34	0.63
511E2	OUTPUT	0.024	Q = 400	109.48	2494.80	2495.35		2495.42	0.65
511E2	OUTPUT	0.024	Q = 500	125.14	2494.80	2495.38		2495.46	0.66
511E2	OUTPUT	0.024	Q = 600	144.73	2494.80	2495.42		2495.50	0.68
511E2	OUTPUT	0.024	Q = 700	298.88	2494.80	2495.65		2495.77	0.73
511E2	OUTPUT	0.024	Q = 800	383.92	2494.80	2495.75		2495.88	0.73
511E2	OUTPUT	0.026	Q = 100	40.17	2494.99	2495.37		2495.42	0.60
511E2	OUTPUT	0.026	Q = 200	64.24	2494.99	2495.45		2495.51	0.65
511E2	OUTPUT	0.026	Q = 300	81.74	2494.99	2495.50		2495.57	0.66
511E2	OUTPUT	0.026	Q = 400	109.48	2494.99	2495.57		2495.66	0.69
511E2	OUTPUT	0.026	Q = 500	125.14	2494.99	2495.60		2495.70	0.70
511E2	OUTPUT	0.026	Q = 600	144.73	2494.99	2495.64		2495.75	0.71
511E2	OUTPUT	0.026	Q = 700	298.88	2494.99	2495.87		2496.03	0.83
511E2	OUTPUT	0.026	Q = 800	383.92	2494.99	2495.96		2496.16	0.89
511E2	OUTPUT	0.068	Q = 100	40.17	2499.97	2500.56	2500.51	2500.66	0.83
511E2	OUTPUT	0.068	Q = 200	64.24	2499.97	2500.69	2500.63	2500.81	0.81
511E2	OUTPUT	0.068	Q = 300	81.74	2499.97	2500.76	2500.70	2500.90	0.82
511E2	OUTPUT	0.068	Q = 400	109.48	2499.97	2500.87	2500.79	2501.02	0.81
511E2	OUTPUT	0.068	Q = 500	125.14	2499.97	2500.92	2500.84	2501.08	0.80
511E2	OUTPUT	0.068	Q = 600	144.73	2499.97	2500.98	2500.89	2501.15	0.81
511E2	OUTPUT	0.068	Q = 700	298.88	2499.97	2501.35	2501.22	2501.57	0.78
511E2	OUTPUT	0.068	Q = 800	383.92	2499.97	2501.51	2501.35	2501.75	0.77
511E2	OUTPUT	0.104	Q = 100	40.17	2505.35	2505.54	2505.45	2505.60	0.66
511E2	OUTPUT	0.104	Q = 200	64.24	2505.35	2505.64	2505.56	2505.70	0.70
511E2	OUTPUT	0.104	Q = 300	81.74	2505.35	2505.70	2505.60	2505.76	0.69
511E2	OUTPUT	0.104	Q = 400	109.48	2505.35	2505.77	2505.68	2505.84	0.70
511E2	OUTPUT	0.104	Q = 500	125.14	2505.35	2505.80	2505.70	2505.88	0.70
511E2	OUTPUT	0.104	Q = 600	144.73	2505.35	2505.85	2505.74	2505.93	0.70
511E2	OUTPUT	0.104	Q = 700	298.88	2505.35	2506.54	2506.54	2506.54	0.05
511E2	OUTPUT	0.104	Q = 800	383.92	2505.35	2506.04	2506.04	2506.06	0.32
511E2	OUTPUT	0.138	Q = 100	40.17	2509.33	2510.02	2510.00	2510.16	0.92
511E2	OUTPUT	0.138	Q = 200	64.24	2509.33	2510.15	2510.15	2510.32	0.88
511E2	OUTPUT	0.138	Q = 300	81.74	2509.33	2510.22	2510.22	2510.40	0.88
511E2	OUTPUT	0.138	Q = 400	109.48	2509.33	2510.30	2510.30	2510.52	0.89
511E2	OUTPUT	0.138	Q = 500	125.14	2509.33	2510.35	2510.35	2510.58	0.89
511E2	OUTPUT	0.138	Q = 600	144.73	2509.33	2510.39	2510.39	2510.65	0.91
511E2	OUTPUT	0.138	Q = 700	298.88	2509.33	2510.58	2510.58	2510.61	0.33
511E2	OUTPUT	0.138	Q = 800	383.92	2509.33	2510.59	2510.59	2510.63	0.41



Flood Control District of Maricopa County

RIO VERDE ADMP

F.C.D. CONTRACT NO. 2001C056

LEGEND:

- Flow Diversions
- 2 - ft Contour
- Streets
- Routing Reaches
- X-Section Stations
- Subbasins

1 inch equals 111 feet

FLOW DIVERSION # 5
SOUTH BASIN
FIGURE D.5-6

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

TABLE D.5-1 summarizes the flow diversion distribution analysis for the five flow diversions in the South Basin.

TABLE D.5-1
FLOW DIVERSION DISTRIBUTION AT FIVE SPLIT FLOW LOCATIONS
(SOUTH BASIN)

No	DIVERSION			FLOW (cfs)						
	FROM	TO		1	2	3	4	5	6	7
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	511C2	509A2	DI	0	25	70	150	300	400	500
			DQ	0	7	22.5	51	111	152	197
2	509A5	509A6	DI	0	75	150	225	308	480	650
			DQ	0	2	15	30	50	95	140
3	511C1	511C4	DI	0	75	150	225	300	480	650
			DQ	0	38	77	117	155	250	340
4	511C4	511C5	DI	0	25	100	150	300	400	500
			DQ	0	20	73	106	203	264	325
5	511C5	511C6	DI	0	100	150	200	250	300	350
			DQ	0	60	97	136	174	218	257
			DI	400	450	500	550	600	650	700
			DQ	290	332	375	418	455	369	401

TABLE D.5-2 below shows the cross-section stations used to evaluate the flow distribution for Flow Diversion #5. These cross-section stations are associated with cross-section stations used in the floodplain RAS modeling for Rio Verde Wash 10 Tributary 2 and Wash 10 Tributary 2 Split 1.

TABLE D.5-2
CROSS-SECTION STATIONS AT FLOW DIVERSION #5 THAT CORRESPOND TO THE CROSS-SECTIONS USED FOR FLOODPLAIN RAS MODELING

No.	REACH	RM IDs	NOTES
(1)	(2)	(3)	(4)
1	INPUT	0.845	Rio Verde Wash 10 Trib2
2	INPUT	0,844	Rio Verde Wash 10 Trib2
3	DIVERSION	0.747	Rio Verde Wash 10 Trib2
4	DIVERSION	0.711	Rio Verde Wash 10 Trib2
5	DIVERSION	0.684	Rio Verde Wash 10 Trib2

TABLE D.5-2
CROSS-SECTION STATIONS AT FLOW DIVERSION #5 THAT CORRESPOND TO THE CROSS-SECTIONS USED FOR FLOODPLAIN RAS MODELING

No.	REACH	RM IDs	NOTES
(1)	(2)	(3)	(4)
6	DIVERSION	0.663	Rio Verde Wash 10 Trib2
7	OUTLET	0.138	Rio Verde Wash 10 Trib2 Split 1
8	OUTLET	0.104	Rio Verde Wash 10 Trib2 Split 1
9	OUTLET	0.068	Rio Verde Wash 10 Trib2 Split 1
10	OUTLET	0.026	Rio Verde Wash 10 Trib2 Split 1

SECTI0N D.6 – HYDROLOGIC CALCULATIONS

D.6 HYDROLOGIC CALCULATIONS

In this section, HEC-1 model outputs are presented for both the existing and future conditions. The logic diagram for each model is already included in the output. The order of presentation is provided below:

D.6.1 North-North Basin

(A) 100-Year, 6-Hour Event, Existing Condition Model
(B) 100-Year, 6-Hour Event, Future Condition Model
(C) 100-Year, 24-Hour Event, Existing Condition Model
(D) 100-Year, 24-Hour Event, Future Condition Model

D.6.2 North-South Basin, With Black Hills Tank

(A) 100-Year, 6-Hour Event, Existing Condition Model
(B) 100-Year, 6-Hour Event, Future Condition Model
(C) 100-Year, 24-Hour Event, Existing Condition Model
(D) 100-Year, 24-Hour Event, Future Condition Model

D.6.3 North-South Basin, Without Black Hills Tank

(A) 100-Year, 6-Hour Event, Existing Condition Model
(B) 100-Year, 6-Hour Event, Future Condition Model
(C) 100-Year, 24-Hour Event, Existing Condition Model
(D) 100-Year, 24-Hour Event, Future Condition Model

D.6.4 South Basin

(A) 100-Year, 6-Hour Event, Existing Condition Model
(B) 100-Year, 6-Hour Event, Future Condition Model
(C) 100-Year, 24-Hour Event, Existing Condition Model
(D) 100-Year, 24-Hour Event, Future Condition Model

D.6.1 NORTH-NORTH BASIN

(A) 100-Year, 6-Hour Event, Existing Condition Model

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   13JUN06  TIME  07:48:38  *                                    *          (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   Project ID: NN_6EX - Major Basin: 01 - Return Period: 100 Years
        2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_6EX.DAT
        3           ID   MODEL:      100-year, 6-hour Existing Condition Model
        4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003
        5           ID
        6           ID   NOTES:      This model incorporates 2 new sub-basins B13W6A and B13W6B, which
        7           ID               was not included in the original model, NN_24E.DAT created in
        8           ID               Feb. 22, 2004. (Modification: July 16, 2005)
        9           ID
       10           ID               Modification was made on creating CB2W4B (i.e., combining RB2W4B
       11           ID               and B2W4B) before it gets combined with B2W4A. - July 19, 2005
       12           ID
                    *DIAGRAM
       13           ID
       14           IT       3                    800
       15           IO       5
       16           IN      15
                    *
                    *

       17           KK    B1W1BASIN
       18           KM   SUB-BASIN B1W1
       19           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       20           BA   0.332
       21           KM   RAINFALL DEPTH OF 3.48 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
       22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.9408 WAS USED.
       23           PB   3.273
       24           PC   0.000   0.013   0.019   0.029   0.044   0.057   0.069   0.081   0.094   0.107
       25           PC   0.121   0.137   0.159   0.205   0.289   0.466   0.677   0.808   0.877   0.919
       26           PC   0.947   0.961   0.974   0.987   1.000
       27           LG    0.15    0.39    5.70    0.20       0
       28           UI      30      31      39      92     126     170     198     221     245     298
       29           UI     363     257     205     185     171     157     145     134     123     110
       30           UI      97      85      76      72      68      64      51      48      38      39
       31           UI      34      33      30      24      23      23      18      15      14      15
       32           UI      15      14       8       6       5       6       6       6       6       5
       33           UI       6       0       0       0       0       0       0       0       0       0
       34           UI       0       0       0       0       0       0       0       0       0       0
       35           UI       0       0       0       0       0       0       0       0       0       0
       36           KM   ********************************************************************************

       37           KK    B2W1BASIN
       38           KM   SUB-BASIN B2W1
       39           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
       40           BA   0.119
       41           LG    0.15    0.39    6.20    0.17       0
       42           UI      14      15      38      63      87     103     118     157     138      98
       43           UI      84      76      69      62      54      47      38      35      32      29
       44           UI      23      19      17      16      15      11      10       9       7       7
```

```
  45        UI      7       7       3       3       3       2       3       3       3       2
  46        UI      3       3       3       0       0       0       0       0       0       0
  47        UI      0       0       0       0       0       0       0       0       0       0
  48        KM   ******************************************************************************
1                                        HEC-1 INPUT                                          PAGE  2

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

  49        KK   CB2W1
  50        KM        Combines flows from  B1W1 and   B2W1
  51        HC       2
  52        KM   ******************************************************************************

  53        KK   RB6W1ROUTE   REACH
  54        KM        Route   CB2W1   through sub-basin       B6W1       to   CB6W1
  55        RS       7    STOR       0
  56        RC   0.060   0.040   0.060    5153  0.0276    0.00
  57        RX   885.1   917.4   993.1  1090.0  1128.2  1186.2  1209.6  1279.8
  58        RY  2018.0  2014.8  2016.7  2015.3  2018.0  2017.4  2016.0  2018.0
  59        KM   ******************************************************************************

  60        KK    B6W1BASIN
  61        KM   SUB-BASIN B6W1
  62        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  63        BA   0.110
  64        LG    0.15    0.35    4.50    0.36       0
  65        UI      16      23      58      92     115     141     183     118      96      86
  66        UI      75      65      55      44      39      34      29      23      19      18
  67        UI      14      12      11       8       8       7       4       4       3       3
  68        UI       3       3       3       4       3       0       0       0       0       0
  69        UI       0       0       0       0       0       0       0       0       0       0
  70        KM   ******************************************************************************

  71        KK   CB6W1
  72        KM        Combines flow from   B6W1 and   RB6W1
  73        HC       2
  74        KM   ******************************************************************************

  75        KK    B8W1BASIN
  76        KM   SUB-BASIN B8W1
  77        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  78        BA   0.152
  79        LG    0.15    0.39    5.80    0.19       0
  80        UI      18      18      49      80     112     132     151     200     176     125
  81        UI     108      98      87      79      69      59      51      43      41      37
  82        UI      30      24      22      20      19      14      13      12       9       9
  83        UI      10       8       4       3       4       3       4       3       4       3
  84        UI       4       3       4       0       0       0       0       0       0       0
  85        UI       0       0       0       0       0       0       0       0       0       0
  86        KM   ******************************************************************************

  87        KK    B3W1BASIN
  88        KM   SUB-BASIN B3W1
  89        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  90        BA   0.135
  91        LG    0.15    0.40    6.00    0.18       0
  92        UI      20      29      70     113     141     173     224     146     118     104
  93        UI      94      78      68      55      47      42      35      28      24      22
  94        UI      17      16      13       9      10      10       5       4       3       4
  95        UI       4       3       4       4       3       0       0       0       0       0
  96        UI       0       0       0       0       0       0       0       0       0       0
  97        KM   ******************************************************************************
1                                        HEC-1 INPUT                                          PAGE  3

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

  98        KK    B4W1BASIN
  99        KM   SUB-BASIN B4W1
 100        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 101        BA   0.143
 102        LG    0.15    0.39    6.20    0.17       0
 103        UI      22      35      83     130     163     205     231     149     124     111
 104        UI      95      82      65      55      49      41      33      27      24      20
 105        UI      17      15      11      10      11       5       4       4       4       5
 106        UI       4       4       4       0       0       0       0       0       0       0
 107        KM   ******************************************************************************

 108        KK   CB3W1
 109        KM        Combines flow from   B3W1 and   B4W1
 110        HC       2
 111        KM   ******************************************************************************

 112        KK   RB7W1ROUTE   REACH
 113        KM        Route   CB3W1   through sub-basin       B7W1       to   CB7W1
 114        RS       5    STOR       0
```

```
115          RC   0.060   0.040   0.060    5005  0.0280    0.00
116          RX   944.3   993.7  1022.8  1054.8  1127.7  1170.8  1179.2  1226.5
117          RY  2030.0  2020.1  2021.3  2021.3  2019.5  2020.1  2019.7  2030.0
118          KM   ******************************************************************************

119          KK    B7W1BASIN
120          KM   SUB-BASIN B7W1
121          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
122          BA   0.145
123          LG    0.15    0.38    5.40    0.23       0
124          UI      23      40      95     144     181     241     212     146     125     111
125          UI      93      79      61      54      48      36      31      25      22      18
126          UI      16      11      11      11       5       4       4       5       4       5
127          UI       4       5       0       0       0       0       0       0       0       0
128          UI       0       0       0       0       0       0       0       0       0       0
129          KM   ******************************************************************************

130          KK   CB7W1
131          KM        Combines flow from   B7W1 and   RB7W1
132          HC       2
133          KM   ******************************************************************************

134          KK  CB9W1A
135          KM        Combines flow from   B8W1,      CB6W1 and  CB7W1
136          HC       3
137          KM   ******************************************************************************

138          KK  RB9W1A   ROUTE   REACH
139          KM        Route   CB9W1   through sub-basin       B9W1       to   CB10W1
140          RS       8    STOR       0
141          RC   0.060   0.040   0.060    5841  0.0318    0.00
142          RX   693.0   735.4   785.0   820.4   877.4   990.0  1016.0  1059.6
143          RY  1884.0  1880.4  1881.2  1880.9  1881.6  1880.8  1880.4  1884.0
144          KM   ******************************************************************************
```



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

145          KK   B10W1BASIN
146          KM   SUB-BASIN B10W1
147          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
148          BA   0.122
149          LG    0.15    0.39    5.80    0.19       0
150          UI      20      39      91     133     166     230     153     122     105      91
151          UI      75      61      49      45      35      27      23      20      16      14
152          UI      10      10       9       4       4       4       4       4       4       4
153          UI       0       0       0       0       0       0       0       0       0       0
154          UI       0       0       0       0       0       0       0       0       0       0
155          KM   ******************************************************************************

156          KK  RB9W1B   ROUTE   REACH
157          KM        Route   B10W1   through sub-basin       B9W1       to   CB10W1
158          RS       4    STOR       0
159          RC   0.060   0.040   0.060    1233  0.0292    0.00
160          RX   916.6   936.5   967.9   982.9  1009.5  1038.5  1095.3  1140.2
161          RY  1838.0  1833.0  1828.0  1827.3  1827.2  1828.0  1829.9  1830.0
162          KM   ******************************************************************************

163          KK    B9W1BASIN
164          KM   SUB-BASIN B9W1
165          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
166          BA   0.107
167          LG    0.15    0.35    3.74    0.55       0
168          UI      17      25      62      98     122     154     172     111      93      83
169          UI      72      60      50      41      37      30      25      21      17      15
170          UI      13      11       8       8       7       4       3       3       3       4
171          UI       3       3       3       0       0       0       0       0       0       0
172          UI       0       0       0       0       0       0       0       0       0       0
173          KM   ******************************************************************************

174          KK   CB9W1
175          KM        Combines flow from   B9W1,      RB9W1 and  RB10W1
176          HC       3
177          KM   ******************************************************************************

178          KK    B5W1BASIN
179          KM   SUB-BASIN B5W1
180          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
181          BA   0.385
182          LG    0.15    0.39    5.80    0.19       0
183          UI      28      28      28      54      87     115     147     176     191     209
184          UI     229     263     319     322     221     193     176     163     155     145
185          UI     135     127     118     110     100      91      81      75      69      65
186          UI      64      59      53      46      42      37      36      33      31      30
187          UI      28      21      22      21      22      16      13      14      14      14
188          UI      14       0       0       0       0       0       0       0       0       0
```

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 189          UI       0       0       0       0       0       0       0       0       0       0
 190          UI       0       0       0       0       0       0       0       0       0       0
 191          KM   ******************************************************************************
1                                          HEC-1 INPUT                                                    PAGE  5

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


 192          KK  CB13WA
 193          KM        Combines flow from   B5W1 and   CB10W1
 194          HC       2
 195          KM   ******************************************************************************

 196          KK  RB13WA   ROUTE   REACH
 197          KM        Route   C12W1   through sub-basin       B13W1      to   CB13W1
 198          RS       8    STOR       0
 199          RC   0.060   0.040   0.060    7424  0.0353    0.00
 200          RX   743.1   818.0   855.4   862.5  1137.5  1144.7  1174.0  1232.5
 201          RY  1638.0  1625.0  1612.0  1610.0  1610.0  1612.0  1625.0  1638.0
 202          KM   ******************************************************************************

 203          KK   B13W1BASIN
 204          KM   SUB-BASIN B13W1
 205          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 206          BA   0.210
 207          LG    0.15    0.35    4.80    0.30       0
 208          UI      24      25      59     102     144     170     193     248     270     174
 209          UI     151     136     121     111      98      88      72      63      58      53
 210          UI      45      39      32      29      27      23      19      18      16      12
 211          UI      11      12      12       5       5       5       4       5       5       4
 212          UI       5       5       4       5       0       0       0       0       0       0
 213          KM   ******************************************************************************

 214          KK   B14W1BASIN
 215          KM   SUB-BASIN B14W1
 216          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 217          BA   0.144
 218          LG    0.15    0.39    6.20    0.17       0
 219          UI      21      30      77     119     152     184     238     156     126     111
 220          UI      99      85      72      58      50      46      38      29      26      23
 221          UI      18      16      14      10      10      11       5       4       4       5
 222          UI       4       4       4       4       4       0       0       0       0       0
 223          UI       0       0       0       0       0       0       0       0       0       0
 224          KM   ******************************************************************************

 225          KK  RB13WB   ROUTE   REACH
 226          KM        Route   B14W1   through sub-basin       B13W1      to   CB13W1
 227          RS       2    STOR       0
 228          RC   0.060   0.040   0.060     641  0.0281    0.00
 229          RX     0.0    26.2    48.5   140.8   209.5   289.8   303.2   320.4
 230          RY  1560.0  1553.6  1554.0  1554.8  1554.0  1552.5  1554.0  1560.0
 231          KM   ******************************************************************************

 232          KK  CB13W1
 233          KM        Combines flow from   B13W1,    RB14W1 and  RB13W1
 234          KO                                      21
 235          HC       3
 236          KM   ******************************************************************************
1                                          HEC-1 INPUT                                                    PAGE  6

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


 237          KK   B15W1BASIN
 238          KM   SUB-BASIN B14W1
 239          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 240          KO                                      21
 241          BA   0.024
 242          LG    0.15    0.38    6.40    0.16       0
 243          UI      14      55      86      51      37      22      16      10       7       5
 244          UI       2       2       2       0       0       0       0       0       0       0
 245          UI       0       0       0       0       0       0       0       0       0       0
 246          UI       0       0       0       0       0       0       0       0       0       0
 247          UI       0       0       0       0       0       0       0       0       0       0
 248          KM   ******************************************************************************

 249          KK   B16W1BASIN
 250          KM   SUB-BASIN B16W1
 251          KM    PHOINIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 252          BA   0.015
 253          KO                                      21
 254          LG    0.15    0.39    6.20    0.17       0
 255          UI      12      43      55      31      20      13       8       4       4       1
 256          UI       1       2       0       0       0       0       0       0       0       0
 257          UI       0       0       0       0       0       0       0       0       0       0
 258          UI       0       0       0       0       0       0       0       0       0       0
 259          UI       0       0       0       0       0       0       0       0       0       0
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 260          KM   ***********************************************************************

 261          KK   B17W1BASIN
 262          KM   SUB-BASIN B17W1
 263          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 264          BA   0.010
 265          KO                                   21
 266          LG    0.15    0.40    6.00    0.18    0
 267          UI      11      40      32      20   11       6       4       2       1       1
 268          UI       0       0       0       0    0       0       0       0       0       0
 269          UI       0       0       0       0    0       0       0       0       0       0
 270          UI       0       0       0       0    0       0       0       0       0       0
 271          UI       0       0       0       0    0       0       0       0       0       0
 272          KM   ***********************************************************************

 273          KK   B18W1BASIN
 274          KM   SUB-BASIN B18W1
 275          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 276          BA   0.049
 277          KO                                   21
 278          LG    0.15    0.38    6.40    0.16    0
 279          UI      12      42      78     111   99      66      54      42      29      26
 280          UI      17      14      10       8    6       6       2       2       3       2
 281          UI       2       0       0       0    0       0       0       0       0       0
 282          UI       0       0       0       0    0       0       0       0       0       0
 283          UI       0       0       0       0    0       0       0       0       0       0
 284          KM   ***********************************************************************
1                                          HEC-1 INPUT                                    PAGE  7

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


 285          KK    B1W2BASIN
 286          KM   SUB-BASIN B1W2
 287          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 288          BA   0.079
 289          KO                                   21
 290          LG    0.15    0.39    5.80    0.19    0
 291          UI      11      17      42      66   83     100     132      85      69      61
 292          UI      55      46      40      31   28      25      21      16      14      12
 293          UI      10       9       8       6    5       6       3       2       2       3
 294          UI       2       2       2       3    2       0       0       0       0       0
 295          UI       0       0       0       0    0       0       0       0       0       0
 296          KM   ***********************************************************************

 297          KK    B2W2BASIN
 298          KM   SUB-BASIN B2W2
 299          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 300          BA   0.101
 301          KO                                   21
 302          LG    0.15    0.39    5.70    0.20    0
 303          UI      14      15      45      69   92     106     138     141      91      79
 304          UI      70      64      55      47   38      33      31      26      22      17
 305          UI      16      15      11      10    9       6       7       7       4       3
 306          UI       3       2       3       3    3       2       3       3       0       0
 307          UI       0       0       0       0    0       0       0       0       0       0
 308          KM   ***********************************************************************

 309          KK   CB2W2
 310          KM        Combines flow from   B1W2 and   B2W2
 311          HC       2
 312          KM   ***********************************************************************

 313          KK    B4W2BASIN
 314          KM   SUB-BASIN B4W2
 315          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 316          BA   0.096
 317          KO                                   21
 318          LG    0.15    0.39    5.70    0.20    0
 319          UI      19      48     104     140  201     150     110      93      77      59
 320          UI      48      40      31      24   21      14      13       9       9       6
 321          UI       4       4       3       4    4       3       0       0       0       0
 322          UI       0       0       0       0    0       0       0       0       0       0
 323          KM   ***********************************************************************

 324          KK   DUMMY
 325          KM        Combines flow from B4W2, B1W2, B2W2,B18W1,B17W1, B16W1, B15W1 and CB13W1
 326          HC       7
 327          KM   ***********************************************************************
 328          KM   ***********************************************************************
1                                          HEC-1 INPUT                                    PAGE  8

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


 329          KK    B3W5BASIN
 330          KM   SUB-BASIN B3W5
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331          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
332          BA   0.080
333          LG    0.15    0.36    5.00    0.28       0
334          UI      16      40      87     116     168     125      91      79      63      49
335          UI      40      34      25      20      18      12      10       8       8       5
336          UI       3       3       3       3       3       3       0       0       0       0
337          UI       0       0       0       0       0       0       0       0       0       0
338          KM   ******************************************************************************

339          KK   RB6W5ROUTE   REACH
340          KM        Route   B3W5    through sub-basin       B6W5       to   CB6W5
341          RS       7    STOR       0
342          RC   0.045   0.045   0.045    4400  0.0241    0.00
343          RX   886.0   902.2   913.2   956.8  1002.7  1045.2  1060.0  1076.7
344          RY  2217.3  2217.0  2216.8  2217.8  2217.8  2217.2  2218.0  2218.6
345          KM   ******************************************************************************

346          KK    B6W5BASIN
347          KM   SUB-BASIN B6W5
348          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
349          BA   0.104
350          LG    0.15    0.35    4.70    0.31       0
351          UI      17      28      68     104     129     173     152     106      89      79
352          UI      67      57      43      39      34      27      21      19      16      13
353          UI      11       8       8       7       3       4       3       3       3       3
354          UI       4       3       0       0       0       0       0       0       0       0
355          UI       0       0       0       0       0       0       0       0       0       0
356          KM   ******************************************************************************

357          KK   CB6W5
358          KM        Combines flow from   B6W5 and   RB6W5
359          KO                                     21
360          HC       2
361          KM   ******************************************************************************

362          KK    B4W5BASIN
363          KM   SUB-BASIN B4W5
364          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
365          BA   0.071
366          LG    0.15    0.36    5.00    0.28       0
367          UI      13      31      68      94     124     128      83      69      60      47
368          UI      37      32      26      20      16      14      11       9       6       7
369          UI       4       3       2       3       2       3       2       0       0       0
370          UI       0       0       0       0       0       0       0       0       0       0
371          KM   ******************************************************************************

372          KK   RB7W5ROUTE   REACH
373          KM        Route   B4W5    through sub-basin       B7W5       to   CB7W5
374          RS       7    STOR       0
375          RC   0.060   0.040   0.060    4035  0.0243    0.00
376          RX   835.1   903.3   932.5  1081.2  1288.7  1316.1  1344.6  1382.2
377          RY  2271.5  2268.7  2269.1  2268.6  2270.1  2260.6  2269.7  2272.0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

378          KM   ******************************************************************************

379          KK    B7W5BASIN
380          KM   SUB-BASIN B7W5
381          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
382          BA   0.141
383          LG    0.15    0.36    5.10    0.26       0
384          UI      18      18      59      89     118     138     171     208     132     111
385          UI      99      89      79      69      59      47      43      40      33      28
386          UI      23      20      21      13      14      12       9       9       8       7
387          UI       4       3       4       4       3       4       3       4       3       4
388          UI       0       0       0       0       0       0       0       0       0       0
389          KM   ******************************************************************************

390          KK   CB7W5
391          KM        Combines flow from   B7W5 and   RB7W5
392          KO                                     21
393          HC       2
394          KM   ******************************************************************************

395          KK  CB67W5
396          KM        Combines flow from   CB7W5 and  CB6W5
397          HC       2
398          KM   ******************************************************************************

399          KK    B5W5BASIN
400          KM   SUB-BASIN B5W5
401          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
402          BA   0.085
403          KO                                     21
404          LG    0.15    0.37    5.30    0.24       0
```

```
 405        UI      11      14      37      59      76      90     116     119      76      66
 406        UI      60      54      45      40      33      28      25      22      18      15
 407        UI      13      13       9       9       7       6       6       5       4       2
 408        UI       3       2       2       2       2       3       2       2       0       0
 409        UI       0       0       0       0       0       0       0       0       0       0
 410        KM   ******************************************************************************

 411        KK   B5W5ABASIN
 412        KM   SUB-BASIN B5W5A
 413        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 414        BA   0.103
 415        KO                                      21
 416        LG    0.15    0.35    4.80    0.30       0
 417        UI      15      19      49      79     100     116     164     123      91      81
 418        UI      71      63      54      45      37      33      31      23      19      18
 419        UI      16      12      11       9       7       7       7       5       2       3
 420        UI       3       3       2       3       3       2       0       0       0       0
 421        UI       0       0       0       0       0       0       0       0       0       0
 422        KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 10

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


 423        KK    B1W5BASIN
 424        KM   SUB-BASIN B1W5
 425        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 426        BA   0.210
 427        KO                                      21
 428        LG    0.15    0.39    6.20    0.17       0
 429        UI      28      33      93     144     190     222     286     292     190     164
 430        UI     147     131     114      98      81      69      63      56      44      37
 431        UI      32      32      22      21      19      14      13      14      10       5
 432        UI       6       5       5       6       5       6       5       5       0       0
 433        UI       0       0       0       0       0       0       0       0       0       0
 434        KM   ******************************************************************************

 435        KK   DUMMY
 436        KM        Combines flow from   CW5, B5W5, B5W5A, and B1W5
 437        HC       5
 438        KM   ******************************************************************************

 439        KK    B1W6BASIN
 440        KM   SUB-BASIN B1W6
 441        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 442        BA   0.519
 443        LG    0.15    0.40    6.00    0.18       0
 444        UI      73      95     247     398     505     588     823     620     461     406
 445        UI     359     318     272     226     187     170     152     119      96      86
 446        UI      80      61      56      47      36      36      35      22      14      14
 447        UI      14      14      14      14      14      14       0       0       0       0
 448        UI       0       0       0       0       0       0       0       0       0       0
 449        UI       0       0       0       0       0       0       0       0       0       0
 450        UI       0       0       0       0       0       0       0       0       0       0
 451        UI       0       0       0       0       0       0       0       0       0       0
 452        KM   ******************************************************************************

 453        KK   RB2W6ROUTE   REACH
 454        KM        Route   B1W6    through sub-basin       B2W6       to   CB2W6
 455        RS       4    STOR       0
 456        RC   0.060   0.040   0.060    4434  0.0212    0.00
 457        RX   722.4   797.6   811.9   894.0  1001.0  1183.3  1194.5  1243.0
 458        RY  2768.0  2760.0  2758.0  2760.0  2760.0  2758.9  2760.0  2765.9
 459        KM   ******************************************************************************

 460        KK    B2W6BASIN
 461        KM   SUB-BASIN B2W6
 462        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 463        BA   0.957
 464        LG    0.15    0.37    5.20    0.25       1
 465        UI      77      76      77     189     269     353     451     506     566     610
 466        UI     717     885     820     580     503     458     436     401     374     350
 467        UI     319     299     271     246     210     194     184     176     163     149
 468        UI     126     116      98      98      87      84      85      61      59      59
 469        UI      58      44      38      37      38      37      38      35      14      15
 470        UI      15       0       0       0       0       0       0       0       0       0
 471        UI       0       0       0       0       0       0       0       0       0       0
 472        UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 11

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

 473        KM   ******************************************************************************

 474        KK   CB2W6
 475        KM       Combines flows from B2W6 and RB2W6
 476        HC       2
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477          KM   ******************************************************************************

478          KK    B3W6BASIN
479          KM   SUB-BASIN B3W6
480          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
481          BA   0.361
482          LG    0.15    0.40    6.00    0.18       2
483          UI      36      36      61     119     170     217     252     279     337     425
484          UI     309     247     214     202     181     166     151     139     120     104
485          UI      93      85      81      75      58      54      46      43      39      39
486          UI      28      28      27      22      17      18      17      18      15       6
487          UI       7       7       7       7       7       7       6       7       7       7
488          UI       7       0       0       0       0       0       0       0       0       0
489          UI       0       0       0       0       0       0       0       0       0       0
490          KM   ******************************************************************************

491          KK   CB3W6
492          KM        Combines flow from   B2W6,      B3W6 and   RB2W6
493          HC       2
494          KM   ******************************************************************************

495          KK   RB6W6ROUTE   REACH
496          KM        Route   CB3W6   through sub-basin       B6W6       to   CB6W6
497          RS       7    STOR       0
498          RC   0.060   0.040   0.060    5260  0.0281    0.00
499          RX   840.2   877.9   945.2  1019.8  1062.5  1117.4  1123.6  1159.6
500          RY  2680.3  2676.3  2677.2  2675.5  2676.8  2674.5  2674.5  2680.0
501          KM   ******************************************************************************

502          KK    B6W6BASIN
503          KM   SUB-BASIN B6W6
504          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
505          BA   0.217
506          LG    0.15    0.38    5.40    0.23       9
507          UI      33      53     126     199     246     311     351     225     189     168
508          UI     145     123     100      84      74      63      49      42      36      30
509          UI      26      22      16      16      17       7       6       7       6       6
510          UI       7       6       6       0       0       0       0       0       0       0
511          UI       0       0       0       0       0       0       0       0       0       0
512          KM   ******************************************************************************

513          KK   CB6W6
514          KM       Combine flow from RB6W6 and B6W6
515          HC       2
516          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 12

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

517          KK  RB9W6AROUTE   REACH
518          KM        Route   CB6W6   through sub-basin      B9W6       to   CB9W6
519          RS       4    STOR       0
520          RC   0.060   0.040   0.060    6768  0.0242    0.00
521          RX    59.0   108.0   130.0   181.0   203.0   212.0   251.0   416.0
522          RY  2548.0  2544.0  2542.0  2541.0  2542.0  2544.0  2546.0  2548.0
523          KM   ******************************************************************************

524          KK    B5W6BASIN
525          KM   SUB-BASIN B5W6
526          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
527          BA   0.383
528          LG    0.15    0.39    6.20    0.17      21
529          UI      37      37      59     119     165     218     255     279     329     420
530          UI     373     264     230     213     193     180     162     150     135     117
531          UI     100      92      85      81      73      61      52      47      44      40
532          UI      39      28      28      28      22      19      18      18      18      17
533          UI       7       7       7       7       7       7       7       7       7       7
534          KM   ******************************************************************************

535          KK   B4W6ABASIN
536          KM   SUB-BASIN B4W6A
537          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
538          BA   0.241
539          LG    0.15    0.40    6.00    0.18       2
540          UI      32      38     107     165     218     255     328     335     218     189
541          UI     168     151     130     113      92      80      73      63      51      42
542          UI      38      35      26      25      21      15      16      16      11       6
543          UI       7       6       6       6       6       7       6       6       0       0
544          UI       0       0       0       0       0       0       0       0       0       0
545          UI       0       0       0       0       0       0       0       0       0       0
546          KM   ******************************************************************************

547          KK   B4W6BBASIN
548          KM   SUB-BASIN B4W6B
549          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
550          BA   0.189
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551          LG    0.15    0.40    6.00    0.17      19
552          UI      30      52     124     188     235     314     277     191     162     145
553          UI     122     102      79      71      63      47      39      33      29      24
554          UI      20      15      15      14       6       6       5       6       6       6
555          UI       5       6       0       0       0       0       0       0       0       0
556          UI       0       0       0       0       0       0       0       0       0       0
557          UI       0       0       0       0       0       0       0       0       0       0
558          KM   ******************************************************************************

559          KK   CB4W6
560          KM        Combines flow from  B4W6A and   B4W6B
561          HC       2
562          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 13

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


563          KK   RB7W6ROUTE   REACH
564          KM        Route  CB4W6    through sub-basin       B7W6       to   CBW6
565          RS       8    STOR       0
566          RC   0.060   0.040   0.060    5674  0.0314    0.00
567          RX   967.3   969.1   973.5  1014.0  1024.7  1033.0  1047.6  1056.0
568          RY  2721.9  2721.1  2720.7  2720.1  2720.3  2720.8  2721.6  2721.9
569          KM   ******************************************************************************

570          KK    B7W6BASIN
571          KM   SUB-BASIN B7W6
572          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
573          BA   0.263
574          LG    0.15    0.39    6.20    0.16      28
575          UI      40      64     153     241     298     377     425     274     229     203
576          UI     176     149     121     101      90      76      60      50      45      36
577          UI      31      27      20      20      19       9       8       7       8       7
578          UI       8       8       7       0       0       0       0       0       0       0
579          UI       0       0       0       0       0       0       0       0       0       0
580          KM   ******************************************************************************

581          KK  CB7W6A
582          KM        Combines flow from  RB7W6 and B7W6
583          HC       2
584          KM   ******************************************************************************

585          KK   CB7W6
586          KM        Combines flow from  B5W6 and CB7W6A
587          HC       2
588          KM   ******************************************************************************

589          KK   RB9W6ROUTE   REACH
590          KM        Route   CB7W6    through sub-basin       B9W6       to   CB9W6
591          RS       4    STOR       0
592          RC   0.060   0.040   0.060    6716  0.0231    0.00
593          RX   827.5   860.5   876.8   922.6   983.1  1059.4  1096.4  1149.6
594          RY  2492.3  2491.2  2490.5  2489.3  2489.4  2490.4  2491.3  2492.0
595          KM   ******************************************************************************

596          KK    B9W6BASIN
597          KM   SUB-BASIN B9W6
598          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
599          BA   0.552
600          LG    0.15    0.35    4.80    0.30       1
601          UI      53      53      85     171     239     315     366     403     474     605
602          UI     537     383     331     305     278     261     234     216     193     169
603          UI     145     133     123     115     106      87      75      68      62      59
604          UI      56      41      40      41      32      26      26      26      27      24
605          UI      10      10      10      11      10      10      10      10      10      10
606          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 14

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


607          KK   CB9W6
608          KM        Combines flow from   B9W6, RB9W6 and   RB9W6A
609          KO                                      21
610          HC       3
611          KM   ******************************************************************************

612          KK    B8W6BASIN
613          KM   SUB-BASIN B8W6
614          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
615          BA   0.108
616          LG    0.15    0.40    6.00    0.17      21
617          UI      23      63     134     178     243     152     123     102      82      61
618          UI      52      40      28      26      18      16      11      11       6       5
619          UI       4       4       5       4       0       0       0       0       0       0
620          UI       0       0       0       0       0       0       0       0       0       0
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621          UI       0       0       0       0       0       0       0       0       0       0
622          UI       0       0       0       0       0       0       0       0       0       0
623          UI       0       0       0       0       0       0       0       0       0       0
624          KM  ******************************************************************************

625          KK  RB12W6ROUTE   REACH
626          KM        Route   B8W6    through sub-basin       B12W6      to   CB12W6
627          RS       8    STOR       0
628          RC   0.060   0.040   0.060    5916  0.0267    0.00
629          RX   913.1   932.0   945.6   957.0  1017.0  1062.2  1114.5  1158.6
630          RY  2510.0  2508.0  2507.8  2507.9  2507.2  2507.9  2509.0  2513.3
631          KM  ******************************************************************************

632          KK   B12W6BASIN
633          KM   SUB-BASIN B12W6
634          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
635          BA   0.229
636          LG    0.15    0.37    5.20    0.25       0
637          UI      31      35     102     158     206     241     313     318     207     179
638          UI     161     144     123     107      88      76      69      60      48      40
639          UI      35      34      25      23      20      15      15      15      11       6
640          UI       6       6       6       6       6       6       6       6       0       0
641          UI       0       0       0       0       0       0       0       0       0       0
642          UI       0       0       0       0       0       0       0       0       0       0
643          KM  ******************************************************************************

644          KK  CB12W6
645          KM        Combines flow from   B12W6, and RB12W6
646          KO                                   21
647          HC       2
648          KM  ******************************************************************************

649          KK  CB9W6A
650          KM        Combines flow from  CB12W6, and CB9W6
651          KO                                   21
652          HC       2
653          KM  *** START OF THE MODIFICATION - July 16, 2005 ***
654          KM  ******************************************************************************
1                                        HEC-1 INPUT                                          PAGE 15

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

655          KK  RB13WCROUTE   REACH
656          KM        Route  CB9W6A through sub-basin B13W6A
657          RS       4    STOR       0
658          RC   0.060   0.040   0.060    1544  0.0194    0.00
659          RX     0.0    27.5    63.0   114.3   169.1   207.9   238.5   366.4
660          RY  2428.0  2420.0  2419.8  2418.9  2418.8  2420.8  2419.8  2424.0
661          KM  ******************************************************************************

662          KK  B13W6ABASIN
663          KM   SUB-BASIN B13W6A
664          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
665          BA   0.113
666          LG    0.15    0.35    4.80    0.30       0
667          UI      36     139     239     315     188     148     109      77      60      39
668          UI      31      22      16      12       6       6       6       6       0       0
669          UI       0       0       0       0       0       0       0       0       0       0
670          UI       0       0       0       0       0       0       0       0       0       0
671          UI       0       0       0       0       0       0       0       0       0       0
672          UI       0       0       0       0       0       0       0       0       0       0
673          KM  ******************************************************************************

674          KK  C13W6A
675          KM        Combines flow from  RB13WC and B13W6A
676          KO                                   21
677          HC       2
678          KM  ******************************************************************************

679          KK  RB13W3ROUTE   REACH
680          KM        Route  C13W6A through sub-basin B13W6B
681          RS       4    STOR       0
682          RC   0.060   0.040   0.060    1405  0.0199    0.00
683          RX     0.0     4.8    13.0    19.0    53.5    97.1   262.2   343.9
684          RY  2394.0  2394.0  2392.0  2390.0  2388.7  2390.0  2392.0  2394.4
685          KM  ******************************************************************************
686          KM  *** END OF MODIFICATION
687          KM  ******************************************************************************

688          KK  B10W6ABASIN
689          KM   SUB-BASIN B10W6A
690          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
691          BA   0.158
692          LG    0.15    0.39    6.20    0.16      24
693          UI      34      91     196     262     355     223     179     150     119      89
694          UI      76      58      43      37      27      23      16      16       9       6
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 695          UI       7       6       6       7       0       0       0       0       0       0
 696          UI       0       0       0       0       0       0       0       0       0       0
 697          KM   ******************************************************************************

 698          KK  RB11WAROUTE   REACH
 699          KM        Route   B10W6A  through sub-basin       B11W6      to   CB11W6
 700          RS       8    STOR       0
 701          RC   0.060   0.040   0.060    3976  0.0262    0.00
 702          RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
 703          RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
1                                          HEC-1 INPUT                                          PAGE 16

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

 704          KM   ******************************************************************************

 705          KK   B11W6BASIN
 706          KM   SUB-BASIN B11W6
 707          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 708          BA   0.163
 709          LG    0.15    0.39    6.20    0.17       0
 710          UI      26      45     106     164     201     271     239     165     140     125
 711          UI     105      88      68      61      54      41      33      30      25      20
 712          UI      17      13      13      12       5       5       5       5       5       5
 713          UI       5       5       0       0       0       0       0       0       0       0
 714          UI       0       0       0       0       0       0       0       0       0       0
 715          UI       0       0       0       0       0       0       0       0       0       0
 716          UI       0       0       0       0       0       0       0       0       0       0
 717          KM   ******************************************************************************

 718          KK  B10W6BBASIN
 719          KM   SUB-BASIN B10W6B
 720          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 721          BA   0.164
 722          LG    0.15    0.40    6.00    0.18      12
 723          UI      29      60     137     197     254     310     195     164     138     118
 724          UI      94      75      65      54      40      35      30      22      20      14
 725          UI      14      11       6       5       6       6       5       6       6       0
 726          UI       0       0       0       0       0       0       0       0       0       0
 727          KM   ******************************************************************************

 728          KK  RB11WBROUTE   REACH
 729          KM        Route   B10W6B  through sub-basin       B11W6      to   CB11W6
 730          RS       8    STOR       0
 731          RC   0.060   0.040   0.060    3284  0.0253    0.00
 732          RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
 733          RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
 734          KM   ******************************************************************************

 735          KK  CB11W6
 736          KM        Combines flow from   B11W6, RB11WA and RB11WB
 737          KO                                      21
 738          HC       3
 739          KM   ******************************************************************************
 740          KM   *** START OF MODIFICATION - July 16, 2005
 741          KM   ******************************************************************************

 742          KK  RB13W1ROUTE   REACH
 743          KM        Route  CB11W6 through sub-basin B13W6B
 744          RS       4    STOR       0
 745          RC   0.060   0.040   0.060    4528  0.0239    0.00
 746          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
 747          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
 748          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 17

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

 749          KK   B14W6BASIN
 750          KM   SUB-BASIN B14W6
 751          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 752          BA   0.107
 753          KO                                      21
 754          LG    0.15    0.36    5.00    0.28       0
 755          UI      20      46     102     142     187     194     124     104      90      72
 756          UI      56      48      39      30      25      21      15      14       9      10
 757          UI       7       4       4       4       3       4       4       0       0       0
 758          UI       0       0       0       0       0       0       0       0       0       0
 759          UI       0       0       0       0       0       0       0       0       0       0
 760          UI       0       0       0       0       0       0       0       0       0       0
 761          KM   ******************************************************************************

 762          KK  RB13W2ROUTE   REACH
 763          KM        Route  B14W6  through sub-basin B13W6B
 764          RS       4    STOR       0
 765          RC   0.060   0.040   0.060    3279  0.0217    0.00
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766          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
767          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
768          KM   ******************************************************************************

769          KK  B13W6BBASIN
770          KM   SUB-BASIN B13W6B
771          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
772          BA   0.191
773          KO                                      21
774          LG   0.15    0.38    5.40    0.23       0
775          UI     26      29      85     132     172     201     261     265     172     150
776          UI    134     120     103      89      73      64      57      50      41      33
777          UI     30      28      20      20      17      13      12      13       8       5
778          UI      5       5       5       5       5       5       5       5       0       0
779          UI      0       0       0       0       0       0       0       0       0       0
780          UI      0       0       0       0       0       0       0       0       0       0
781          KM   ******************************************************************************

782          KK  C13W6B
783          KM        Combines flow from   RB13W3, RB13W1, RB13W2, B13W6B
784          HC      4
785          KM   ******************************************************************************

786          KK   DUMMY
787          KM        Combines flow from   DUMMY, B13W6B
788          HC      2
789          KM   ******************************************************************************
790          KM   *** END OF MODIFICATION
791          KM   ******************************************************************************

792          KK    B1W3BASIN
793          KM   SUB-BASIN B1W3
794          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
795          BA   0.451
796          LG   0.15    0.35    4.90    0.29       0
797          UI     42      42      61     133     180     247     281     315     360     445
1                                          HEC-1 INPUT                                          PAGE 18

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

798          UI    483     321     274     251     230     213     197     174     165     145
799          UI    126     109     104      96      89      78      70      55      54      48
800          UI     47      43      33      32      32      25      21      20      21      21
801          UI     20       9       8       8       8       8       8       9       8       8
802          UI      8       0       0       0       0       0       0       0       0       0
803          UI      0       0       0       0       0       0       0       0       0       0
804          UI      0       0       0       0       0       0       0       0       0       0
805          KM   ******************************************************************************

806          KK   B1W4ABASIN
807          KM   SUB-BASIN B1W4A
808          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
809          BA   0.131
810          LG   0.15    0.38    5.60    0.22       0
811          UI     22      42      97     143     178     247     164     131     113      98
812          UI     81      64      53      49      38      29      24      22      17      15
813          UI     11      10      10       4       4       5       4       4       4       5
814          UI      0       0       0       0       0       0       0       0       0       0
815          KM   ******************************************************************************

816          KK  RB1W4B   ROUTE   REACH
817          KM        Route   B1W4A   through sub-basin       B1W4B      to   CB1W4B
818          RS      2    STOR       0
819          RC   0.060   0.040   0.060    2066  0.0213    0.00
820          RX     0.0    31.3    79.9   172.0   197.0   258.1   272.3   296.2
821          RY  2610.0  2608.0  2606.0  2605.0  2606.0  2608.0  2610.0  2611.0
822          KM   ******************************************************************************

823          KK   B1W4BBASIN
824          KM   SUB-BASIN B1W4B
825          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
826          BA   0.117
827          LG   0.15    0.36    5.00    0.28       0
828          UI     19      31      77     118     145     194     171     119     100      89
829          UI     76      63      49      44      39      29      24      21      17      15
830          UI     13       9       9       9       4       3       4       4       3       4
831          UI      3       4       0       0       0       0       0       0       0       0
832          KM   ******************************************************************************

833          KK   CB1W4
834          KM        Combines flow from  RB1W4A and  B1W4B
835          HC      2
836          KM   ******************************************************************************

837          KK  RB2W4BROUTE   REACH
838          KM        Route   CB1W4   through sub-basin       B2W4B      to   CB2W4
839          RS      4    STOR       0
```

```
 840          RC   0.060   0.040   0.060    3686  0.0255    0.00
 841          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
 842          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2531.3  2538.0  2539.3
 843          KM   ******************************************************************
1                                        HEC-1 INPUT                                                    PAGE 19

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


 844          KK   B2W4BBASIN
 845          KM   SUB-BASIN B2W4B
 846          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 847          BA   0.104
 848          LG    0.15    0.35    4.80    0.30       0
 849          UI      18      33      77     114     141     196     130     104      90      77
 850          UI      65      51      42      38      30      23      20      18      13      12
 851          UI       8       8       8       3       3       4       3       4       3       3
 852          UI       0       0       0       0       0       0       0       0       0       0
 853          UI       0       0       0       0       0       0       0       0       0       0
 854          KM   ******************************************************************
 855          KM   *** START OF MODIFICATION - July 19, 2005
 856          KM   ******************************************************************

 857          KK  CB2W4B
 858          KM        Combines flow from   B2W4B and RB2W4B
 859          HC       2
 860          KM   *** END OF MODIFICATION **********
 861          KM   ******************************************************************

 862          KK   B2W4ABASIN
 863          KM   SUB-BASIN B2W4A
 864          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 865          BA   0.124
 866          LG    0.15    0.36    5.00    0.28       0
 867          UI      14      14      32      55      79      94     107     130     164     111
 868          UI      89      80      73      66      60      54      45      39      35      32
 869          UI      29      24      21      18      16      15      13      11      11       8
 870          UI       7       7       7       7       3       3       2       3       3       2
 871          UI       3       3       2       3       3       2       0       0       0       0
 872          KM   ******************************************************************

 873          KK   CB2W4
 874          KM        Combines flow from   B2W4A and CB2W4B
 875          HC       2
 876          KM   ******************************************************************

 877          KK  RB4W4AROUTE   REACH
 878          KM        Route   CB2W4   through sub-basin       B4W4       to   C2W4
 879          RS       5    STOR       0
 880          RC   0.060   0.040   0.060    8110  0.0234    0.00
 881          RX   580.0   605.0   616.0   631.0   635.0   660.0   701.0   762.0
 882          RY  2354.0  2352.7  2352.5  2352.3  2352.3  2352.6  2353.4  2354.0
 883          KM   ******************************************************************

 884          KK    B4W4BASIN
 885          KM   SUB-BASIN B4W4
 886          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 887          BA   0.192
 888          LG    0.15    0.35    4.50    0.36       0
 889          UI      20      19      37      67      98     122     142     157     194     230
 890          UI     153     127     114     106      95      88      80      70      62      52
 891          UI      48      45      42      35      31      25      24      22      21      16
 892          UI      15      15      12      10      10       9      10       7       4       4
1                                        HEC-1 INPUT                                                    PAGE 20

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

 893          UI       4       3       4       4       3       4       4       4       3       4
 894          UI       0       0       0       0       0       0       0       0       0       0
 895          UI       0       0       0       0       0       0       0       0       0       0
 896          KM   ******************************************************************

 897          KK   B1W4CBASIN
 898          KM   SUB-BASIN B1W4C
 899          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 900          BA   0.104
 901          LG    0.15    0.36    5.00    0.28       0
 902          UI      15      22      55      86     110     133     172     113      90      81
 903          UI      72      60      53      42      36      33      27      21      19      17
 904          UI      13      12      10       7       7       7       4       3       3       3
 905          UI       3       3       3       3       3       0       0       0       0       0
 906          KM   ******************************************************************

 907          KK  RB2W4C   ROUTE   REACH
 908          KM        Route   B1W4C   through sub-basin       B2W4C      to   CB2W4C
 909          RS       4    STOR       0
 910          RC   0.060   0.040   0.060    9176  0.0253    0.00
```

```
911          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
912          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2537.3  2538.0  2539.3
913          KM   ******************************************************************************

914          KK   B2W4CBASIN
915          KM   SUB-BASIN B2W4C
916          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
917          BA   0.132
918          LG    0.15    0.35    4.80    0.30       0
919          UI      13      13      23      43      62      80      92     102     123     155
920          UI     114      90      78      73      67      61      55      51      44      38
921          UI      33      32      29      27      22      19      17      16      14      14
922          UI      11      10      10       9       6       6       7       6       6       2
923          KM   ******************************************************************************

924          KK  CB2W4C
925          KM        Combines flow from   RB1W4C and B2W4C
926          KO                                      21
927          HC       2
928          KM   ******************************************************************************

929          KK  RB4W4B  ROUTE   REACH
930          KM        Route   CB2W4C  through sub-basin       B4W4       to   CB4W4
931          RS       5    STOR       0
932          RC   0.060   0.040   0.060    1051  0.0190    0.00
933          RX     0.0    18.0    46.6    90.7   154.6   178.6   197.3   307.9
934          RY  2314.8  2314.0  2312.0  2311.2  2310.7  2311.2  2312.0  2314.0
935          KM   ******************************************************************************

936          KK   CB4W4
937          KM        Combines flow from   B4W4, RB4W4A and RB4W4
938          KO                                      21
939          HC       3
940          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 21

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


941          KK    B3W4BASIN
942          KM   SUB-BASIN B3W4
943          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
944          BA   0.094
945          LG    0.15    0.36    5.00    0.28       0
946          UI      16      36      77     114     145     177     112      94      79      68
947          UI      55      42      38      30      23      20      17      13      12       8
948          UI       8       6       3       3       4       3       3       3       3       0
949          UI       0       0       0       0       0       0       0       0       0       0
950          KM   ******************************************************************************

951          KK  RB5W4AROUTE   REACH
952          KM        Route   B3W4    through sub-basin       B5W4A      to   CB5W4A
953          RS       6    STOR       0
954          RC   0.060   0.040   0.060    2975  0.0208    0.00
955          RX   948.4  1000.4  1033.9  1065.3  1116.2  1149.5  1202.0  1248.6
956          RY  2352.4  2351.1  2351.2  2351.7  2351.0  2351.5  2351.0  2352.4
957          KM   ******************************************************************************

958          KK   B5W4ABASIN
959          KM   SUB-BASIN B5W4A
960          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
961          BA   0.084
962          LG    0.15    0.37    5.30    0.24       0
963          UI      14      27      62      92     114     159     105      83      73      63
964          UI      52      41      34      31      25      17      17      14      11       9
965          UI       7       7       6       2       3       3       3       2       3       3
966          UI       0       0       0       0       0       0       0       0       0       0
967          KM   ******************************************************************************

968          KK  CB5W4A
969          KM        Combines flow from   RB5W4A and B5W4A
970          HC       2
971          KM   ******************************************************************************

972          KK  RB5W4BROUTE   REACH
973          KM        Route   CB5W4A  through sub-basin      B5W4B      to   CB5W4B
974          RS       5    STOR       0
975          RC   0.060   0.040   0.060    4687  0.0243    0.00
976          RX     0.0    42.2    79.2    92.7   286.7   394.5   502.4   538.1
977          RY  2370.0  2368.0  2366.0  2365.5  2364.2  2365.5  2364.2  2366.5
978          KM   ******************************************************************************

979          KK   B5W4BBASIN
980          KM   SUB-BASIN B5W4B
981          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
982          BA   0.152
983          LG    0.15    0.35    4.55    0.35       0
```

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          984          UI      19      19      55      88     118     141     165     219     157     120
          985          UI     109      96      87      76      67      56      47      44      40      32
          986          UI      27      24      20      20      14      15      12      10       9      10
          987          UI       8       3       4       4       3       4       3       4       4       3
          988          UI       4       0       0       0       0       0       0       0       0       0
          989          KM   ***********************************************************************
1                                                   HEC-1 INPUT                                          PAGE 22

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


          990          KK  CB5W4B
          991          KM        Combines flow from   RB5W4B and B5W4B
          992          KO                                      21
          993          HC       2
          994          KM   ***********************************************************************

          995          KK   DUMMY
          996          KM        Combines flow from  B1W3, CB4W4, CB5W4B
          997          HC       4
          998          ZZ
1
               SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    17        B1W1
                .
                .
    37          .        B2W1
                .           .
                .           .
    49      CB2W1............
                V
                V
    53      RB6W1
                .
                .
    60          .        B6W1
                .           .
                .           .
    71      CB6W1............
                .
                .
    75          .        B8W1
                .           .
                .           .
    87          .           .        B3W1
                .           .           .
                .           .           .
    98          .           .           .        B4W1
                .           .           .           .
                .           .           .           .
   108          .           .       CB3W1............
                .           .           V
                .           .           V
   112          .           .       RB7W1
                .           .           .
                .           .           .
   119          .           .           .        B7W1
                .           .           .           .
                .           .           .           .
   130          .           .       CB7W1............
                .           .           .
                .           .           .
   134      CB9W1A........................
                V
                V
   138      RB9W1A
                .
                .
   145          .       B10W1
                .           V
                .           V
   156          .      RB9W1B
                .           .
                .           .
   163          .           .        B9W1
                .           .           .
                .           .           .
   174      CB9W1........................
                .
                .
   178          .        B5W1
                .           .
```

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                .           .
192     CB13WA............
            V
            V
196     RB13WA
                .
                .
203             .       B13W1
                .           .
                .           .
214             .           .       B14W1
                .           .           V
                .           .           V
225             .           .      RB13WB
                .           .           .
                .           .           .
232     CB13W1......................
                .
                .
237             .       B15W1
                .           .
                .           .
249             .           .       B16W1
                .           .           .
                .           .           .
261             .           .           .       B17W1
                .           .           .           .
                .           .           .           .
273             .           .           .           .       B18W1
                .           .           .           .           .
                .           .           .           .           .
285             .           .           .           .           .        B1W2
                .           .           .           .           .           .
                .           .           .           .           .           .
297             .           .           .           .           .           .        B2W2
                .           .           .           .           .           .           .
                .           .           .           .           .           .           .
309             .           .           .           .           .       CB2W2............
                .           .           .           .           .           .
                .           .           .           .           .           .
313             .           .           .           .           .           .        B4W2
                .           .           .           .           .           .           .
                .           .           .           .           .           .           .
324      DUMMY.......................................................................
                .
                .
329             .        B3W5
                .           V
                .           V
339             .       RB6W5
                .           .
                .           .
346             .           .        B6W5
                .           .           .
                .           .           .
357             .       CB6W5............
                .           .
                .           .
362             .           .        B4W5
                .           .           V
                .           .           V
372             .           .       RB7W5
                .           .           .
                .           .           .
379             .           .           .        B7W5
                .           .           .           .
                .           .           .           .
390             .           .       CB7W5............
                .           .           .
                .           .           .
395             .      CB67W5............
                .           .
                .           .
399             .           .        B5W5
                .           .           .
                .           .           .
411             .           .           .       B5W5A
                .           .           .           .
                .           .           .           .
423             .           .           .           .        B1W5
                .           .           .           .           .
                .           .           .           .           .
435      DUMMY.............................................
                .
                .
439             .        B1W6
                .           V
```

```
                 .          V
453              .      RB2W6
                 .          .
                 .          .
460              .          .        B2W6
                 .          .           .
                 .          .           .
474              .      CB2W6............
                 .          .
                 .          .
478              .          .        B3W6
                 .          .           .
                 .          .           .
491              .      CB3W6............
                 .          V
                 .          V
495              .      RB6W6
                 .          .
                 .          .
502              .          .        B6W6
                 .          .           .
                 .          .           .
513              .      CB6W6............
                 .          V
                 .          V
517              .     RB9W6A
                 .          .
                 .          .
524              .          .        B5W6
                 .          .           .
                 .          .           .
535              .          .           .       B4W6A
                 .          .           .          .
                 .          .           .          .
547              .          .           .          .       B4W6B
                 .          .           .          .          .
                 .          .           .          .          .
559              .          .           .       CB4W6............
                 .          .           .          V
                 .          .           .          V
563              .          .           .       RB7W6
                 .          .           .          .
                 .          .           .          .
570              .          .           .          .        B7W6
                 .          .           .          .          .
                 .          .           .          .          .
581              .          .           .      CB7W6A............
                 .          .           .          .
                 .          .           .          .
585              .          .       CB7W6............
                 .          .           V
                 .          .           V
589              .          .       RB9W6
                 .          .           .
                 .          .           .
596              .          .           .        B9W6
                 .          .           .          .
                 .          .           .          .
607              .      CB9W6........................
                 .          .
                 .          .
612              .          .        B8W6
                 .          .           V
                 .          .           V
625              .          .      RB12W6
                 .          .           .
                 .          .           .
632              .          .           .       B12W6
                 .          .           .          .
                 .          .           .          .
644              .          .      CB12W6............
                 .          .           .
                 .          .           .
649              .     CB9W6A............
                 .          V
                 .          V
655              .     RB13WC
                 .          .
                 .          .
662              .          .      B13W6A
                 .          .           .
                 .          .           .
674              .     C13W6A............
                 .          V
                 .          V
679              .     RB13W3
                 .          .
```

```
688          .           .      B10W6A
             .           .           V
             .           .           V
698          .           .      RB11WA
             .           .           .
             .           .           .
705          .           .           .       B11W6
             .           .           .           .
             .           .           .           .
718          .           .           .           .      B10W6B
             .           .           .           .           V
             .           .           .           .           V
728          .           .           .           .      RB11WB
             .           .           .           .           .
             .           .           .           .           .
735          .           .      CB11W6.......................
             .           .           V
             .           .           V
742          .           .      RB13W1
             .           .           .
             .           .           .
749          .           .           .       B14W6
             .           .           .           V
             .           .           .           V
762          .           .           .      RB13W2
             .           .           .           .
             .           .           .           .
769          .           .           .           .      B13W6B
             .           .           .           .           .
             .           .           .           .           .
782          .      C13W6B...................................
             .           .
             .           .
786     DUMMY............
             .
             .
792          .        B1W3
             .           .
             .           .
806          .           .       B1W4A
             .           .           V
             .           .           V
816          .           .      RB1W4B
             .           .           .
             .           .           .
823          .           .           .       B1W4B
             .           .           .           .
             .           .           .           .
833          .           .       CB1W4............
             .           .           V
             .           .           V
837          .           .      RB2W4B
             .           .           .
             .           .           .
844          .           .           .       B2W4B
             .           .           .           .
             .           .           .           .
857          .           .      CB2W4B............
             .           .           .
             .           .           .
862          .           .           .       B2W4A
             .           .           .           .
             .           .           .           .
873          .           .       CB2W4............
             .           .           V
             .           .           V
877          .           .      RB4W4A
             .           .           .
             .           .           .
884          .           .           .        B4W4
             .           .           .           .
             .           .           .           .
897          .           .           .           .       B1W4C
             .           .           .           .           V
             .           .           .           .           V
907          .           .           .           .      RB2W4C
             .           .           .           .           .
             .           .           .           .           .
914          .           .           .           .           .       B2W4C
             .           .           .           .           .           .
             .           .           .           .           .           .
924          .           .           .           .      CB2W4C............
             .           .           .           .           V
             .           .           .           .           V
929          .           .           .           .      RB4W4B
             .           .           .           .           .
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                .          .          .          .          .
  936           .          .      CB4W4.......................
                .          .          .
                .          .          .
  941           .          .          .       B3W4
                .          .          .          V
                .          .          .          V
  951           .          .          .      RB5W4A
                .          .          .          .
                .          .          .          .
  958           .          .          .          .       B5W4A
                .          .          .          .           .
                .          .          .          .           .
  968           .          .          .      CB5W4A............
                .          .          .          V
                .          .          .          V
  972           .          .          .      RB5W4B
                .          .          .          .
                .          .          .          .
  979           .          .          .          .       B5W4B
                .          .          .          .           .
                .          .          .          .           .
  990           .          .          .      CB5W4B............
                .          .          .          .
                .          .          .          .
  995       DUMMY.................................
```

```
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                    *          609 SECOND STREET           *
 *                                      *                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   13JUN06  TIME  07:48:38  *                    *           (916) 756-1104             *
 *                                      *                    *                                      *
 ****************************************                    ****************************************
```

```
Project ID: NN_6EX - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_6EX.DAT
MODEL:       100-year, 6-hour Existing Condition Model
DEVELOPER:   Dibble & Associates, Inc.                 DATE: Sept. 29, 2003

NOTES:       This model incorporates 2 new sub-basins B13W6A and B13W6B, which
             was not included in the original model, NN_24E.DAT created in
             Feb. 22, 2004. (Modification: July 16, 2005)

             Modification was made on creating CB2W4B (i.e., combining RB2W4B
             and B2W4B) before it gets combined with B2W4A. - July 19, 2005


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

     IT          HYDROGRAPH TIME DATA
                        NMIN          3  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME       1557  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .05 HOURS
                       TOTAL TIME BASE   39.95 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


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

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              **************
              *            *
 232 KK       *    CB13W1  *
              *            *
              **************

 234 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS

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

              **************
              *            *
 237 KK       *     B15W1  *     BASIN
              *            *
              **************

 240 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS

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

              **************
              *            *
 249 KK       *     B16W1  *     BASIN
              *            *
              **************

 253 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS

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

              **************
              *            *
 261 KK       *     B17W1  *     BASIN
              *            *
              **************

 265 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              **************
              *            *
 273 KK       *     B18W1  *     BASIN
              *            *
              **************

 277 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 285 KK       *      B1W2  *     BASIN
              *            *
              **************

 289 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 297 KK       *      B2W2  *     BASIN
              *            *
              **************

 301 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 313 KK       *      B4W2  *     BASIN
              *            *
              **************

 317 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              **************
              *            *
 357 KK       *     CB6W5  *
              *            *
              **************

 359 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 390 KK       *     CB7W5  *
              *            *
              **************

 392 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 399 KK       *      B5W5  *     BASIN
              *            *
              **************

 403 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS

          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


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


              **************
              *            *
 411 KK       *     B5W5A  *     BASIN
              *            *
              **************

 415 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 423 KK     *     B1W5   *     BASIN
            *            *
            **************

 427 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 607 KK     *    CB9W6   *
            *            *
            **************

 609 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 644 KK     *   CB12W6   *
            *            *
            **************

 646 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 649 KK     *   CB9W6A   *
            *            *
            **************

 651 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS  ,
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 674 KK     *    C13W6A  *
            *            *
            **************

 676 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 735 KK     *    CB11W6  *
            *            *
            **************

 737 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 749 KK     *     B14W6  *     BASIN
            *            *
            **************

 753 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 769 KK     *    B13W6B  *     BASIN
            *            *
            **************

 773 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 924 KK     *    CB2W4C  *
            *            *
            **************

 926 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 936 KK     *     CB4W4  *
            *            *
            **************

 938 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS

        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


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

            **************
            *            *
 990 KK     *    CB5W4B  *
            *            *
            **************

 992 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION   FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          B1W1    261.    4.40          48.         12.          7.       .33

        HYDROGRAPH AT
+                          B2W1    110.    4.30          18.          5.          3.       .12

        2 COMBINED AT
+                         CB2W1    366.    4.35          67.         17.         10.       .45

        ROUTED TO
+                         RB6W1    349.    4.70          67.         17.         10.       .45
```

```
+                                                                                                  2016.29        4.70

          HYDROGRAPH AT
+                          B6W1        93.   4.20          13.          3.          2.        .11

          2 COMBINED AT
+                         CB6W1       391.   4.65          79.         20.         12.        .56

          HYDROGRAPH AT
+                          B8W1       138.   4.30          23.          6.          3.        .15

          HYDROGRAPH AT
+                          B3W1       134.   4.20          20.          5.          3.        .14

          HYDROGRAPH AT
+                          B4W1       147.   4.20          22.          6.          3.        .14

          2 COMBINED AT
+                         CB3W1       280.   4.20          42.         11.          6.        .28

          ROUTED TO
+                         RB7W1       263.   4.50          42.         11.          6.        .28
+                                                                                                  2020.50        4.50

          HYDROGRAPH AT
+                          B7W1       143.   4.20          20.          5.          3.        .14

          2 COMBINED AT
+                         CB7W1       374.   4.40          62.         16.          9.        .42

          3 COMBINED AT
+                        CB9W1A       850.   4.50         165.         41.         25.       1.14

          ROUTED TO
+                        RB9W1A       825.   4.75         164.         41.         25.       1.14
+                                                                                                  1881.70        4.75

          HYDROGRAPH AT
+                         B10W1       127.   4.15          18.          5.          3.        .12

          ROUTED TO
+                        RB9W1B       127.   4.20          18.          5.          3.        .12
+                                                                                                  1827.88        4.20

          HYDROGRAPH AT
+                          B9W1        76.   4.20          10.          2.          1.        .11

          3 COMBINED AT
+                         CB9W1       904.   4.70         192.         48.         29.       1.36

          HYDROGRAPH AT
+                          B5W1       271.   4.50          56.         14.          8.        .38

          2 COMBINED AT
+                        CB13WA      1148.   4.70         248.         62.         37.       1.75

          ROUTED TO
+                        RB13WA      1128.   4.95         248.         62.         37.       1.75
+                                                                                                  1610.45        4.95

          HYDROGRAPH AT
+                         B13W1       171.   4.30          27.          7.          4.        .21

          HYDROGRAPH AT
+                         B14W1       145.   4.20          22.          6.          3.        .14

          ROUTED TO
+                        RB13WB       145.   4.25          22.          6.          3.        .14
+                                                                                                  1553.56        4.25

          3 COMBINED AT
+                        CB13W1      1239.   4.90         297.         74.         45.       2.10

          HYDROGRAPH AT
+                         B15W1        32.   4.05           4.          1.          1.        .02

          HYDROGRAPH AT
+                         B16W1        20.   4.00           2.          1.          0.        .01

          HYDROGRAPH AT
+                         B17W1        13.   4.00           1.          0.          0.        .01

          HYDROGRAPH AT
+                         B18W1        59.   4.10           8.          2.          1.        .05

          HYDROGRAPH AT
+                          B1W2        78.   4.20          12.          3.          2.        .08
```

```
          HYDROGRAPH AT
+                         B2W2       95.    4.25        15.        4.        2.       .10
          2 COMBINED AT
+                         CB2W2     173.    4.25        27.        7.        4.       .18
          HYDROGRAPH AT
+                         B4W2      105.    4.10        14.        4.        2.       .10
          7 COMBINED AT
+                         DUMMY    1325.    4.85       353.       88.       53.      2.48
          HYDROGRAPH AT
+                         B3W5       82.    4.10        10.        3.        2.       .08
          ROUTED TO
+                         RB6W5      73.    4.50        10.        3.        2.       .08
+                                                                                  2217.52        4.50
          HYDROGRAPH AT
+                         B6W5       96.    4.20        13.        3.        2.       .10
          2 COMBINED AT
+                         CB6W5     147.    4.40        24.        6.        4.       .18
          HYDROGRAPH AT
+                         B4W5       71.    4.15         9.        2.        1.       .07
          ROUTED TO
+                         RB7W5      69.    4.30         9.        2.        1.       .07
+                                                                                  2262.74        4.30
          HYDROGRAPH AT
+                         B7W5      125.    4.25        19.        5.        3.       .14
          2 COMBINED AT
+                         CB7W5     193.    4.30        28.        7.        4.       .21
          2 COMBINED AT
+                         CB67W5    334.    4.35        52.       13.        8.       .40
          HYDROGRAPH AT
+                         B5W5       78.    4.25        12.        3.        2.       .09
          HYDROGRAPH AT
+                         B5W5A      91.    4.25        13.        3.        2.       .10
          HYDROGRAPH AT
+                         B1W5      205.    4.25        32.        8.        5.       .21
          5 COMBINED AT
+                         DUMMY    1683.    4.35       462.      116.       70.      3.27
          HYDROGRAPH AT
+                         B1W6      505.    4.25        78.       19.       12.       .52
          ROUTED TO
+                         RB2W6     460.    4.55        78.       19.       12.       .52
+                                                                                  2759.69        4.55
          HYDROGRAPH AT
+                         B2W6      670.    4.45       130.       33.       20.       .96
          2 COMBINED AT
+                         CB2W6    1128.    4.50       208.       52.       31.      1.48
          HYDROGRAPH AT
+                         B3W6      303.    4.40        56.       14.        8.       .36
          2 COMBINED AT
+                         CB3W6    1413.    4.45       263.       66.       40.      1.84
          ROUTED TO
+                         RB6W6    1390.    4.65       263.       66.       40.      1.84
+                                                                                  2677.07        4.65
          HYDROGRAPH AT
+                         B6W6      219.    4.20        34.        9.        5.       .22
          2 COMBINED AT
+                         CB6W6    1502.    4.65       297.       74.       45.      2.05
          ROUTED TO
+                         RB9W6A   1474.    4.80       297.       74.       45.      2.05
+                                                                                  2543.58        4.80
```

```
          HYDROGRAPH AT
+                         B5W6      351.   4.40      74.      19.      11.      .38
          HYDROGRAPH AT
+                         B4W6A     233.   4.25      37.       9.       6.      .24
          HYDROGRAPH AT
+                         B4W6B     211.   4.20      36.       9.       5.      .19
          2 COMBINED AT
+                         CB4W6     443.   4.20      73.      18.      11.      .43
          ROUTED TO
+                         RB7W6     436.   4.40      73.      18.      11.      .43
+                                                                          2721.43      4.40
          HYDROGRAPH AT
+                         B7W6      302.   4.20      56.      14.       8.      .26
          2 COMBINED AT
+                         CB7W6A    712.   4.30     128.      32.      19.      .69
          2 COMBINED AT
+                         CB7W6    1057.   4.35     202.      51.      31.     1.08
          ROUTED TO
+                         RB9W6    1011.   4.55     202.      51.      31.     1.08
+                                                                          2490.70      4.55
          HYDROGRAPH AT
+                         B9W6      411.   4.40      72.      18.      11.      .55
          3 COMBINED AT
+                         CB9W6    2696.   4.70     570.     143.      86.     3.68
          HYDROGRAPH AT
+                         B8W6      134.   4.10      21.       5.       3.      .11
          ROUTED TO
+                         RB12W6    122.   4.45      21.       5.       3.      .11
+                                                                          2507.90      4.45
          HYDROGRAPH AT
+                         B12W6     207.   4.25      31.       8.       5.      .23
          2 COMBINED AT
+                         CB12W6    304.   4.35      52.      13.       8.      .34
          2 COMBINED AT
+                         CB9W6A   2907.   4.65     622.     156.      94.     4.02
          ROUTED TO
+                         RB13WC   2906.   4.70     622.     156.      94.     4.02
+                                                                          2421.32      4.70
          HYDROGRAPH AT
+                         B13W6A    128.   4.05      14.       4.       2.      .11
          2 COMBINED AT
+                         C13W6A   2922.   4.70     636.     160.      96.     4.13
          ROUTED TO
+                         RB13W3   2918.   4.75     636.     160.      96.     4.13
+                                                                          2392.11      4.75
          HYDROGRAPH AT
+                         B10W6A    199.   4.10      32.       8.       5.      .16
          ROUTED TO
+                         RB11WA    177.   4.55      32.       8.       5.      .16
+                                                                          2501.86      4.55
          HYDROGRAPH AT
+                         B11W6     170.   4.20      25.       6.       4.      .16
          HYDROGRAPH AT
+                         B10W6B    183.   4.15      29.       7.       4.      .16
          ROUTED TO
+                         RB11WB    169.   4.55      29.       7.       4.      .16
+                                                                          2501.85      4.55
          3 COMBINED AT
+                         CB11W6    467.   4.45      86.      22.      13.      .49
          ROUTED TO
+                         RB13W1    460.   4.60      86.      22.      13.      .49
```

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+                                                                                                  2419.13        4.60

          HYDROGRAPH AT
+                          B14W6      107.    4.15        14.        3.        2.       .11

          ROUTED TO
+                          RB13W2     101.    4.35        14.        3.        2.       .11
+                                                                                                  2418.39        4.35

          HYDROGRAPH AT
+                          B13W6B     175.    4.25        27.        7.        4.       .19

          4 COMBINED AT
+                          C13W6B    3509.    4.70       762.      192.      115.      4.91

          2 COMBINED AT
+                          DUMMY     5161.    4.70      1224.      307.      185.      8.19

          HYDROGRAPH AT
+                           B1W3      332.    4.40        58.       15.        9.       .45

          HYDROGRAPH AT
+                          B1W4A      132.    4.15        18.        5.        3.       .13

          ROUTED TO
+                          RB1W4B     125.    4.30        18.        5.        3.       .13
+                                                                                                  2605.81        4.30

          HYDROGRAPH AT
+                          B1W4B      110.    4.20        15.        4.        2.       .12

          2 COMBINED AT
+                          CB1W4      231.    4.25        34.        8.        5.       .25

          ROUTED TO
+                          RB2W4B     227.    4.35        34.        8.        5.       .25
+                                                                                                  2534.69        4.35

          HYDROGRAPH AT
+                          B2W4B       99.    4.15        13.        3.        2.       .10

          2 COMBINED AT
+                          CB2W4B     312.    4.30        47.       12.        7.       .35

          HYDROGRAPH AT
+                          B2W4A      100.    4.30        16.        4.        2.       .12

          2 COMBINED AT
+                          CB2W4      412.    4.30        63.       16.        9.       .48

          ROUTED TO
+                          RB4W4A     358.    4.75        63.       16.        9.       .48
+                                                                                                  2353.48        4.75

          HYDROGRAPH AT
+                           B4W4      137.    4.35        22.        6.        3.       .19

          HYDROGRAPH AT
+                          B1W4C       95.    4.20        14.        3.        2.       .10

          ROUTED TO
+                          RB2W4C      66.    4.85        14.        3.        2.       .10
+                                                                                                  2536.60        4.85

          HYDROGRAPH AT
+                          B2W4C       99.    4.35        17.        4.        3.       .13

          2 COMBINED AT
+                          CB2W4C     133.    4.65        30.        8.        5.       .24

          ROUTED TO
+                          RB4W4B     132.    4.75        30.        8.        5.       .24
+                                                                                                  2311.43        4.75

          3 COMBINED AT
+                          CB4W4      579.    4.70       116.       29.       17.       .90

          HYDROGRAPH AT
+                           B3W4       93.    4.15        12.        3.        2.       .09

          ROUTED TO
+                          RB5W4A      82.    4.55        12.        3.        2.       .09
+                                                                                                  2351.48        4.55

          HYDROGRAPH AT
+                          B5W4A       84.    4.15        12.        3.        2.       .08
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          2 COMBINED AT
+                        CB5W4A      139.    4.45        24.        6.        4.       .18
          ROUTED TO
+                        RB5W4B      118.    4.90        24.        6.        4.       .18
+                                                                                          2364.74        4.90
          HYDROGRAPH AT
+                         B5W4B      121.    4.25        18.        5.        3.       .15
          2 COMBINED AT
+                        CB5W4B      170.    4.60        42.       10.        6.       .33
          4 COMBINED AT
+                         DUMMY     6159.    4.70      1440.      361.      217.      9.87

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

D.6.1 NORTH-NORTH BASIN

(B) 100-Year, 6-Hour Event, Future Condition Model

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.1                *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   13JUN06  TIME  14:59:55  *                                    *          (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   Project ID: NN_6FC - Major Basin: 01 - Return Period: 100 Years
    2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_6FC.DAT
    3           ID   MODEL:       100-Year, 6-Hour Future Condition Model
    4           ID   DEVELOPER:   Dibble & Associates, Inc.                 DATE: Sept. 29, 2003
    5           ID
    6           ID   NOTES:       This model incorporates 2 new sub-basins B13W6A and B13W6B, which
    7           ID                was not included in the original model, NN_6E.DAT created in
    8           ID                Feb. 22, 2004. (Modification: July 16, 2005)
    9           ID
   10           ID                Modification was made on creating CB2W4B (i.e., combining RB2W4B
   11           ID                and B2W4B) before it gets combined with B2W4A. - July 19, 2005
   12           ID
                *DIAGRAM
   13           ID
   14           IT       3                    800
   15           IO       5
   16           IN      15
                *
                *

   17           KK    B1W1BASIN
   18           KM   SUB-BASIN B1W1
   19           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   20           BA   0.332
   21           KM   RAINFALL DEPTH OF 3.48 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
   22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.9408 WAS USED.
   23           PB   3.273
   24           PC   0.000   0.013   0.019   0.029   0.044   0.057   0.069   0.081   0.094   0.107
   25           PC   0.121   0.137   0.159   0.205   0.289   0.466   0.677   0.808   0.877   0.919
   26           PC   0.947   0.961   0.974   0.987   1.000
   27           LG    0.15    0.39    5.70    0.20       0
   28           UI      30      31      39      92     126     170     198     221     245     298
   29           UI     363     257     205     185     171     157     145     134     123     110
   30           UI      97      85      76      72      68      64      51      48      38      39
   31           UI      34      33      30      24      23      23      18      15      14      15
   32           UI      15      14       8       6       5       6       6       6       6       5
   33           UI       6       0       0       0       0       0       0       0       0       0
   34           UI       0       0       0       0       0       0       0       0       0       0
   35           UI       0       0       0       0       0       0       0       0       0       0
   36           KM   ******************************************************************************

   37           KK    B2W1BASIN
   38           KM   SUB-BASIN B2W1
   39           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   40           BA   0.119
   41           LG    0.15    0.39    6.20    0.17       0
   42           UI      14      15      38      63      87     103     118     157     138      98
   43           UI      84      76      69      62      54      47      38      35      32      29
   44           UI      23      19      17      16      15      11      10       9       7       7
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  45        UI      7       7       3       3       3       2       3       3       3       2
  46        UI      3       3       3       0       0       0       0       0       0       0
  47        UI      0       0       0       0       0       0       0       0       0       0
  48        KM   ******************************************************************************
1                                        HEC-1 INPUT                                          PAGE  2

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


  49        KK   CB2W1
  50        KM       Combines flows from  B1W1 and   B2W1
  51        HC      2
  52        KM   ******************************************************************************

  53        KK   RB6W1ROUTE   REACH
  54        KM       Route   CB2W1   through sub-basin       B6W1       to   CB6W1
  55        RS      7    STOR       0
  56        RC   0.060   0.040   0.060    5153  0.0276    0.00
  57        RX   885.1   917.4   993.1  1090.0  1128.2  1186.2  1209.6  1279.8
  58        RY  2018.0  2014.8  2016.7  2015.3  2018.0  2017.4  2016.0  2018.0
  59        KM   ******************************************************************************

  60        KK    B6W1BASIN
  61        KM   SUB-BASIN B6W1
  62        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  63        BA   0.110
  64        LG    0.15    0.35    4.50    0.35       1
  65        UI      16      23      58      92     115     141     183     118      96      86
  66        UI      75      65      55      44      39      34      29      23      19      18
  67        UI      14      12      11       8       8       7       4       4       3       3
  68        UI       3       3       3       4       3       0       0       0       0       0
  69        UI       0       0       0       0       0       0       0       0       0       0
  70        KM   ******************************************************************************

  71        KK   CB6W1
  72        KM       Combines flow from   B6W1 and   RB6W1
  73        HC      2
  74        KM   ******************************************************************************

  75        KK    B8W1BASIN
  76        KM   SUB-BASIN B8W1
  77        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  78        BA   0.152
  79        LG    0.15    0.39    5.80    0.19       0
  80        UI      18      18      49      80     112     132     151     200     176     125
  81        UI     108      98      87      79      69      59      51      43      41      37
  82        UI      30      24      22      20      19      14      13      12       9       9
  83        UI      10       8       4       3       4       3       4       3       4       3
  84        UI       4       3       4       0       0       0       0       0       0       0
  85        UI       0       0       0       0       0       0       0       0       0       0
  86        KM   ******************************************************************************

  87        KK    B3W1BASIN
  88        KM   SUB-BASIN B3W1
  89        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
  90        BA   0.135
  91        LG    0.15    0.40    6.00    0.18       0
  92        UI      20      29      70     113     141     173     224     146     118     104
  93        UI      94      78      68      55      47      42      35      28      24      22
  94        UI      17      16      13       9      10      10       5       4       3       4
  95        UI       4       3       4       4       3       0       0       0       0       0
  96        UI       0       0       0       0       0       0       0       0       0       0
  97        KM   ******************************************************************************
1                                        HEC-1 INPUT                                          PAGE  3

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


  98        KK    B4W1BASIN
  99        KM   SUB-BASIN B4W1
 100        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 101        BA   0.143
 102        LG    0.15    0.39    6.20    0.17       0
 103        UI      22      35      83     130     163     205     231     149     124     111
 104        UI      95      82      65      55      49      41      33      27      24      20
 105        UI      17      15      11      10      11       5       4       4       4       5
 106        UI       4       4       4       0       0       0       0       0       0       0
 107        KM   ******************************************************************************

 108        KK   CB3W1
 109        KM       Combines flow from   B3W1 and   B4W1
 110        HC      2
 111        KM   ******************************************************************************

 112        KK   RB7W1ROUTE   REACH
 113        KM       Route   CB3W1   through sub-basin       B7W1       to   CB7W1
 114        RS      5    STOR       0
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115          RC   0.060   0.040   0.060    5005  0.0280    0.00
116          RX   944.3   993.7  1022.8  1054.8  1127.7  1170.8  1179.2  1226.5
117          RY  2030.0  2020.1  2021.3  2021.3  2019.5  2020.1  2019.7  2030.0
118          KM   ******************************************************************************

119          KK    B7W1BASIN
120          KM   SUB-BASIN B7W1
121          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
122          BA   0.145
123          LG    0.15    0.38    5.40    0.23       0
124          UI      23      40      95     144     181     241     212     146     125     111
125          UI      93      79      61      54      48      36      31      25      22      18
126          UI      16      11      11      11       5       4       4       5       4       5
127          UI       4       5       0       0       0       0       0       0       0       0
128          UI       0       0       0       0       0       0       0       0       0       0
129          KM   ******************************************************************************

130          KK   CB7W1
131          KM        Combines flow from   B7W1 and   RB7W1
132          HC       2
133          KM   ******************************************************************************

134          KK  CB9W1A
135          KM        Combines flow from   B8W1,      CB6W1 and  CB7W1
136          HC       3
137          KM   ******************************************************************************

138          KK  RB9W1A   ROUTE   REACH
139          KM        Route   CB9W1   through sub-basin       B9W1       to   CB10W1
140          RS       8    STOR       0
141          RC   0.060   0.040   0.060    5841  0.0318    0.00
142          RX   693.0   735.4   785.0   820.4   877.4   990.0  1016.0  1059.6
143          RY  1884.0  1880.4  1881.2  1880.9  1881.6  1880.8  1880.4  1884.0
144          KM   ******************************************************************************
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

145          KK   B10W1BASIN
146          KM   SUB-BASIN B10W1
147          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
148          BA   0.122
149          LG    0.13    0.39    5.80    0.18       6
150          UI      20      39      91     133     166     230     153     122     105      91
151          UI      75      61      49      45      35      27      23      20      16      14
152          UI      10      10       9       4       4       4       4       4       4       4
153          UI       0       0       0       0       0       0       0       0       0       0
154          UI       0       0       0       0       0       0       0       0       0       0
155          KM   ******************************************************************************

156          KK  RB9W1B   ROUTE   REACH
157          KM        Route   B10W1   through sub-basin       B9W1       to   CB10W1
158          RS       4    STOR       0
159          RC   0.060   0.040   0.060    1233  0.0292    0.00
160          RX   916.6   936.5   967.9   982.9  1009.5  1038.5  1095.3  1140.2
161          RY  1838.0  1833.0  1828.0  1827.3  1827.2  1828.0  1829.9  1830.0
162          KM   ******************************************************************************

163          KK    B9W1BASIN
164          KM   SUB-BASIN B9W1
165          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
166          BA   0.107
167          LG    0.12    0.35    3.74    0.50       9
168          UI      17      29      70     108     132     178     157     108      92      82
169          UI      69      58      44      41      35      27      22      19      16      13
170          UI      12       8       8       8       4       3       3       4       3       3
171          UI       4       3       0       0       0       0       0       0       0       0
172          UI       0       0       0       0       0       0       0       0       0       0
173          KM   ******************************************************************************

174          KK   CB9W1
175          KM        Combines flow from   B9W1,      RB9W1 and  RB10W1
176          HC       3
177          KM   ******************************************************************************

178          KK    B5W1BASIN
179          KM   SUB-BASIN B5W1
180          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
181          BA   0.385
182          LG    0.15    0.39    5.80    0.19       0
183          UI      28      28      28      54      87     115     147     176     191     209
184          UI     229     263     319     322     221     193     176     163     155     145
185          UI     135     127     118     110     100      91      81      75      69      65
186          UI      64      59      53      46      42      37      36      33      31      30
187          UI      28      21      22      21      22      16      13      14      14      14
188          UI      14       0       0       0       0       0       0       0       0       0
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 189          UI       0       0       0       0       0       0       0       0       0       0
 190          UI       0       0       0       0       0       0       0       0       0       0
 191          KM   ***********************************************************************
1                                          HEC-1 INPUT                                          PAGE  5

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

 192          KK  CB13WA
 193          KM        Combines flow from   B5W1 and   CB10W1
 194          HC       2
 195          KM   ***********************************************************************

 196          KK  RB13WA   ROUTE   REACH
 197          KM        Route   C12W1   through sub-basin       B13W1      to   CB13W1
 198          RS       8    STOR       0
 199          RC   0.060   0.040   0.060    7424  0.0353    0.00
 200          RX   743.1   818.0   855.4   862.5  1137.5  1144.7  1174.0  1232.5
 201          RY  1638.0  1625.0  1612.0  1610.0  1610.0  1612.0  1625.0  1638.0
 202          KM   ***********************************************************************

 203          KK   B13W1BASIN
 204          KM   SUB-BASIN B13W1
 205          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 206          BA   0.210
 207          LG    0.15    0.35    4.80    0.30       0
 208          UI      24      25      59     102     144     170     193     248     270     174
 209          UI     151     136     121     111      98      88      72      63      58      53
 210          UI      45      39      32      29      27      23      19      18      16      12
 211          UI      11      12      12       5       5       5       4       5       5       4
 212          UI       5       5       4       5       0       0       0       0       0       0
 213          KM   ***********************************************************************

 214          KK   B14W1BASIN
 215          KM   SUB-BASIN B14W1
 216          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 217          BA   0.144
 218          LG    0.15    0.39    6.20    0.17       0
 219          UI      21      30      77     119     152     184     238     156     126     111
 220          UI      99      85      72      58      50      46      38      29      26      23
 221          UI      18      16      14      10      10      11       5       4       4       5
 222          UI       4       4       4       4       4       0       0       0       0       0
 223          UI       0       0       0       0       0       0       0       0       0       0
 224          KM   ***********************************************************************

 225          KK  RB13WB   ROUTE   REACH
 226          KM        Route   B14W1   through sub-basin       B13W1      to   CB13W1
 227          RS       2    STOR       0
 228          RC   0.060   0.040   0.060     641  0.0281    0.00
 229          RX     0.0    26.2    48.5   140.8   209.5   289.8   303.2   320.4
 230          RY  1560.0  1553.6  1554.0  1554.8  1554.0  1552.5  1554.0  1560.0
 231          KM   ***********************************************************************

 232          KK  CB13W1
 233          KM        Combines flow from   B13W1,    RB14W1 and  RB13W1
 234          KO                                      21
 235          HC       3
 236          KM   ***********************************************************************
1                                          HEC-1 INPUT                                          PAGE  6

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

 237          KK   B15W1BASIN
 238          KM   SUB-BASIN B14W1
 239          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 240          KO                                      21
 241          BA   0.024
 242          LG    0.15    0.38    6.40    0.16       0
 243          UI      14      55      86      51      37      22      16      10       7       5
 244          UI       2       2       2       0       0       0       0       0       0       0
 245          UI       0       0       0       0       0       0       0       0       0       0
 246          UI       0       0       0       0       0       0       0       0       0       0
 247          UI       0       0       0       0       0       0       0       0       0       0
 248          KM   ***********************************************************************

 249          KK   B16W1BASIN
 250          KM   SUB-BASIN B16W1
 251          KM    PHOINIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 252          BA   0.015
 253          KO                                      21
 254          LG    0.15    0.39    6.20    0.17       0
 255          UI      12      43      55      31      20      13       8       4       4       1
 256          UI       1       2       0       0       0       0       0       0       0       0
 257          UI       0       0       0       0       0       0       0       0       0       0
 258          UI       0       0       0       0       0       0       0       0       0       0
 259          UI       0       0       0       0       0       0       0       0       0       0
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 260          KM   ***********************************************************************

 261          KK   B17W1BASIN
 262          KM   SUB-BASIN B17W1
 263          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 264          BA   0.010
 265          KO                                   21
 266          LG    0.15    0.40    6.00    0.18     0
 267          UI      11      40      32      20    11       6       4       2       1       1
 268          UI       0       0       0       0     0       0       0       0       0       0
 269          UI       0       0       0       0     0       0       0       0       0       0
 270          UI       0       0       0       0     0       0       0       0       0       0
 271          UI       0       0       0       0     0       0       0       0       0       0
 272          KM   ***********************************************************************

 273          KK   B18W1BASIN
 274          KM   SUB-BASIN B18W1
 275          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 276          BA   0.049
 277          KO                                   21
 278          LG    0.15    0.38    6.40    0.16     0
 279          UI      12      42      78     111    99      66      54      42      29      26
 280          UI      17      14      10       8     6       6       2       2       3       2
 281          UI       2       0       0       0     0       0       0       0       0       0
 282          UI       0       0       0       0     0       0       0       0       0       0
 283          UI       0       0       0       0     0       0       0       0       0       0
 284          KM   ***********************************************************************
1                                          HEC-1 INPUT                                    PAGE  7

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


 285          KK    B1W2BASIN
 286          KM   SUB-BASIN B1W2
 287          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 288          BA   0.079
 289          KO                                   21
 290          LG    0.14    0.39    5.80    0.18     4
 291          UI      12      19      46      73    89     114     127      82      69      61
 292          UI      53      44      37      30    28      22      18      15      13      11
 293          UI      10       8       6       6     6       2       3       2       2       3
 294          UI       2       3       2       0     0       0       0       0       0       0
 295          UI       0       0       0       0     0       0       0       0       0       0
 296          KM   ***********************************************************************

 297          KK    B2W2BASIN
 298          KM   SUB-BASIN B2W2
 299          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 300          BA   0.101
 301          KO                                   21
 302          LG    0.15    0.39    5.70    0.20     1
 303          UI      14      15      45      69    92     106     138     141      91      79
 304          UI      70      64      55      47    38      33      31      26      22      17
 305          UI      16      15      11      10     9       6       7       7       4       3
 306          UI       3       2       3       3     3       2       3       3       0       0
 307          UI       0       0       0       0     0       0       0       0       0       0
 308          KM   ***********************************************************************

 309          KK   CB2W2
 310          KM        Combines flow from   B1W2 and   B2W2
 311          HC       2
 312          KM   ***********************************************************************

 313          KK    B4W2BASIN
 314          KM   SUB-BASIN B4W2
 315          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 316          BA   0.096
 317          KO                                   21
 318          LG    0.15    0.39    5.70    0.20     1
 319          UI      19      48     104     140   201     150     110      93      77      59
 320          UI      48      40      31      24    21      14      13       9       9       6
 321          UI       4       4       3       4     4       3       0       0       0       0
 322          UI       0       0       0       0     0       0       0       0       0       0
 323          KM   ***********************************************************************

 324          KK   DUMMY
 325          KM        Combines flow from B4W2, B1W2, B2W2,B18W1,B17W1, B16W1, B15W1 and CB13W1
 326          HC       7
 327          KM   ***********************************************************************
 328          KM   ***********************************************************************
1                                          HEC-1 INPUT                                    PAGE  8

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


 329          KK    B3W5BASIN
 330          KM   SUB-BASIN B3W5
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331          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
332          BA   0.080
333          LG    0.15    0.36    5.00    0.28       0
334          UI      16      40      87     116     168     125      91      79      63      49
335          UI      40      34      25      20      18      12      10       8       8       5
336          UI       3       3       3       3       3       3       0       0       0       0
337          UI       0       0       0       0       0       0       0       0       0       0
338          KM   ******************************************************************************

339          KK   RB6W5ROUTE   REACH
340          KM        Route   B3W5    through sub-basin       B6W5       to   CB6W5
341          RS       7    STOR       0
342          RC   0.045   0.045   0.045    4400  0.0241    0.00
343          RX   886.0   902.2   913.2   956.8  1002.7  1045.2  1060.0  1076.7
344          RY  2217.3  2217.0  2216.8  2217.8  2217.8  2217.2  2218.0  2218.6
345          KM   ******************************************************************************

346          KK    B6W5BASIN
347          KM   SUB-BASIN B6W5
348          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
349          BA   0.104
350          LG    0.15    0.35    4.70    0.31       0
351          UI      17      28      68     104     129     173     152     106      89      79
352          UI      67      57      43      39      34      27      21      19      16      13
353          UI      11       8       8       7       3       4       3       3       3       3
354          UI       4       3       0       0       0       0       0       0       0       0
355          UI       0       0       0       0       0       0       0       0       0       0
356          KM   ******************************************************************************

357          KK   CB6W5
358          KM        Combines flow from   B6W5 and   RB6W5
359          KO                                     21
360          HC       2
361          KM   ******************************************************************************

362          KK    B4W5BASIN
363          KM   SUB-BASIN B4W5
364          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
365          BA   0.071
366          LG    0.15    0.36    5.00    0.28       0
367          UI      13      31      68      94     124     128      83      69      60      47
368          UI      37      32      26      20      16      14      11       9       6       7
369          UI       4       3       2       3       2       3       2       0       0       0
370          UI       0       0       0       0       0       0       0       0       0       0
371          KM   ******************************************************************************

372          KK   RB7W5ROUTE   REACH
373          KM        Route   B4W5    through sub-basin       B7W5       to   CB7W5
374          RS       7    STOR       0
375          RC   0.060   0.040   0.060    4035  0.0243    0.00
376          RX   835.1   903.3   932.5  1081.2  1288.7  1316.1  1344.6  1382.2
377          RY  2271.5  2268.7  2269.1  2268.6  2270.1  2260.6  2269.7  2272.0
1                                        HEC-1 INPUT                                                    PAGE  9

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

378          KM   ******************************************************************************

379          KK    B7W5BASIN
380          KM   SUB-BASIN B7W5
381          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
382          BA   0.141
383          LG    0.15    0.36    5.10    0.26       0
384          UI      18      18      59      89     118     138     171     208     132     111
385          UI      99      89      79      69      59      47      43      40      33      28
386          UI      23      20      21      13      14      12       9       9       8       7
387          UI       4       3       4       4       3       4       3       4       3       4
388          UI       0       0       0       0       0       0       0       0       0       0
389          KM   ******************************************************************************

390          KK   CB7W5
391          KM        Combines flow from   B7W5 and   RB7W5
392          KO                                     21
393          HC       2
394          KM   ******************************************************************************

395          KK  CB67W5
396          KM        Combines flow from   CB7W5 and  CB6W5
397          HC       2
398          KM   ******************************************************************************

399          KK    B5W5BASIN
400          KM   SUB-BASIN B5W5
401          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
402          BA   0.085
403          KO                                     21
404          LG    0.15    0.37    5.30    0.24       0
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 405        UI     11     14     37     59     76     90    116    119     76     66
 406        UI     60     54     45     40     33     28     25     22     18     15
 407        UI     13     13      9      9      7      6      6      5      4      2
 408        UI      3      2      2      2      2      3      2      2      0      0
 409        UI      0      0      0      0      0      0      0      0      0      0
 410        KM   ******************************************************************************

 411        KK   B5W5ABASIN
 412        KM   SUB-BASIN B5W5A
 413        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 414        BA   0.103
 415        KO                                   21
 416        LG    0.15   0.35   4.80   0.30      0
 417        UI     15     19     49     79    100    116    164    123     91     81
 418        UI     71     63     54     45     37     33     31     23     19     18
 419        UI     16     12     11      9      7      7      7      5      2      3
 420        UI      3      3      2      3      3      2      0      0      0      0
 421        UI      0      0      0      0      0      0      0      0      0      0
 422        KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 10

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


 423        KK    B1W5BASIN
 424        KM   SUB-BASIN B1W5
 425        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 426        BA   0.210
 427        KO                                   21
 428        LG    0.15   0.39   6.20   0.17      0
 429        UI     28     33     93    144    190    222    286    292    190    164
 430        UI    147    131    114     98     81     69     63     56     44     37
 431        UI     32     32     22     21     19     14     13     14     10      5
 432        UI      6      5      5      6      5      6      5      5      0      0
 433        UI      0      0      0      0      0      0      0      0      0      0
 434        KM   ******************************************************************************

 435        KK   DUMMY
 436        KM       Combines flow from   CW5, B5W5, B5W5A, and B1W5
 437        HC      5
 438        KM   ******************************************************************************

 439        KK    B1W6BASIN
 440        KM   SUB-BASIN B1W6
 441        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 442        BA   0.519
 443        LG    0.10   0.40   6.00   0.15     15
 444        UI     83    142    340    519    643    863    759    526    446    396
 445        UI    336    280    217    196    171    131    106     92     79     64
 446        UI     56     41     41     39     16     16     16     16     16     16
 447        UI     16     16      0      0      0      0      0      0      0      0
 448        UI      0      0      0      0      0      0      0      0      0      0
 449        UI      0      0      0      0      0      0      0      0      0      0
 450        UI      0      0      0      0      0      0      0      0      0      0
 451        UI      0      0      0      0      0      0      0      0      0      0
 452        KM   ******************************************************************************

 453        KK   RB2W6ROUTE   REACH
 454        KM       Route   B1W6    through sub-basin       B2W6       to   CB2W6
 455        RS      4    STOR       0
 456        RC   0.060  0.040  0.060   4434  0.0212    0.00
 457        RX   722.4  797.6  811.9  894.0  1001.0  1183.3  1194.5  1243.0
 458        RY  2768.0 2760.0 2758.0 2760.0  2760.0  2758.9  2760.0  2765.9
 459        KM   ******************************************************************************

 460        KK    B2W6BASIN
 461        KM   SUB-BASIN B2W6
 462        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 463        BA   0.957
 464        LG    0.11   0.37   5.20   0.22     12
 465        UI     82     83     82    238    325    435    518    584    631    744
 466        UI    910    913    631    535    491    465    427    390    367    333
 467        UI    304    270    238    212    197    190    177    157    135    117
 468        UI    106    101     91     90     76     64     63     63     49     40
 469        UI     41     40     41     40     28     15     16     16     16     16
 470        UI     16      0      0      0      0      0      0      0      0      0
 471        UI      0      0      0      0      0      0      0      0      0      0
 472        UI      0      0      0      0      0      0      0      0      0      0
1                                          HEC-1 INPUT                                          PAGE 11

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

 473        KM   ******************************************************************************

 474        KK   CB2W6
 475        KM       Combines flows from B2W6 and RB2W6
 476        HC      2
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477          KM   ***********************************************************************

478          KK    B3W6BASIN
479          KM   SUB-BASIN B3W6
480          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
481          BA   0.361
482          LG    0.10     0.40     6.00     0.15       17
483          UI      40       41       93      162      228      275      312      377      480      322
484          UI     259      234      212      193      174      155      132      115      100       94
485          UI      85       70       61       52       48       44       38       31       31       25
486          UI      20       19       20       20       10        8        8        7        8        8
487          UI       8        7        8        8        8        7        0        0        0        0
488          UI       0        0        0        0        0        0        0        0        0        0
489          UI       0        0        0        0        0        0        0        0        0        0
490          KM   ***********************************************************************

491          KK   CB3W6
492          KM        Combines flow from   B2W6,      B3W6 and   RB2W6
493          HC       2
494          KM   ***********************************************************************

495          KK   RB6W6ROUTE   REACH
496          KM        Route   CB3W6   through sub-basin       B6W6       to   CB6W6
497          RS       7    STOR        0
498          RC   0.060   0.040   0.060    5260  0.0281    0.00
499          RX   840.2   877.9   945.2  1019.8  1062.5  1117.4  1123.6  1159.6
500          RY  2680.3  2676.3  2677.2  2675.5  2676.8  2674.5  2674.5  2680.0
501          KM   ***********************************************************************

502          KK    B6W6BASIN
503          KM   SUB-BASIN B6W6
504          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
505          BA   0.217
506          LG    0.10     0.38     5.40     0.19       24
507          UI      36       70      161      237      294      410      271      217      187      163
508          UI     134      107       88       79       63       48       42       36       28       24
509          UI      18       18       15        7        7        7        7        7        7        7
510          UI       0        0        0        0        0        0        0        0        0        0
511          UI       0        0        0        0        0        0        0        0        0        0
512          KM   ***********************************************************************

513          KK   CB6W6
514          KM       Combine flow from RB6W6 and B6W6
515          HC       2
516          KM   ***********************************************************************
1                                          HEC-1 INPUT                                          PAGE 12

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

517          KK  RB9W6AROUTE   REACH
518          KM        Route   CB6W6   through sub-basin      B9W6       to   CB9W6
519          RS       4    STOR        0
520          RC   0.060   0.040   0.060    6768  0.0242    0.00
521          RX    59.0   108.0   130.0   181.0   203.0   212.0   251.0   416.0
522          RY  2548.0  2544.0  2542.0  2541.0  2542.0  2544.0  2546.0  2548.0
523          KM   ***********************************************************************

524          KK    B5W6BASIN
525          KM   SUB-BASIN B5W6
526          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
527          BA   0.383
528          LG    0.10     0.39     6.20     0.14       35
529          UI      42       41       91      157      226      275      308      368      487      378
530          UI     280      249      228      207      187      169      149      128      107      100
531          UI      93       87       68       58       53       48       46       37       31       32
532          UI      26       20       20       21       20       12        8        8        8        8
533          UI       8        8        8        8        8        8        8        0        0        0
534          KM   ***********************************************************************

535          KK   B4W6ABASIN
536          KM   SUB-BASIN B4W6A
537          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
538          BA   0.241
539          LG    0.10     0.40     6.00     0.15       17
540          UI      37       58      140      221      274      346      389      250      210      186
541          UI     161      137      111       93       82       69       55       47       40       34
542          UI      28       24       19       18       18        7        8        7        7        7
543          UI       7        7        7        0        0        0        0        0        0        0
544          UI       0        0        0        0        0        0        0        0        0        0
545          UI       0        0        0        0        0        0        0        0        0        0
546          KM   ***********************************************************************

547          KK   B4W6BBASIN
548          KM   SUB-BASIN B4W6B
549          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
550          BA   0.189
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551          LG    0.11    0.40    6.00    0.15      31
552          UI      32      60     141     206     256     357     236     190     163     141
553          UI     117      93      76      70      54      41      37      31      25      21
554          UI      16      16      13       6       6       6       6       6       6       6
555          UI       0       0       0       0       0       0       0       0       0       0
556          UI       0       0       0       0       0       0       0       0       0       0
557          UI       0       0       0       0       0       0       0       0       0       0
558          KM   ******************************************************************************

559          KK   CB4W6
560          KM        Combines flow from  B4W6A and   B4W6B
561          HC       2
562          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 13

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

563          KK   RB7W6ROUTE   REACH
564          KM        Route  CB4W6    through sub-basin       B7W6       to   CBW6
565          RS       8    STOR       0
566          RC   0.060   0.040   0.060    5674  0.0314    0.00
567          RX   967.3   969.1   973.5  1014.0  1024.7  1033.0  1047.6  1056.0
568          RY  2721.9  2721.1  2720.7  2720.1  2720.3  2720.8  2721.6  2721.9
569          KM   ******************************************************************************

570          KK    B7W6BASIN
571          KM   SUB-BASIN B7W6
572          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
573          BA   0.263
574          LG    0.12    0.39    6.20    0.14      37
575          UI      42      72     172     263     326     438     384     267     225     201
576          UI     171     142     109      99      87      67      54      46      40      33
577          UI      28      21      21      19       8       8       8       8       8       8
578          UI       8       8       0       0       0       0       0       0       0       0
579          UI       0       0       0       0       0       0       0       0       0       0
580          KM   ******************************************************************************

581          KK  CB7W6A
582          KM        Combines flow from  RB7W6 and B7W6
583          HC       2
584          KM   ******************************************************************************

585          KK   CB7W6
586          KM        Combines flow from  B5W6 and CB7W6A
587          HC       2
588          KM   ******************************************************************************

589          KK   RB9W6ROUTE   REACH
590          KM        Route   CB7W6    through sub-basin       B9W6       to   CB9W6
591          RS       4    STOR       0
592          RC   0.060   0.040   0.060    6716  0.0231    0.00
593          RX   827.5   860.5   876.8   922.6   983.1  1059.4  1096.4  1149.6
594          RY  2492.3  2491.2  2490.5  2489.3  2489.4  2490.4  2491.3  2492.0
595          KM   ******************************************************************************

596          KK    B9W6BASIN
597          KM   SUB-BASIN B9W6
598          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
599          BA   0.552
600          LG    0.10    0.35    4.80    0.25      15
601          UI      60      59     131     227     325     396     445     530     703     544
602          UI     405     357     328     301     268     244     214     185     155     144
603          UI     134     125      97      84      76      69      66      53      46      46
604          UI      37      30      29      30      29      18      11      11      12      11
605          UI      12      11      12      11      12      11      12       0       0       0
606          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 14

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

607          KK   CB9W6
608          KM        Combines flow from   B9W6, RB9W6 and   RB9W6A
609          KO                                      21
610          HC       3
611          KM   ******************************************************************************

612          KK    B8W6BASIN
613          KM   SUB-BASIN B8W6
614          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
615          BA   0.108
616          LG    0.11    0.40    6.00    0.15      34
617          UI      24      76     151     206     240     147     123      97      74      58
618          UI      47      33      27      21      17      12      12       5       5       5
619          UI       4       5       5       0       0       0       0       0       0       0
620          UI       0       0       0       0       0       0       0       0       0       0
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621          UI      0       0       0       0       0       0       0       0       0       0
622          UI      0       0       0       0       0       0       0       0       0       0
623          UI      0       0       0       0       0       0       0       0       0       0
624          KM  ******************************************************************************

625          KK  RB12W6ROUTE   REACH
626          KM        Route   B8W6    through sub-basin       B12W6      to   CB12W6
627          RS      8    STOR       0
628          RC  0.060   0.040   0.060    5916  0.0267    0.00
629          RX  913.1   932.0   945.6   957.0  1017.0  1062.2  1114.5  1158.6
630          RY 2510.0  2508.0  2507.8  2507.9  2507.2  2507.9  2509.0  2513.3
631          KM  ******************************************************************************

632          KK  B12W6BASIN
633          KM  SUB-BASIN B12W6
634          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
635          BA  0.229
636          LG   0.10    0.37    5.20    0.21      15
637          UI     35      55     133     211     259     329     370     238     198     179
638          UI    152     129     106      89      78      66      52      44      38      32
639          UI     27      23      17      17      18       7       7       7       7       7
640          UI      6       7       7       0       0       0       0       0       0       0
641          UI      0       0       0       0       0       0       0       0       0       0
642          UI      0       0       0       0       0       0       0       0       0       0
643          KM  ******************************************************************************

644          KK  CB12W6
645          KM        Combines flow from   B12W6, and RB12W6
646          KO                                   21
647          HC      2
648          KM  ******************************************************************************

649          KK  CB9W6A
650          KM        Combines flow from  CB12W6, and CB9W6
651          KO                                   21
652          HC      2
653          KM  *** START OF THE MODIFICATION - July 16, 2005 ***
654          KM  ******************************************************************************
1                                      HEC-1 INPUT                                          PAGE 15

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

655          KK  RB13WCROUTE   REACH
656          KM        Route  CB9W6A through sub-basin B13W6A
657          RS      4    STOR       0
658          RC  0.060   0.040   0.060    1544  0.0194    0.00
659          RX    0.0    27.5    63.0   114.3   169.1   207.9   238.5   366.4
660          RY 2428.0  2420.0  2419.8  2418.9  2418.8  2420.8  2419.8  2424.0
661          KM  ******************************************************************************

662          KK  B13W6ABASIN
663          KM  SUB-BASIN B13W6A
664          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
665          BA  0.113
666          LG   0.14    0.35    4.80    0.29       3
667          UI     36     139     239     315     188     148     109      77      60      39
668          UI     31      22      16      12       6       6       6       6       0       0
669          UI      0       0       0       0       0       0       0       0       0       0
670          UI      0       0       0       0       0       0       0       0       0       0
671          UI      0       0       0       0       0       0       0       0       0       0
672          UI      0       0       0       0       0       0       0       0       0       0
673          KM  ******************************************************************************

674          KK  C13W6A
675          KM        Combines flow from  RB13WC and B13W6A
676          KO                                   21
677          HC      2
678          KM  ******************************************************************************

679          KK  RB13W3ROUTE   REACH
680          KM        Route  C13W6A through sub-basin B13W6B
681          RS      4    STOR       0
682          RC  0.060   0.040   0.060    1405  0.0199    0.00
683          RX    0.0     4.8    13.0    19.0    53.5    97.1   262.2   343.9
684          RY 2394.0  2394.0  2392.0  2390.0  2388.7  2390.0  2392.0  2394.4
685          KM  ******************************************************************************
686          KM  *** END OF MODIFICATION
687          KM  ******************************************************************************

688          KK  B10W6ABASIN
689          KM  SUB-BASIN B10W6A
690          KM   PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
691          BA  0.158
692          LG   0.11    0.39    6.20    0.14      37
693          UI     35     111     221     302     351     216     178     143     108      84
694          UI     69      49      40      30      25      17      17       8       7       7
```

```
 695          UI       7       6       7       0       0       0       0       0       0       0
 696          UI       0       0       0       0       0       0       0       0       0       0
 697          KM   ******************************************************************************

 698          KK  RB11WAROUTE   REACH
 699          KM        Route   B10W6A  through sub-basin       B11W6      to   CB11W6
 700          RS       8    STOR       0
 701          RC   0.060   0.040   0.060    3976  0.0262    0.00
 702          RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
 703          RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
1                                          HEC-1 INPUT                                          PAGE 16

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

 704          KM   ******************************************************************************

 705          KK   B11W6BASIN
 706          KM   SUB-BASIN B11W6
 707          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 708          BA   0.163
 709          LG    0.10    0.39    6.20    0.14      15
 710          UI      30      70     156     216     285     295     189     159     137     110
 711          UI      86      72      60      45      37      33      24      20      15      15
 712          UI      11       6       5       6       6       6       6       0       0       0
 713          UI       0       0       0       0       0       0       0       0       0       0
 714          UI       0       0       0       0       0       0       0       0       0       0
 715          UI       0       0       0       0       0       0       0       0       0       0
 716          UI       0       0       0       0       0       0       0       0       0       0
 717          KM   ******************************************************************************

 718          KK  B10W6BBASIN
 719          KM   SUB-BASIN B10W6B
 720          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 721          BA   0.164
 722          LG    0.10    0.40    6.00    0.15      26
 723          UI      32      83     177     240     343     255     189     160     130     101
 724          UI      81      71      51      40      36      25      22      16      16      10
 725          UI       6       7       6       6       7       6       0       0       0       0
 726          UI       0       0       0       0       0       0       0       0       0       0
 727          KM   ******************************************************************************

 728          KK  RB11WBROUTE   REACH
 729          KM        Route   B10W6B  through sub-basin       B11W6      to   CB11W6
 730          RS       8    STOR       0
 731          RC   0.060   0.040   0.060    3284  0.0253    0.00
 732          RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
 733          RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
 734          KM   ******************************************************************************

 735          KK  CB11W6
 736          KM        Combines flow from   B11W6, RB11WA and RB11WB
 737          KO                                      21
 738          HC       3
 739          KM   ******************************************************************************
 740          KM   *** START OF MODIFICATION - July 16, 2005
 741          KM   ******************************************************************************

 742          KK  RB13W1ROUTE   REACH
 743          KM        Route  CB11W6 through sub-basin B13W6B
 744          RS       4    STOR       0
 745          RC   0.060   0.040   0.060    4528  0.0239    0.00
 746          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
 747          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
 748          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 17

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

 749          KK   B14W6BASIN
 750          KM   SUB-BASIN B14W6
 751          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 752          BA   0.107
 753          KO                                      21
 754          LG    0.10    0.36    5.00    0.23      15
 755          UI      23      62     133     177     240     151     121     102      81      60
 756          UI      51      40      29      25      18      16      11      10       6       5
 757          UI       4       4       5       4       0       0       0       0       0       0
 758          UI       0       0       0       0       0       0       0       0       0       0
 759          UI       0       0       0       0       0       0       0       0       0       0
 760          UI       0       0       0       0       0       0       0       0       0       0
 761          KM   ******************************************************************************

 762          KK  RB13W2ROUTE   REACH
 763          KM        Route  B14W6  through sub-basin B13W6B
 764          RS       4    STOR       0
 765          RC   0.060   0.040   0.060    3279  0.0217    0.00
```

```
766          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
767          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
768          KM  ********************************************************************************

769          KK  B13W6BBASIN
770          KM   SUB-BASIN B13W6B
771          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
772          BA   0.191
773          KO                                   21
774          LG    0.12    0.38    5.40    0.21     8
775          UI      28      40     101     159   201     244     316     207     167     148
776          UI     131     112      96      77    67      60      50      39      34      30
777          UI      25      22      18      14    13      14       7       5       6       5
778          UI       5       6       5       5     6       0       0       0       0       0
779          UI       0       0       0       0     0       0       0       0       0       0
780          UI       0       0       0       0     0       0       0       0       0       0
781          KM  ********************************************************************************

782          KK  C13W6B
783          KM        Combines flow from   RB13W3, RB13W1, RB13W2, B13W6B
784          HC       4
785          KM  ********************************************************************************

786          KK   DUMMY
787          KM        Combines flow from   DUMMY, B13W6B
788          HC       2
789          KM  ********************************************************************************
790          KM  *** END OF MODIFICATION
791          KM  ********************************************************************************

792          KK    B1W3BASIN
793          KM   SUB-BASIN B1W3
794          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
795          BA   0.451
796          LG    0.15    0.35    4.90    0.29     1
797          UI      42      42      61     133   180     247     281     315     360     445
```



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

798          UI     483     321     274     251   230     213     197     174     165     145
799          UI     126     109     104      96    89      78      70      55      54      48
800          UI      47      43      33      32    32      25      21      20      21      21
801          UI      20       9       8       8     8       8       8       9       8       8
802          UI       8       0       0       0     0       0       0       0       0       0
803          UI       0       0       0       0     0       0       0       0       0       0
804          UI       0       0       0       0     0       0       0       0       0       0
805          KM  ********************************************************************************

806          KK   B1W4ABASIN
807          KM   SUB-BASIN B1W4A
808          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
809          BA   0.131
810          LG    0.10    0.38    5.60    0.18    15
811          UI      25      56     125     174   229     236     153     128     109      89
812          UI      68      59      48      37    29      26      19      17      12      12
813          UI       8       5       5       4     5       5       5       0       0       0
814          UI       0       0       0       0     0       0       0       0       0       0
815          KM  ********************************************************************************

816          KK  RB1W4B   ROUTE   REACH
817          KM        Route   B1W4A   through sub-basin       B1W4B      to   CB1W4B
818          RS       2    STOR       0
819          RC   0.060   0.040   0.060    2066  0.0213    0.00
820          RX     0.0    31.3    79.9   172.0   197.0   258.1   272.3   296.2
821          RY  2610.0  2608.0  2606.0  2605.0  2606.0  2608.0  2610.0  2611.0
822          KM  ********************************************************************************

823          KK   B1W4BBASIN
824          KM   SUB-BASIN B1W4B
825          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
826          BA   0.117
827          LG    0.10    0.36    5.00    0.23    15
828          UI      21      42      98     141   181     221     139     117      99      84
829          UI      67      53      47      38    29      24      22      16      14      10
830          UI      10       8       4       4     4       4       4       4       4       0
831          UI       0       0       0       0     0       0       0       0       0       0
832          KM  ********************************************************************************

833          KK   CB1W4
834          KM        Combines flow from  RB1W4A and  B1W4B
835          HC       2
836          KM  ********************************************************************************

837          KK  RB2W4BROUTE   REACH
838          KM        Route   CB1W4   through sub-basin       B2W4B      to   CB2W4
839          RS       4    STOR       0
```

```
 840          RC   0.060   0.040   0.060    3686  0.0255    0.00
 841          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
 842          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2531.3  2538.0  2539.3
 843          KM   ******************************************************************************
1                                          HEC-1 INPUT                                                    PAGE 19

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


 844          KK   B2W4BBASIN
 845          KM   SUB-BASIN B2W4B
 846          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 847          BA   0.104
 848          LG    0.10    0.35    4.80    0.25      14
 849          UI      20      45      98     138     182     188     121     102      86      71
 850          UI      55      45      39      29      24      21      15      13       9       9
 851          UI       7       4       3       4       4       4       3       0       0       0
 852          UI       0       0       0       0       0       0       0       0       0       0
 853          UI       0       0       0       0       0       0       0       0       0       0
 854          KM   ******************************************************************************
 855          KM   *** START OF MODIFICATION - July 19, 2005
 856          KM   ******************************************************************************

 857          KK  CB2W4B
 858          KM        Combines flow from   B2W4B and RB2W4B
 859          HC       2
 860          KM   *** END OF MODIFICATION **********
 861          KM   ******************************************************************************

 862          KK   B2W4ABASIN
 863          KM   SUB-BASIN B2W4A
 864          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 865          BA   0.124
 866          LG    0.10    0.36    5.00    0.23      15
 867          UI      15      16      45      72      96     115     134     179     128      98
 868          UI      89      78      71      62      55      45      39      35      33      26
 869          UI      22      20      17      16      12      11      10       8       8       7
 870          UI       7       3       3       3       3       2       3       3       3       3
 871          UI       3       0       0       0       0       0       0       0       0       0
 872          KM   ******************************************************************************

 873          KK   CB2W4
 874          KM        Combines flow from   B2W4A and CB2W4B
 875          HC       2
 876          KM   ******************************************************************************

 877          KK  RB4W4AROUTE   REACH
 878          KM        Route   CB2W4   through sub-basin       B4W4       to   C2W4
 879          RS       5    STOR       0
 880          RC   0.060   0.040   0.060    8110  0.0234    0.00
 881          RX   580.0   605.0   616.0   631.0   635.0   660.0   701.0   762.0
 882          RY  2354.0  2352.7  2352.5  2352.3  2352.3  2352.6  2353.4  2354.0
 883          KM   ******************************************************************************

 884          KK    B4W4BASIN
 885          KM   SUB-BASIN B4W4
 886          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 887          BA   0.192
 888          LG    0.15    0.35    4.50    0.36       0
 889          UI      20      19      37      67      98     122     142     157     194     230
 890          UI     153     127     114     106      95      88      80      70      62      52
 891          UI      48      45      42      35      31      25      24      22      21      16
 892          UI      15      15      12      10      10       9      10       7       4       4
1                                          HEC-1 INPUT                                                    PAGE 20

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

 893          UI       4       3       4       4       3       4       4       4       3       4
 894          UI       0       0       0       0       0       0       0       0       0       0
 895          UI       0       0       0       0       0       0       0       0       0       0
 896          KM   ******************************************************************************

 897          KK   B1W4CBASIN
 898          KM   SUB-BASIN B1W4C
 899          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 900          BA   0.104
 901          LG    0.10    0.36    5.00    0.23      15
 902          UI      18      33      77     114     141     196     130     104      90      77
 903          UI      65      51      42      38      30      23      20      18      13      12
 904          UI       8       8       8       3       3       4       3       4       3       3
 905          UI       0       0       0       0       0       0       0       0       0       0
 906          KM   ******************************************************************************

 907          KK  RB2W4C   ROUTE   REACH
 908          KM        Route   B1W4C   through sub-basin       B2W4C      to   CB2W4C
 909          RS       4    STOR       0
 910          RC   0.060   0.040   0.060    9176  0.0253    0.00
```

```
 911          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
 912          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2537.3  2538.0  2539.3
 913          KM   ******************************************************************************

 914          KK   B2W4CBASIN
 915          KM   SUB-BASIN B2W4C
 916          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 917          BA   0.132
 918          LG    0.14    0.35    4.80    0.29       2
 919          UI      13      14      25      46      67      85      97     108     133     159
 920          UI     105      87      78      73      65      62      54      49      42      36
 921          UI      32      31      29      24      21      18      16      15      15      11
 922          UI      11      10       9       6       7       6       7       5       3       2
 923          KM   ******************************************************************************

 924          KK  CB2W4C
 925          KM        Combines flow from   RB1W4C and B2W4C
 926          KO                                      21
 927          HC       2
 928          KM   ******************************************************************************

 929          KK  RB4W4B  ROUTE   REACH
 930          KM        Route   CB2W4C  through sub-basin       B4W4       to   CB4W4
 931          RS       5    STOR       0
 932          RC   0.060   0.040   0.060    1051  0.0190    0.00
 933          RX     0.0    18.0    46.6    90.7   154.6   178.6   197.3   307.9
 934          RY  2314.8  2314.0  2312.0  2311.2  2310.7  2311.2  2312.0  2314.0
 935          KM   ******************************************************************************

 936          KK   CB4W4
 937          KM        Combines flow from   B4W4, RB4W4A and RB4W4
 938          KO                                      21
 939          HC       3
 940          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 21

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


 941          KK    B3W4BASIN
 942          KM   SUB-BASIN B3W4
 943          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 944          BA   0.094
 945          LG    0.10    0.36    5.00    0.23      14
 946          UI      18      48     102     137     197     146     108      91      75      59
 947          UI      45      41      30      23      20      14      14       9       9       5
 948          UI       4       3       4       3       4       3       0       0       0       0
 949          UI       0       0       0       0       0       0       0       0       0       0
 950          KM   ******************************************************************************

 951          KK  RB5W4AROUTE   REACH
 952          KM        Route   B3W4    through sub-basin       B5W4A      to   CB5W4A
 953          RS       6    STOR       0
 954          RC   0.060   0.040   0.060    2975  0.0208    0.00
 955          RX   948.4  1000.4  1033.9  1065.3  1116.2  1149.5  1202.0  1248.6
 956          RY  2352.4  2351.1  2351.2  2351.7  2351.0  2351.5  2351.0  2352.4
 957          KM   ******************************************************************************

 958          KK   B5W4ABASIN
 959          KM   SUB-BASIN B5W4A
 960          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 961          BA   0.084
 962          LG    0.13    0.37    5.30    0.23       5
 963          UI      15      30      70     102     130     158     100      84      71      61
 964          UI      48      38      33      28      21      17      16      11      10       7
 965          UI       7       6       3       3       3       3       2       3       3       0
 966          UI       0       0       0       0       0       0       0       0       0       0
 967          KM   ******************************************************************************

 968          KK  CB5W4A
 969          KM        Combines flow from   RB5W4A and B5W4A
 970          HC       2
 971          KM   ******************************************************************************

 972          KK  RB5W4BROUTE   REACH
 973          KM        Route   CB5W4A  through sub-basin      B5W4B       to   CB5W4B
 974          RS       5    STOR       0
 975          RC   0.060   0.040   0.060    4687  0.0243    0.00
 976          RX     0.0    42.2    79.2    92.7   286.7   394.5   502.4   538.1
 977          RY  2370.0  2368.0  2366.0  2365.5  2364.2  2365.5  2364.2  2366.5
 978          KM   ******************************************************************************

 979          KK   B5W4BBASIN
 980          KM   SUB-BASIN B5W4B
 981          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 982          BA   0.152
 983          LG    0.15    0.35    4.55    0.35       0
```

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          984          UI      19      19      55      88     118     141     165     219     157     120
          985          UI     109      96      87      76      67      56      47      44      40      32
          986          UI      27      24      20      20      14      15      12      10       9      10
          987          UI       8       3       4       4       3       4       3       4       4       3
          988          UI       4       0       0       0       0       0       0       0       0       0
          989          KM   ******************************************************************************
1                                                   HEC-1 INPUT                                          PAGE 22

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


          990          KK  CB5W4B
          991          KM        Combines flow from   RB5W4B and B5W4B
          992          KO                                      21
          993          HC       2
          994          KM   ******************************************************************************

          995          KK   DUMMY
          996          KM        Combines flow from  B1W3, CB4W4, CB5W4B
          997          HC       4
          998          ZZ
1
               SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    17        B1W1
                .
                .
    37          .        B2W1
                .           .
                .           .
    49       CB2W1............
                V
                V
    53       RB6W1
                .
                .
    60          .        B6W1
                .           .
                .           .
    71       CB6W1............
                .
                .
    75          .        B8W1
                .           .
                .           .
    87          .           .        B3W1
                .           .           .
                .           .           .
    98          .           .           .        B4W1
                .           .           .           .
                .           .           .           .
   108          .           .       CB3W1............
                .           .           V
                .           .           V
   112          .           .       RB7W1
                .           .           .
                .           .           .
   119          .           .           .        B7W1
                .           .           .           .
                .           .           .           .
   130          .           .       CB7W1............
                .           .           .
                .           .           .
   134      CB9W1A........................
                V
                V
   138      RB9W1A
                .
                .
   145          .       B10W1
                .           V
                .           V
   156          .      RB9W1B
                .           .
                .           .
   163          .           .        B9W1
                .           .           .
                .           .           .
   174       CB9W1........................
                .
                .
   178          .        B5W1
                .           .
```

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                .          .
192       CB13WA............
                V
                V
196       RB13WA
                .
                .
203             .       B13W1
                .          .
                .          .
214             .          .       B14W1
                .          .          V
                .          .          V
225             .          .      RB13WB
                .          .          .
                .          .          .
232       CB13W1........................
                .
                .
237             .       B15W1
                .          .
                .          .
249             .          .       B16W1
                .          .          .
                .          .          .
261             .          .          .       B17W1
                .          .          .          .
                .          .          .          .
273             .          .          .          .       B18W1
                .          .          .          .          .
                .          .          .          .          .
285             .          .          .          .          .        B1W2
                .          .          .          .          .          .
                .          .          .          .          .          .
297             .          .          .          .          .          .        B2W2
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
309             .          .          .          .          .       CB2W2............
                .          .          .          .          .          .
                .          .          .          .          .          .
313             .          .          .          .          .          .        B4W2
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
324        DUMMY.......................................................................
                .
                .
329             .        B3W5
                .          V
                .          V
339             .       RB6W5
                .          .
                .          .
346             .          .        B6W5
                .          .          .
                .          .          .
357             .       CB6W5............
                .          .
                .          .
362             .          .        B4W5
                .          .          V
                .          .          V
372             .          .       RB7W5
                .          .          .
                .          .          .
379             .          .          .        B7W5
                .          .          .          .
                .          .          .          .
390             .          .       CB7W5............
                .          .          .
                .          .          .
395             .      CB67W5............
                .          .
                .          .
399             .          .        B5W5
                .          .          .
                .          .          .
411             .          .          .       B5W5A
                .          .          .          .
                .          .          .          .
423             .          .          .          .        B1W5
                .          .          .          .          .
                .          .          .          .          .
435        DUMMY.............................................
                .
                .
439             .        B1W6
                .          V
```

```
                 .          V
453              .      RB2W6
                 .          .
                 .          .
460              .          .        B2W6
                 .          .           .
                 .          .           .
474              .      CB2W6............
                 .          .
                 .          .
478              .          .        B3W6
                 .          .           .
                 .          .           .
491              .      CB3W6............
                 .          V
                 .          V
495              .      RB6W6
                 .          .
                 .          .
502              .          .        B6W6
                 .          .           .
                 .          .           .
513              .      CB6W6............
                 .          V
                 .          V
517              .     RB9W6A
                 .          .
                 .          .
524              .          .        B5W6
                 .          .           .
                 .          .           .
535              .          .           .       B4W6A
                 .          .           .          .
                 .          .           .          .
547              .          .           .          .       B4W6B
                 .          .           .          .          .
                 .          .           .          .          .
559              .          .           .       CB4W6............
                 .          .           .          V
                 .          .           .          V
563              .          .           .       RB7W6
                 .          .           .          .
                 .          .           .          .
570              .          .           .          .        B7W6
                 .          .           .          .          .
                 .          .           .          .          .
581              .          .           .      CB7W6A............
                 .          .           .          .
                 .          .           .          .
585              .          .       CB7W6............
                 .          .           V
                 .          .           V
589              .          .       RB9W6
                 .          .           .
                 .          .           .
596              .          .           .        B9W6
                 .          .           .          .
                 .          .           .          .
607              .      CB9W6........................
                 .          .
                 .          .
612              .          .        B8W6
                 .          .           V
                 .          .           V
625              .          .      RB12W6
                 .          .           .
                 .          .           .
632              .          .           .       B12W6
                 .          .           .          .
                 .          .           .          .
644              .          .      CB12W6............
                 .          .           .
                 .          .           .
649              .     CB9W6A............
                 .          V
                 .          V
655              .     RB13WC
                 .          .
                 .          .
662              .          .      B13W6A
                 .          .           .
                 .          .           .
674              .     C13W6A............
                 .          V
                 .          V
679              .     RB13W3
                 .          .
```

```
688          .           .     B10W6A
             .           .         V
             .           .         V
698          .           .     RB11WA
             .           .         .
             .           .         .
705          .           .         .       B11W6
             .           .         .           .
             .           .         .           .
718          .           .         .           .     B10W6B
             .           .         .           .         V
             .           .         .           .         V
728          .           .         .           .     RB11WB
             .           .         .           .         .
             .           .         .           .         .
735          .           .     CB11W6.......................
             .           .         V
             .           .         V
742          .           .     RB13W1
             .           .         .
             .           .         .
749          .           .         .       B14W6
             .           .         .           V
             .           .         .           V
762          .           .         .      RB13W2
             .           .         .           .
             .           .         .           .
769          .           .         .           .     B13W6B
             .           .         .           .         .
             .           .         .           .         .
782          .      C13W6B...................................
             .           .
             .           .
786      DUMMY............
             .
             .
792          .        B1W3
             .           .
             .           .
806          .           .      B1W4A
             .           .         V
             .           .         V
816          .           .     RB1W4B
             .           .         .
             .           .         .
823          .           .         .       B1W4B
             .           .         .           .
             .           .         .           .
833          .           .      CB1W4............
             .           .         V
             .           .         V
837          .           .     RB2W4B
             .           .         .
             .           .         .
844          .           .         .       B2W4B
             .           .         .           .
             .           .         .           .
857          .           .     CB2W4B............
             .           .         .
             .           .         .
862          .           .         .       B2W4A
             .           .         .           .
             .           .         .           .
873          .           .      CB2W4............
             .           .         V
             .           .         V
877          .           .     RB4W4A
             .           .         .
             .           .         .
884          .           .         .        B4W4
             .           .         .           .
             .           .         .           .
897          .           .         .           .      B1W4C
             .           .         .           .         V
             .           .         .           .         V
907          .           .         .           .     RB2W4C
             .           .         .           .         .
             .           .         .           .         .
914          .           .         .           .         .      B2W4C
             .           .         .           .         .          .
             .           .         .           .         .          .
924          .           .         .           .     CB2W4C............
             .           .         .           .         V
             .           .         .           .         V
929          .           .         .           .     RB4W4B
             .           .         .           .         .
```

```
                .          .          .          .          .
  936           .          .      CB4W4.......................
                .          .          .
                .          .          .
  941           .          .          .       B3W4
                .          .          .          V
                .          .          .          V
  951           .          .          .      RB5W4A
                .          .          .          .
                .          .          .          .
  958           .          .          .          .       B5W4A
                .          .          .          .           .
                .          .          .          .           .
  968           .          .          .      CB5W4A............
                .          .          .          V
                .          .          .          V
  972           .          .          .      RB5W4B
                .          .          .          .
                .          .          .          .
  979           .          .          .          .       B5W4B
                .          .          .          .           .
                .          .          .          .           .
  990           .          .          .      CB5W4B............
                .          .          .          .
                .          .          .          .
  995       DUMMY...................................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.1                *                    *         609 SECOND STREET            *
 *                                      *                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   13JUN06  TIME  14:59:55  *                    *          (916) 756-1104              *
 *                                      *                    *                                      *
 ****************************************                    ****************************************
```

```
                    Project ID: NN_6FC - Major Basin: 01 - Return Period: 100 Years
                    RIO VERDE AREA DRAINAGE MASTER PLAN                FILE NAME: NN_6FC.DAT
                    MODEL:       100-Year, 6-Hour Future Condition Model
                    DEVELOPER:   Dibble & Associates, Inc.             DATE: Sept. 29, 2003

                    NOTES:       This model incorporates 2 new sub-basins B13W6A and B13W6B, which
                                 was not included in the original model, NN_6E.DAT created in
                                 Feb. 22, 2004. (Modification: July 16, 2005)

                                 Modification was made on creating CB2W4B (i.e., combining RB2W4B
                                 and B2W4B) before it gets combined with B2W4A. - July 19, 2005


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

     IT          HYDROGRAPH TIME DATA
                        NMIN           3  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         800  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        1557  ENDING TIME
                       ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .05 HOURS
                       TOTAL TIME BASE   39.95 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

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            **************
            *            *
 232 KK     *    CB13W1  *
            *            *
            **************

 234 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 237 KK     *     B15W1  *     BASIN
            *            *
            **************

 240 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 249 KK     *     B16W1  *     BASIN
            *            *
            **************

 253 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 261 KK     *     B17W1  *     BASIN
            *            *
            **************

 265 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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                **************
                *            *
 273 KK         *     B18W1  *     BASIN
                *            *
                **************

 277 KO             OUTPUT CONTROL VARIABLES
                          IPRNT           5  PRINT CONTROL
                          IPLOT           0  PLOT CONTROL
                          QSCAL          0.  HYDROGRAPH PLOT SCALE
                          IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                           IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT        .050  TIME INTERVAL IN HOURS


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


                **************
                *            *
 285 KK         *      B1W2  *     BASIN
                *            *
                **************

 289 KO             OUTPUT CONTROL VARIABLES
                          IPRNT           5  PRINT CONTROL
                          IPLOT           0  PLOT CONTROL
                          QSCAL          0.  HYDROGRAPH PLOT SCALE
                          IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                           IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT        .050  TIME INTERVAL IN HOURS


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


                **************
                *            *
 297 KK         *      B2W2  *     BASIN
                *            *
                **************

 301 KO             OUTPUT CONTROL VARIABLES
                          IPRNT           5  PRINT CONTROL
                          IPLOT           0  PLOT CONTROL
                          QSCAL          0.  HYDROGRAPH PLOT SCALE
                          IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                           IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT        .050  TIME INTERVAL IN HOURS


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


                **************
                *            *
 313 KK         *      B4W2  *     BASIN
                *            *
                **************

 317 KO             OUTPUT CONTROL VARIABLES
                          IPRNT           5  PRINT CONTROL
                          IPLOT           0  PLOT CONTROL
                          QSCAL          0.  HYDROGRAPH PLOT SCALE
                          IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                           IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT        .050  TIME INTERVAL IN HOURS


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

```
              **************
              *            *
 357 KK       *     CB6W5  *
              *            *
              **************

 359 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 390 KK       *     CB7W5  *
              *            *
              **************

 392 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 399 KK       *      B5W5  *     BASIN
              *            *
              **************

 403 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS

        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


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


              **************
              *            *
 411 KK       *     B5W5A  *     BASIN
              *            *
              **************

 415 KO           OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 423 KK     *     B1W5   *     BASIN
            *            *
            **************

 427 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 607 KK     *    CB9W6   *
            *            *
            **************

 609 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 644 KK     *   CB12W6   *
            *            *
            **************

 646 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 649 KK     *   CB9W6A   *
            *            *
            **************

 651 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 674 KK     *    C13W6A  *
            *            *
            **************

 676 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 735 KK     *    CB11W6  *
            *            *
            **************

 737 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 749 KK     *     B14W6  *     BASIN
            *            *
            **************

 753 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 769 KK     *    B13W6B  *     BASIN
            *            *
            **************

 773 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 924 KK     *    CB2W4C  *
            *            *
            **************

 926 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 936 KK     *     CB4W4  *
            *            *
            **************

 938 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 990 KK     *    CB5W4B  *
            *            *
            **************

 992 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                   TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
         OPERATION        STATION    FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                        6-HOUR     24-HOUR     72-HOUR

         HYDROGRAPH AT
+                          B1W1      261.    4.40         48.         12.          7.       .33

         HYDROGRAPH AT
+                          B2W1      110.    4.30         18.          5.          3.       .12

         2 COMBINED AT
+                         CB2W1      366.    4.35         67.         17.         10.       .45

         ROUTED TO
+                         RB6W1      349.    4.70         67.         17.         10.       .45
+                                                                                          2016.29       4.70
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          HYDROGRAPH AT
+                    B6W1      95.   4.20      13.       3.       2.     .11
          2 COMBINED AT
+                   CB6W1     393.   4.65      80.      20.      12.     .56
          HYDROGRAPH AT
+                    B8W1     138.   4.30      23.       6.       3.     .15
          HYDROGRAPH AT
+                    B3W1     134.   4.20      20.       5.       3.     .14
          HYDROGRAPH AT
+                    B4W1     147.   4.20      22.       6.       3.     .14
          2 COMBINED AT
+                   CB3W1     280.   4.20      42.      11.       6.     .28
          ROUTED TO
+                   RB7W1     263.   4.50      42.      11.       6.     .28
+                                                                        2020.50      4.50
          HYDROGRAPH AT
+                    B7W1     143.   4.20      20.       5.       3.     .14
          2 COMBINED AT
+                   CB7W1     374.   4.40      62.      16.       9.     .42
          3 COMBINED AT
+                  CB9W1A     852.   4.50     165.      41.      25.    1.14
          ROUTED TO
+                  RB9W1A     826.   4.75     165.      41.      25.    1.14
+                                                                        1881.70      4.75
          HYDROGRAPH AT
+                   B10W1     133.   4.15      20.       5.       3.     .12
          ROUTED TO
+                  RB9W1B     132.   4.20      20.       5.       3.     .12
+                                                                        1827.89      4.20
          HYDROGRAPH AT
+                    B9W1      90.   4.15      13.       3.       2.     .11
          3 COMBINED AT
+                   CB9W1     916.   4.75     197.      50.      30.    1.36
          HYDROGRAPH AT
+                    B5W1     271.   4.50      56.      14.       8.     .38
          2 COMBINED AT
+                  CB13WA    1160.   4.70     253.      64.      38.    1.75
          ROUTED TO
+                  RB13WA    1140.   4.95     253.      64.      38.    1.75
+                                                                        1610.45      4.95
          HYDROGRAPH AT
+                   B13W1     171.   4.30      27.       7.       4.     .21
          HYDROGRAPH AT
+                   B14W1     145.   4.20      22.       6.       3.     .14
          ROUTED TO
+                  RB13WB     145.   4.25      22.       6.       3.     .14
+                                                                        1553.56      4.25
          3 COMBINED AT
+                  CB13W1    1251.   4.90     302.      76.      46.    2.10
          HYDROGRAPH AT
+                   B15W1      32.   4.05       4.       1.       1.     .02
          HYDROGRAPH AT
+                   B16W1      20.   4.00       2.       1.       0.     .01
          HYDROGRAPH AT
+                   B17W1      13.   4.00       1.       0.       0.     .01
          HYDROGRAPH AT
+                   B18W1      59.   4.10       8.       2.       1.     .05
          HYDROGRAPH AT
+                    B1W2      82.   4.20      13.       3.       2.     .08
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          HYDROGRAPH AT
+                         B2W2      96.   4.25      15.      4.      2.     .10
          2 COMBINED AT
+                         CB2W2    177.   4.20      28.      7.      4.     .18
          HYDROGRAPH AT
+                         B4W2     105.   4.10      14.      4.      2.     .10
          7 COMBINED AT
+                         DUMMY   1339.   4.85     360.     90.     54.    2.48
          HYDROGRAPH AT
+                         B3W5      82.   4.10      10.      3.      2.     .08
          ROUTED TO
+                         RB6W5     73.   4.50      10.      3.      2.     .08
+                                                                        2217.52      4.50
          HYDROGRAPH AT
+                         B6W5      96.   4.20      13.      3.      2.     .10
          2 COMBINED AT
+                         CB6W5    147.   4.40      24.      6.      4.     .18
          HYDROGRAPH AT
+                         B4W5      71.   4.15       9.      2.      1.     .07
          ROUTED TO
+                         RB7W5     69.   4.30       9.      2.      1.     .07
+                                                                        2262.74      4.30
          HYDROGRAPH AT
+                         B7W5     125.   4.25      19.      5.      3.     .14
          2 COMBINED AT
+                         CB7W5    193.   4.30      28.      7.      4.     .21
          2 COMBINED AT
+                         CB67W5   334.   4.35      52.     13.      8.     .40
          HYDROGRAPH AT
+                         B5W5      78.   4.25      12.      3.      2.     .09
          HYDROGRAPH AT
+                         B5W5A     91.   4.25      13.      3.      2.     .10
          HYDROGRAPH AT
+                         B1W5     205.   4.25      32.      8.      5.     .21
          5 COMBINED AT
+                         DUMMY   1707.   4.35     469.    118.     71.    3.27
          HYDROGRAPH AT
+                         B1W6     592.   4.15     100.     25.     15.     .52
          ROUTED TO
+                         RB2W6    541.   4.50     100.     25.     15.     .52
+                                                                        2759.76      4.50
          HYDROGRAPH AT
+                         B2W6     783.   4.45     163.     41.     25.     .96
          2 COMBINED AT
+                         CB2W6   1322.   4.45     263.     66.     40.    1.48
          HYDROGRAPH AT
+                         B3W6     361.   4.30      71.     18.     11.     .36
          2 COMBINED AT
+                         CB3W6   1661.   4.40     334.     84.     50.    1.84
          ROUTED TO
+                         RB6W6   1636.   4.60     334.     84.     50.    1.84
+                                                                        2677.19      4.60
          HYDROGRAPH AT
+                         B6W6     253.   4.15      44.     11.      7.     .22
          2 COMBINED AT
+                         CB6W6   1776.   4.60     377.     95.     57.    2.05
          ROUTED TO
+                         RB9W6A  1750.   4.75     377.     95.     57.    2.05
+                                                                        2543.79      4.75
          HYDROGRAPH AT
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+                    B5W6      406.   4.35      89.      22.      13.      .38

     HYDROGRAPH AT
+                    B4W6A     272.   4.20      47.      12.       7.      .24

     HYDROGRAPH AT
+                    B4W6B     230.   4.15      42.      11.       6.      .19

     2 COMBINED AT
+                    CB4W6     501.   4.15      89.      22.      13.      .43

     ROUTED TO
+                    RB7W6     495.   4.35      89.      22.      13.      .43
+                                                                        2721.51      4.35

     HYDROGRAPH AT
+                    B7W6      322.   4.15      62.      16.       9.      .26

     2 COMBINED AT
+                    CB7W6A    793.   4.30     151.      38.      23.      .69

     2 COMBINED AT
+                    CB7W6    1198.   4.30     239.      60.      36.     1.08

     ROUTED TO
+                    RB9W6    1152.   4.50     238.      60.      36.     1.08
+                                                                        2490.78      4.50

     HYDROGRAPH AT
+                    B9W6      507.   4.35      97.      24.      15.      .55

     3 COMBINED AT
+                    CB9W6    3203.   4.60     711.     180.     108.     3.68

     HYDROGRAPH AT
+                    B8W6      145.   4.10      25.       6.       4.      .11

     ROUTED TO
+                    RB12W6    133.   4.45      25.       6.       4.      .11
+                                                                        2507.91      4.45

     HYDROGRAPH AT
+                    B12W6     247.   4.20      42.      10.       6.      .23

     2 COMBINED AT
+                    CB12W6    352.   4.30      66.      17.      10.      .34

     2 COMBINED AT
+                    CB9W6A   3468.   4.60     776.     196.     118.     4.02

     ROUTED TO
+                    RB13WC   3464.   4.65     776.     196.     118.     4.02
+                                                                        2421.52      4.65

     HYDROGRAPH AT
+                    B13W6A    132.   4.05      16.       4.       2.      .11

     2 COMBINED AT
+                    C13W6A   3489.   4.65     791.     200.     120.     4.13

     ROUTED TO
+                    RB13W3   3485.   4.65     791.     200.     120.     4.13
+                                                                        2392.34      4.65

     HYDROGRAPH AT
+                    B10W6A    215.   4.10      37.       9.       6.      .16

     ROUTED TO
+                    RB11WA    192.   4.55      37.       9.       6.      .16
+                                                                        2501.89      4.55

     HYDROGRAPH AT
+                    B11W6     198.   4.15      32.       8.       5.      .16

     HYDROGRAPH AT
+                    B10W6B    207.   4.10      35.       9.       5.      .16

     ROUTED TO
+                    RB11WB    191.   4.50      35.       9.       5.      .16
+                                                                        2501.90      4.50

     3 COMBINED AT
+                    CB11W6    516.   4.40     104.      26.      16.      .49

     ROUTED TO
+                    RB13W1    508.   4.55     104.      26.      16.      .49
+                                                                        2419.20      4.55
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          HYDROGRAPH AT
+                    B14W6      128.   4.10       19.       5.       3.      .11
          ROUTED TO
+                   RB13W2      120.   4.30       19.       5.       3.      .11
+                                                                        2418.46      4.30
          HYDROGRAPH AT
+                   B13W6B      194.   4.20       31.       8.       5.      .19
          4 COMBINED AT
+                   C13W6B     4171.   4.65      945.     239.     144.     4.91
          2 COMBINED AT
+                    DUMMY     5836.   4.65     1413.     356.     214.     8.19
          HYDROGRAPH AT
+                     B1W3      334.   4.40       59.      15.       9.      .45
          HYDROGRAPH AT
+                    B1W4A      154.   4.15       25.       6.       4.      .13
          ROUTED TO
+                   RB1W4B      146.   4.30       25.       6.       4.      .13
+                                                                        2605.87      4.30
          HYDROGRAPH AT
+                    B1W4B      132.   4.15       21.       5.       3.      .12
          2 COMBINED AT
+                    CB1W4      273.   4.20       45.      11.       7.      .25
          ROUTED TO
+                   RB2W4B      269.   4.30       45.      11.       7.      .25
+                                                                        2534.91      4.30
          HYDROGRAPH AT
+                    B2W4B      117.   4.15       18.       5.       3.      .10
          2 COMBINED AT
+                   CB2W4B      373.   4.25       63.      16.      10.      .35
          HYDROGRAPH AT
+                    B2W4A      122.   4.25       22.       6.       3.      .12
          2 COMBINED AT
+                    CB2W4      495.   4.25       85.      21.      13.      .48
          ROUTED TO
+                   RB4W4A      438.   4.70       85.      21.      13.      .48
+                                                                        2353.59      4.70
          HYDROGRAPH AT
+                     B4W4      137.   4.35       22.       6.       3.      .19
          HYDROGRAPH AT
+                    B1W4C      115.   4.15       19.       5.       3.      .10
          ROUTED TO
+                   RB2W4C       87.   4.75       18.       5.       3.      .10
+                                                                        2536.67      4.75
          HYDROGRAPH AT
+                    B2W4C      104.   4.35       18.       4.       3.      .13
          2 COMBINED AT
+                   CB2W4C      166.   4.60       36.       9.       5.      .24
          ROUTED TO
+                   RB4W4B      166.   4.65       36.       9.       5.      .24
+                                                                        2311.50      4.65
          3 COMBINED AT
+                    CB4W4      703.   4.65      143.      36.      22.      .90
          HYDROGRAPH AT
+                     B3W4      109.   4.10       17.       4.       3.      .09
          ROUTED TO
+                   RB5W4A       98.   4.50       17.       4.       3.      .09
+                                                                        2351.52      4.45
          HYDROGRAPH AT
+                    B5W4A       89.   4.15       13.       3.       2.      .08
          2 COMBINED AT
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```
+                    CB5W4A      165.    4.40        29.        7.        4.       .18

        ROUTED TO
+                    RB5W4B      141.    4.85        29.        7.        4.       .18
+                                                                                          2364.80       4.85

        HYDROGRAPH AT
+                     B5W4B      121.    4.25        18.        5.        3.       .15

        2 COMBINED AT
+                    CB5W4B      198.    4.60        47.       12.        7.       .33

        4 COMBINED AT
+                     DUMMY     7006.    4.65      1663.      419.      252.      9.87


*** NORMAL END OF HEC-1 ***
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D.6.1 NORTH-NORTH BASIN

(C) 100-Year, 24-Hour Event, Existing Condition Model

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1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS     *
 *              JUL   1997           *                    *    HYDROLOGIC ENGINEERING CENTER    *
 *           VERSION 4.1             *                    *          609 SECOND STREET          *
 *                                   *                    *       DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   13JUN06  TIME  07:29:57   *                    *           (916) 756-1104          *
 *                                   *                    *                                   *
 *************************************                    *************************************

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

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

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

1                                          HEC-1 INPUT                                                    PAGE  1

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

    1           ID   Project ID: NN_24EX - Major Basin: 01 - Return Period: 100 Years
    2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_24EX.DAT
    3           ID   MODEL:      100-year, 24-hour Existing Condition Model
    4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003
    5           ID
    6           ID   NOTES:      This model incorporates 2 new sub-basins B13W6A and B13W6B, which
    7           ID               was not included in the original model, NN_24E.DAT created in
    8           ID               Feb. 22, 2004. (Modification: July 16, 2005)
    9           ID
   10           ID               Modification was made on creating CB2W4B (i.e., combining RB2W4B
   11           ID                  and B2W4B) before it gets combined with B2W4A. - July 19, 2005
   12           ID
                *DIAGRAM
   13           ID
   14           IT       3                    800
   15           IO       5
   16           IN      15
                *
                *

   17           KK    B1W1BASIN
   18           KM   SUB-BASIN B1W1
   19           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   20           BA   0.332
   21           KM   RAINFALL DEPTH OF 4.65 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
   22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.9408 WAS USED
   23           PB   4.375
   24           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
   25           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
   26           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
   27           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
   28           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   29           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   30           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   31           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
   32           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
   33           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
   34           LG    0.15    0.39    5.70    0.20       0
   35           UI      30      31      39      92     126     170     198     221     245     298
   36           UI     363     257     205     185     171     157     145     134     123     110
   37           UI      97      85      76      72      68      64      51      48      38      39
   38           UI      34      33      30      24      23      23      18      15      14      15
   39           UI      15      14       8       6       5       6       6       6       6       5
   40           UI       6       0       0       0       0       0       0       0       0       0
   41           UI       0       0       0       0       0       0       0       0       0       0
   42           UI       0       0       0       0       0       0       0       0       0       0
   43           KM   ******************************************************************************

   44           KK    B2W1BASIN
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 45          KM   SUB-BASIN B2W1
 46          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 47          BA   0.119
 48          LG    0.15    0.39    6.20    0.17       0
 49          UI      14      15      38      63      87     103     118     157     138      98
 50          UI      84      76      69      62      54      47      38      35      32      29
1                                          HEC-1 INPUT                                          PAGE  2

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

 51          UI      23      19      17      16      15      11      10       9       7       7
 52          UI       7       7       3       3       3       2       3       3       3       2
 53          UI       3       3       3       0       0       0       0       0       0       0
 54          UI       0       0       0       0       0       0       0       0       0       0
 55          KM   ******************************************************************************

 56          KK   CB2W1
 57          KM        Combines flows from  B1W1 and   B2W1
 58          HC       2
 59          KM   ******************************************************************************

 60          KK   RB6W1ROUTE   REACH
 61          KM        Route   CB2W1   through sub-basin       B6W1       to   CB6W1
 62          RS       7    STOR       0
 63          RC   0.060   0.040   0.060    5153  0.0276    0.00
 64          RX   885.1   917.4   993.1  1090.0  1128.2  1186.2  1209.6  1279.8
 65          RY  2018.0  2014.8  2016.7  2015.3  2018.0  2017.4  2016.0  2018.0
 66          KM   ******************************************************************************

 67          KK    B6W1BASIN
 68          KM   SUB-BASIN B6W1
 69          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 70          BA   0.110
 71          LG    0.15    0.35    4.50    0.36       0
 72          UI      16      23      58      92     115     141     183     118      96      86
 73          UI      75      65      55      44      39      34      29      23      19      18
 74          UI      14      12      11       8       8       7       4       4       3       3
 75          UI       3       3       3       4       3       0       0       0       0       0
 76          UI       0       0       0       0       0       0       0       0       0       0
 77          KM   ******************************************************************************

 78          KK   CB6W1
 79          KM        Combines flow from   B6W1 and   RB6W1
 80          HC       2
 81          KM   ******************************************************************************

 82          KK    B8W1BASIN
 83          KM   SUB-BASIN B8W1
 84          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 85          BA   0.152
 86          LG    0.15    0.39    5.80    0.19       0
 87          UI      18      18      49      80     112     132     151     200     176     125
 88          UI     108      98      87      79      69      59      51      43      41      37
 89          UI      30      24      22      20      19      14      13      12       9       9
 90          UI      10       8       4       3       4       3       4       3       4       3
 91          UI       4       3       4       0       0       0       0       0       0       0
 92          UI       0       0       0       0       0       0       0       0       0       0
 93          KM   ******************************************************************************

 94          KK    B3W1BASIN
 95          KM   SUB-BASIN B3W1
 96          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 97          BA   0.135
 98          LG    0.15    0.40    6.00    0.18       0
 99          UI      20      29      70     113     141     173     224     146     118     104
1                                          HEC-1 INPUT                                          PAGE  3

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

100          UI      94      78      68      55      47      42      35      28      24      22
101          UI      17      16      13       9      10      10       5       4       3       4
102          UI       4       3       4       4       3       0       0       0       0       0
103          UI       0       0       0       0       0       0       0       0       0       0
104          KM   ******************************************************************************

105          KK    B4W1BASIN
106          KM   SUB-BASIN B4W1
107          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
108          BA   0.143
109          LG    0.15    0.39    6.20    0.17       0
110          UI      22      35      83     130     163     205     231     149     124     111
111          UI      95      82      65      55      49      41      33      27      24      20
112          UI      17      15      11      10      11       5       4       4       4       5
113          UI       4       4       4       0       0       0       0       0       0       0
114          KM   ******************************************************************************

115          KK   CB3W1
```

```
116          KM        Combines flow from   B3W1 and   B4W1
117          HC       2
118          KM   ******************************************************************************

119          KK   RB7W1ROUTE   REACH
120          KM        Route   CB3W1   through sub-basin       B7W1       to   CB7W1
121          RS       5    STOR       0
122          RC   0.060   0.040   0.060    5005  0.0280    0.00
123          RX   944.3   993.7  1022.8  1054.8  1127.7  1170.8  1179.2  1226.5
124          RY  2030.0  2020.1  2021.3  2021.3  2019.5  2020.1  2019.7  2030.0
125          KM   ******************************************************************************

126          KK    B7W1BASIN
127          KM   SUB-BASIN B7W1
128          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
129          BA   0.145
130          LG    0.15    0.38    5.40    0.23       0
131          UI      23      40      95     144     181     241     212     146     125     111
132          UI      93      79      61      54      48      36      31      25      22      18
133          UI      16      11      11      11       5       4       4       5       4       5
134          UI       4       5       0       0       0       0       0       0       0       0
135          UI       0       0       0       0       0       0       0       0       0       0
136          KM   ******************************************************************************

137          KK   CB7W1
138          KM        Combines flow from   B7W1 and   RB7W1
139          HC       2
140          KM   ******************************************************************************

141          KK  CB9W1A
142          KM        Combines flow from   B8W1,      CB6W1 and  CB7W1
143          HC       3
144          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE  4

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


145          KK  RB9W1A   ROUTE   REACH
146          KM        Route   CB9W1   through sub-basin       B9W1       to   CB10W1
147          RS       8    STOR       0
148          RC   0.060   0.040   0.060    5841  0.0318    0.00
149          RX   693.0   735.4   785.0   820.4   877.4   990.0  1016.0  1059.6
150          RY  1884.0  1880.4  1881.2  1880.9  1881.6  1880.8  1880.4  1884.0
151          KM   ******************************************************************************

152          KK   B10W1BASIN
153          KM   SUB-BASIN B10W1
154          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
155          BA   0.122
156          LG    0.15    0.39    5.80    0.19       0
157          UI      20      39      91     133     166     230     153     122     105      91
158          UI      75      61      49      45      35      27      23      20      16      14
159          UI      10      10       9       4       4       4       4       4       4       4
160          UI       0       0       0       0       0       0       0       0       0       0
161          UI       0       0       0       0       0       0       0       0       0       0
162          KM   ******************************************************************************

163          KK  RB9W1B   ROUTE   REACH
164          KM        Route   B10W1   through sub-basin       B9W1       to   CB10W1
165          RS       4    STOR       0
166          RC   0.060   0.040   0.060    1233  0.0292    0.00
167          RX   916.6   936.5   967.9   982.9  1009.5  1038.5  1095.3  1140.2
168          RY  1838.0  1833.0  1828.0  1827.3  1827.2  1828.0  1829.9  1830.0
169          KM   ******************************************************************************

170          KK    B9W1BASIN
171          KM   SUB-BASIN B9W1
172          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
173          BA   0.107
174          LG    0.15    0.35    3.74    0.55       0
175          UI      17      25      62      98     122     154     172     111      93      83
176          UI      72      60      50      41      37      30      25      21      17      15
177          UI      13      11       8       8       7       4       3       3       3       4
178          UI       3       3       3       0       0       0       0       0       0       0
179          UI       0       0       0       0       0       0       0       0       0       0
180          KM   ******************************************************************************

181          KK   CB9W1
182          KM        Combines flow from   B9W1,      RB9W1 and  RB10W1
183          HC       3
184          KM   ******************************************************************************

185          KK    B5W1BASIN
186          KM   SUB-BASIN B5W1
187          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
188          BA   0.385
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 189          LG    0.15    0.39    5.80    0.19       0
 190          UI      28      28      28      54      87     115     147     176     191     209
 191          UI     229     263     319     322     221     193     176     163     155     145
 192          UI     135     127     118     110     100      91      81      75      69      65
 193          UI      64      59      53      46      42      37      36      33      31      30
1                                          HEC-1 INPUT                                          PAGE  5

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

 194          UI      28      21      22      21      22      16      13      14      14      14
 195          UI      14       0       0       0       0       0       0       0       0       0
 196          UI       0       0       0       0       0       0       0       0       0       0
 197          UI       0       0       0       0       0       0       0       0       0       0
 198          KM  ******************************************************************************

 199          KK  CB13WA
 200          KM       Combines flow from   B5W1 and   CB10W1
 201          HC      2
 202          KM  ******************************************************************************

 203          KK  RB13WA   ROUTE   REACH
 204          KM       Route   C12W1   through sub-basin       B13W1      to   CB13W1
 205          RS      8    STOR       0
 206          RC  0.060   0.040   0.060    7424  0.0353    0.00
 207          RX  743.1   818.0   855.4   862.5  1137.5  1144.7  1174.0  1232.5
 208          RY 1638.0  1625.0  1612.0  1610.0  1610.0  1612.0  1625.0  1638.0
 209          KM  ******************************************************************************

 210          KK   B13W1BASIN
 211          KM   SUB-BASIN B13W1
 212          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 213          BA   0.210
 214          LG    0.15    0.35    4.80    0.30       0
 215          UI      24      25      59     102     144     170     193     248     270     174
 216          UI     151     136     121     111      98      88      72      63      58      53
 217          UI      45      39      32      29      27      23      19      18      16      12
 218          UI      11      12      12       5       5       5       4       5       5       4
 219          UI       5       5       4       5       0       0       0       0       0       0
 220          KM  ******************************************************************************

 221          KK   B14W1BASIN
 222          KM   SUB-BASIN B14W1
 223          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 224          BA   0.144
 225          LG    0.15    0.39    6.20    0.17       0
 226          UI      21      30      77     119     152     184     238     156     126     111
 227          UI      99      85      72      58      50      46      38      29      26      23
 228          UI      18      16      14      10      10      11       5       4       4       5
 229          UI       4       4       4       4       4       0       0       0       0       0
 230          UI       0       0       0       0       0       0       0       0       0       0
 231          KM  ******************************************************************************

 232          KK  RB13WB   ROUTE   REACH
 233          KM       Route   B14W1   through sub-basin       B13W1      to   CB13W1
 234          RS      2    STOR       0
 235          RC  0.060   0.040   0.060     641  0.0281    0.00
 236          RX    0.0    26.2    48.5   140.8   209.5   289.8   303.2   320.4
 237          RY 1560.0  1553.6  1554.0  1554.8  1554.0  1552.5  1554.0  1560.0
 238          KM  ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE  6

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

 239          KK  CB13W1
 240          KM       Combines flow from   B13W1,    RB14W1 and  RB13W1
 241          KO                                      21
 242          HC      3
 243          KM  ******************************************************************************

 244          KK   B15W1BASIN
 245          KM   SUB-BASIN B14W1
 246          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 247          KO                                      21
 248          BA   0.024
 249          LG    0.15    0.38    6.40    0.16       0
 250          UI      14      55      86      51      37      22      16      10       7       5
 251          UI       2       2       2       0       0       0       0       0       0       0
 252          UI       0       0       0       0       0       0       0       0       0       0
 253          UI       0       0       0       0       0       0       0       0       0       0
 254          UI       0       0       0       0       0       0       0       0       0       0
 255          KM  ******************************************************************************

 256          KK   B16W1BASIN
 257          KM   SUB-BASIN B16W1
 258          KM    PHOINIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 259          BA   0.015
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 260          KO                                      21
 261          LG    0.15    0.39    6.20    0.17       0
 262          UI      12      43      55      31      20      13       8       4       4       1
 263          UI       1       2       0       0       0       0       0       0       0       0
 264          UI       0       0       0       0       0       0       0       0       0       0
 265          UI       0       0       0       0       0       0       0       0       0       0
 266          UI       0       0       0       0       0       0       0       0       0       0
 267          KM   ******************************************************************************

 268          KK   B17W1BASIN
 269          KM   SUB-BASIN B17W1
 270          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 271          BA   0.010
 272          KO                                      21
 273          LG    0.15    0.40    6.00    0.18       0
 274          UI      11      40      32      20      11       6       4       2       1       1
 275          UI       0       0       0       0       0       0       0       0       0       0
 276          UI       0       0       0       0       0       0       0       0       0       0
 277          UI       0       0       0       0       0       0       0       0       0       0
 278          UI       0       0       0       0       0       0       0       0       0       0
 279          KM   ******************************************************************************

 280          KK   B18W1BASIN
 281          KM   SUB-BASIN B18W1
 282          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 283          BA   0.049
 284          KO                                      21
 285          LG    0.15    0.38    6.40    0.16       0
 286          UI      12      42      78     111      99      66      54      42      29      26
 287          UI      17      14      10       8       6       6       2       2       3       2
 288          UI       2       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE  7

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

 289          UI       0       0       0       0       0       0       0       0       0       0
 290          UI       0       0       0       0       0       0       0       0       0       0
 291          KM   ******************************************************************************

 292          KK    B1W2BASIN
 293          KM   SUB-BASIN B1W2
 294          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 295          BA   0.079
 296          KO                                      21
 297          LG    0.15    0.39    5.80    0.19       0
 298          UI      11      17      42      66      83     100     132      85      69      61
 299          UI      55      46      40      31      28      25      21      16      14      12
 300          UI      10       9       8       6       5       6       3       2       2       3
 301          UI       2       2       2       3       2       0       0       0       0       0
 302          UI       0       0       0       0       0       0       0       0       0       0
 303          KM   ******************************************************************************

 304          KK    B2W2BASIN
 305          KM   SUB-BASIN B2W2
 306          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 307          BA   0.101
 308          KO                                      21
 309          LG    0.15    0.39    5.70    0.20       0
 310          UI      14      15      45      69      92     106     138     141      91      79
 311          UI      70      64      55      47      38      33      31      26      22      17
 312          UI      16      15      11      10       9       6       7       7       4       3
 313          UI       3       2       3       3       3       2       3       3       0       0
 314          UI       0       0       0       0       0       0       0       0       0       0
 315          KM   ******************************************************************************

 316          KK   CB2W2
 317          KM        Combines flow from   B1W2 and   B2W2
 318          HC       2
 319          KM   ******************************************************************************

 320          KK    B4W2BASIN
 321          KM   SUB-BASIN B4W2
 322          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 323          BA   0.096
 324          KO                                      21
 325          LG    0.15    0.39    5.70    0.20       0
 326          UI      19      48     104     140     201     150     110      93      77      59
 327          UI      48      40      31      24      21      14      13       9       9       6
 328          UI       4       4       3       4       4       3       0       0       0       0
 329          UI       0       0       0       0       0       0       0       0       0       0
 330          KM   ******************************************************************************

 331          KK   DUMMY
 332          KM        Combines flow from B4W2, B1W2, B2W2,B18W1,B17W1, B16W1, B15W1 and CB13W1
 333          HC       7
 334          KM   ******************************************************************************
 335          KM   ******************************************************************************
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1                                          HEC-1 INPUT                                                    PAGE  8

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

   336          KK    B3W5BASIN
   337          KM   SUB-BASIN B3W5
   338          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   339          BA   0.080
   340          LG    0.15    0.36    5.00    0.28       0
   341          UI      16      40      87     116     168     125      91      79      63      49
   342          UI      40      34      25      20      18      12      10       8       8       5
   343          UI       3       3       3       3       3       3       0       0       0       0
   344          UI       0       0       0       0       0       0       0       0       0       0
   345          KM   ******************************************************************************

   346          KK   RB6W5ROUTE   REACH
   347          KM        Route   B3W5    through sub-basin       B6W5       to   CB6W5
   348          RS       7    STOR       0
   349          RC   0.045   0.045   0.045    4400  0.0241    0.00
   350          RX   886.0   902.2   913.2   956.8  1002.7  1045.2  1060.0  1076.7
   351          RY  2217.3  2217.0  2216.8  2217.8  2217.8  2217.2  2218.0  2218.6
   352          KM   ******************************************************************************

   353          KK    B6W5BASIN
   354          KM   SUB-BASIN B6W5
   355          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   356          BA   0.104
   357          LG    0.15    0.35    4.70    0.31       0
   358          UI      17      28      68     104     129     173     152     106      89      79
   359          UI      67      57      43      39      34      27      21      19      16      13
   360          UI      11       8       8       7       3       4       3       3       3       3
   361          UI       4       3       0       0       0       0       0       0       0       0
   362          UI       0       0       0       0       0       0       0       0       0       0
   363          KM   ******************************************************************************

   364          KK   CB6W5
   365          KM        Combines flow from   B6W5 and   RB6W5
   366          KO                                     21
   367          HC       2
   368          KM   ******************************************************************************

   369          KK    B4W5BASIN
   370          KM   SUB-BASIN B4W5
   371          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   372          BA   0.071
   373          LG    0.15    0.36    5.00    0.28       0
   374          UI      13      31      68      94     124     128      83      69      60      47
   375          UI      37      32      26      20      16      14      11       9       6       7
   376          UI       4       3       2       3       2       3       2       0       0       0
   377          UI       0       0       0       0       0       0       0       0       0       0
   378          KM   ******************************************************************************

   379          KK   RB7W5ROUTE   REACH
   380          KM        Route   B4W5    through sub-basin       B7W5       to   CB7W5
   381          RS       7    STOR       0
   382          RC   0.060   0.040   0.060    4035  0.0243    0.00
   383          RX   835.1   903.3   932.5  1081.2  1288.7  1316.1  1344.6  1382.2
   384          RY  2271.5  2268.7  2269.1  2268.6  2270.1  2260.6  2269.7  2272.0
1                                          HEC-1 INPUT                                                    PAGE  9

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

   385          KM   ******************************************************************************

   386          KK    B7W5BASIN
   387          KM   SUB-BASIN B7W5
   388          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   389          BA   0.141
   390          LG    0.15    0.36    5.10    0.26       0
   391          UI      18      18      59      89     118     138     171     208     132     111
   392          UI      99      89      79      69      59      47      43      40      33      28
   393          UI      23      20      21      13      14      12       9       9       8       7
   394          UI       4       3       4       4       3       4       3       4       3       4
   395          UI       0       0       0       0       0       0       0       0       0       0
   396          KM   ******************************************************************************

   397          KK   CB7W5
   398          KM        Combines flow from   B7W5 and   RB7W5
   399          KO                                     21
   400          HC       2
   401          KM   ******************************************************************************

   402          KK  CB67W5
   403          KM        Combines flow from   CB7W5 and  CB6W5
   404          HC       2
   405          KM   ******************************************************************************
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406          KK    B5W5BASIN
407          KM   SUB-BASIN B5W5
408          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
409          BA   0.085
410          KO                                   21
411          LG    0.15    0.37    5.30    0.24     0
412          UI      11      14      37      59    76      90     116     119      76      66
413          UI      60      54      45      40    33      28      25      22      18      15
414          UI      13      13       9       9     7       6       6       5       4       2
415          UI       3       2       2       2     2       3       2       2       0       0
416          UI       0       0       0       0     0       0       0       0       0       0
417          KM   ******************************************************************************

418          KK   B5W5ABASIN
419          KM   SUB-BASIN B5W5A
420          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
421          BA   0.103
422          KO                                   21
423          LG    0.15    0.35    4.80    0.30     0
424          UI      15      19      49      79   100     116     164     123      91      81
425          UI      71      63      54      45    37      33      31      23      19      18
426          UI      16      12      11       9     7       7       7       5       2       3
427          UI       3       3       2       3     3       2       0       0       0       0
428          UI       0       0       0       0     0       0       0       0       0       0
429          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 10

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


430          KK    B1W5BASIN
431          KM   SUB-BASIN B1W5
432          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
433          BA   0.210
434          KO                                   21
435          LG    0.15    0.39    6.20    0.17     0
436          UI      28      33      93     144   190     222     286     292     190     164
437          UI     147     131     114      98    81      69      63      56      44      37
438          UI      32      32      22      21    19      14      13      14      10       5
439          UI       6       5       5       6     5       6       5       5       0       0
440          UI       0       0       0       0     0       0       0       0       0       0
441          KM   ******************************************************************************

442          KK   DUMMY
443          KM        Combines flow from   CW5, B5W5, B5W5A, and B1W5
444          HC       5
445          KM   ******************************************************************************

446          KK    B1W6BASIN
447          KM   SUB-BASIN B1W6
448          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
449          BA   0.519
450          LG    0.15    0.40    6.00    0.18     0
451          UI      73      95     247     398   505     588     823     620     461     406
452          UI     359     318     272     226   187     170     152     119      96      86
453          UI      80      61      56      47    36      36      35      22      14      14
454          UI      14      14      14      14    14      14       0       0       0       0
455          UI       0       0       0       0     0       0       0       0       0       0
456          UI       0       0       0       0     0       0       0       0       0       0
457          UI       0       0       0       0     0       0       0       0       0       0
458          UI       0       0       0       0     0       0       0       0       0       0
459          KM   ******************************************************************************

460          KK   RB2W6ROUTE   REACH
461          KM        Route   B1W6    through sub-basin       B2W6       to   CB2W6
462          RS       4    STOR       0
463          RC   0.060   0.040   0.060    4434  0.0212    0.00
464          RX   722.4   797.6   811.9   894.0  1001.0  1183.3  1194.5  1243.0
465          RY  2768.0  2760.0  2758.0  2760.0  2760.0  2758.9  2760.0  2765.9
466          KM   ******************************************************************************

467          KK    B2W6BASIN
468          KM   SUB-BASIN B2W6
469          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
470          BA   0.957
471          LG    0.15    0.37    5.20    0.25     1
472          UI      77      76      77     189   269     353     451     506     566     610
473          UI     717     885     820     580   503     458     436     401     374     350
474          UI     319     299     271     246   210     194     184     176     163     149
475          UI     126     116      98      98    87      84      85      61      59      59
476          UI      58      44      38      37    38      37      38      35      14      15
477          UI      15       0       0       0     0       0       0       0       0       0
478          UI       0       0       0       0     0       0       0       0       0       0
479          UI       0       0       0       0     0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 11
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 480          KM   ******************************************************************************

 481          KK   CB2W6
 482          KM       Combines flows from B2W6 and RB2W6
 483          HC       2
 484          KM   ******************************************************************************

 485          KK    B3W6BASIN
 486          KM   SUB-BASIN B3W6
 487          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 488          BA   0.361
 489          LG    0.15    0.40    6.00    0.18       2
 490          UI      36      36      61     119     170     217     252     279     337     425
 491          UI     309     247     214     202     181     166     151     139     120     104
 492          UI      93      85      81      75      58      54      46      43      39      39
 493          UI      28      28      27      22      17      18      17      18      15       6
 494          UI       7       7       7       7       7       7       6       7       7       7
 495          UI       7       0       0       0       0       0       0       0       0       0
 496          UI       0       0       0       0       0       0       0       0       0       0
 497          KM   ******************************************************************************

 498          KK   CB3W6
 499          KM        Combines flow from   B2W6,      B3W6 and   RB2W6
 500          HC       2
 501          KM   ******************************************************************************

 502          KK   RB6W6ROUTE   REACH
 503          KM        Route   CB3W6   through sub-basin       B6W6       to   CB6W6
 504          RS       7    STOR       0
 505          RC   0.060   0.040   0.060    5260  0.0281    0.00
 506          RX   840.2   877.9   945.2  1019.8  1062.5  1117.4  1123.6  1159.6
 507          RY  2680.3  2676.3  2677.2  2675.5  2676.8  2674.5  2674.5  2680.0
 508          KM   ******************************************************************************

 509          KK    B6W6BASIN
 510          KM   SUB-BASIN B6W6
 511          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 512          BA   0.217
 513          LG    0.15    0.38    5.40    0.23       9
 514          UI      33      53     126     199     246     311     351     225     189     168
 515          UI     145     123     100      84      74      63      49      42      36      30
 516          UI      26      22      16      16      17       7       6       7       6       6
 517          UI       7       6       6       0       0       0       0       0       0       0
 518          UI       0       0       0       0       0       0       0       0       0       0
 519          KM   ******************************************************************************

 520          KK   CB6W6
 521          KM       Combine flow from RB6W6 and B6W6
 522          HC       2
 523          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 12

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

 524          KK  RB9W6AROUTE   REACH
 525          KM        Route   CB6W6   through sub-basin      B9W6       to   CB9W6
 526          RS       4    STOR       0
 527          RC   0.060   0.040   0.060    6768  0.0242    0.00
 528          RX    59.0   108.0   130.0   181.0   203.0   212.0   251.0   416.0
 529          RY  2548.0  2544.0  2542.0  2541.0  2542.0  2544.0  2546.0  2548.0
 530          KM   ******************************************************************************

 531          KK    B5W6BASIN
 532          KM   SUB-BASIN B5W6
 533          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 534          BA   0.383
 535          LG    0.15    0.39    6.20    0.17      21
 536          UI      37      37      59     119     165     218     255     279     329     420
 537          UI     373     264     230     213     193     180     162     150     135     117
 538          UI     100      92      85      81      73      61      52      47      44      40
 539          UI      39      28      28      28      22      19      18      18      18      17
 540          UI       7       7       7       7       7       7       7       7       7       7
 541          KM   ******************************************************************************

 542          KK   B4W6ABASIN
 543          KM   SUB-BASIN B4W6A
 544          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 545          BA   0.241
 546          LG    0.15    0.40    6.00    0.18       2
 547          UI      32      38     107     165     218     255     328     335     218     189
 548          UI     168     151     130     113      92      80      73      63      51      42
 549          UI      38      35      26      25      21      15      16      16      11       6
 550          UI       7       6       6       6       6       7       6       6       0       0
 551          UI       0       0       0       0       0       0       0       0       0       0
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552          UI      0       0       0       0       0       0       0       0       0       0
553          KM   ******************************************************************************

554          KK   B4W6BBASIN
555          KM   SUB-BASIN B4W6B
556          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
557          BA   0.189
558          LG    0.15    0.40    6.00    0.17      19
559          UI      30      52     124     188     235     314     277     191     162     145
560          UI     122     102      79      71      63      47      39      33      29      24
561          UI      20      15      15      14       6       6       5       6       6       6
562          UI       5       6       0       0       0       0       0       0       0       0
563          UI       0       0       0       0       0       0       0       0       0       0
564          UI       0       0       0       0       0       0       0       0       0       0
565          KM   ******************************************************************************

566          KK   CB4W6
567          KM        Combines flow from  B4W6A and   B4W6B
568          HC       2
569          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 13

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


570          KK   RB7W6ROUTE   REACH
571          KM        Route  CB4W6    through sub-basin       B7W6       to   CBW6
572          RS       8    STOR       0
573          RC   0.060   0.040   0.060    5674  0.0314    0.00
574          RX   967.3   969.1   973.5  1014.0  1024.7  1033.0  1047.6  1056.0
575          RY  2721.9  2721.1  2720.7  2720.1  2720.3  2720.8  2721.6  2721.9
576          KM   ******************************************************************************

577          KK    B7W6BASIN
578          KM   SUB-BASIN B7W6
579          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
580          BA   0.263
581          LG    0.15    0.39    6.20    0.16      28
582          UI      40      64     153     241     298     377     425     274     229     203
583          UI     176     149     121     101      90      76      60      50      45      36
584          UI      31      27      20      20      19       9       8       7       8       7
585          UI       8       8       7       0       0       0       0       0       0       0
586          UI       0       0       0       0       0       0       0       0       0       0
587          KM   ******************************************************************************

588          KK  CB7W6A
589          KM        Combines flow from  RB7W6 and B7W6
590          HC       2
591          KM   ******************************************************************************

592          KK   CB7W6
593          KM        Combines flow from  B5W6 and CB7W6A
594          HC       2
595          KM   ******************************************************************************

596          KK   RB9W6ROUTE   REACH
597          KM        Route   CB7W6    through sub-basin       B9W6       to   CB9W6
598          RS       4    STOR       0
599          RC   0.060   0.040   0.060    6716  0.0231    0.00
600          RX   827.5   860.5   876.8   922.6   983.1  1059.4  1096.4  1149.6
601          RY  2492.3  2491.2  2490.5  2489.3  2489.4  2490.4  2491.3  2492.0
602          KM   ******************************************************************************

603          KK    B9W6BASIN
604          KM   SUB-BASIN B9W6
605          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
606          BA   0.552
607          LG    0.15    0.35    4.80    0.30       1
608          UI      53      53      85     171     239     315     366     403     474     605
609          UI     537     383     331     305     278     261     234     216     193     169
610          UI     145     133     123     115     106      87      75      68      62      59
611          UI      56      41      40      41      32      26      26      26      27      24
612          UI      10      10      10      11      10      10      10      10      10      10
613          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 14

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


614          KK   CB9W6
615          KM        Combines flow from   B9W6, RB9W6 and   RB9W6A
616          KO                                   21
617          HC       3
618          KM   ******************************************************************************

619          KK    B8W6BASIN
620          KM   SUB-BASIN B8W6
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KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.108
LG    0.15    0.40    6.00    0.17      21
UI      23      63     134     178     243     152     123     102      82      61
UI      52      40      28      26      18      16      11      11       6       5
UI       4       4       5       4       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM   ******************************************************************************

KK  RB12W6ROUTE   REACH
KM        Route   B8W6    through sub-basin       B12W6      to   CB12W6
RS       8    STOR       0
RC   0.060   0.040   0.060    5916  0.0267    0.00
RX   913.1   932.0   945.6   957.0  1017.0  1062.2  1114.5  1158.6
RY  2510.0  2508.0  2507.8  2507.9  2507.2  2507.9  2509.0  2513.3
KM   ******************************************************************************

KK   B12W6BASIN
KM   SUB-BASIN B12W6
KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.229
LG    0.15    0.37    5.20    0.25       0
UI      31      35     102     158     206     241     313     318     207     179
UI     161     144     123     107      88      76      69      60      48      40
UI      35      34      25      23      20      15      15      15      11       6
UI       6       6       6       6       6       6       6       6       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM   ******************************************************************************

KK  CB12W6
KM        Combines flow from   B12W6, and RB12W6
KO                                      21
HC       2
KM   ******************************************************************************

KK  CB9W6A
KM        Combines flow from  CB12W6, and CB9W6
KO                                      21
HC       2
KM   *** START OF THE MODIFICATION - July 16, 2005 ***
KM   ******************************************************************************
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1 HEC-1 INPUT PAGE 15

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

KK  RB13WCROUTE   REACH
KM        Route  CB9W6A through sub-basin B13W6A
RS       4    STOR       0
RC   0.060   0.040   0.060    1544  0.0194    0.00
RX     0.0    27.5    63.0   114.3   169.1   207.9   238.5   366.4
RY  2428.0  2420.0  2419.8  2418.9  2418.8  2420.8  2419.8  2424.0
KM   ******************************************************************************

KK  B13W6ABASIN
KM   SUB-BASIN B13W6A
KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.113
LG    0.15    0.35    4.80    0.30       0
UI      36     139     239     315     188     148     109      77      60      39
UI      31      22      16      12       6       6       6       6       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM   ******************************************************************************

KK  C13W6A
KM        Combines flow from  RB13WC and B13W6A
KO                                      21
HC       2
KM   ******************************************************************************

KK  RB13W3ROUTE   REACH
KM        Route  C13W6A through sub-basin B13W6B
RS       4    STOR       0
RC   0.060   0.040   0.060    1405  0.0199    0.00
RX     0.0     4.8    13.0    19.0    53.5    97.1   262.2   343.9
RY  2394.0  2394.0  2392.0  2390.0  2388.7  2390.0  2392.0  2394.4
KM   ******************************************************************************
KM   *** END OF MODIFICATION
KM   ******************************************************************************
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KK  B10W6ABASIN
KM   SUB-BASIN B10W6A
KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.158
LG    0.15    0.39    6.20    0.16      24
UI      34      91     196     262     355     223     179     150     119      89
UI      76      58      43      37      27      23      16      16       9       6
UI       7       6       6       7       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM   ********************************************************************************

KK  RB11WAROUTE   REACH
KM        Route   B10W6A  through sub-basin       B11W6      to   CB11W6
RS       8    STOR       0
RC   0.060   0.040   0.060    3976  0.0262    0.00
RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
1                                   HEC-1 INPUT                                                    PAGE 16

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

KM   ********************************************************************************

KK   B11W6BASIN
KM   SUB-BASIN B11W6
KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.163
LG    0.15    0.39    6.20    0.17       0
UI      26      45     106     164     201     271     239     165     140     125
UI     105      88      68      61      54      41      33      30      25      20
UI      17      13      13      12       5       5       5       5       5       5
UI       5       5       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
KM   ********************************************************************************

KK  B10W6BBASIN
KM   SUB-BASIN B10W6B
KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.164
LG    0.15    0.40    6.00    0.18      12
UI      29      60     137     197     254     310     195     164     138     118
UI      94      75      65      54      40      35      30      22      20      14
UI      14      11       6       5       6       6       5       6       6       0
UI       0       0       0       0       0       0       0       0       0       0
KM   ********************************************************************************

KK  RB11WBROUTE   REACH
KM        Route   B10W6B  through sub-basin       B11W6      to   CB11W6
RS       8    STOR       0
RC   0.060   0.040   0.060    3284  0.0253    0.00
RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
KM   ********************************************************************************

KK  CB11W6
KM        Combines flow from   B11W6, RB11WA and RB11WB
KO                                      21
HC       3
KM   ********************************************************************************
KM   *** START OF MODIFICATION - July 16, 2005
KM   ********************************************************************************

KK  RB13W1ROUTE   REACH
KM        Route  CB11W6 through sub-basin B13W6B
RS       4    STOR       0
RC   0.060   0.040   0.060    4528  0.0239    0.00
RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
KM   ********************************************************************************
1                                   HEC-1 INPUT                                                    PAGE 17

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

KK   B14W6BASIN
KM   SUB-BASIN B14W6
KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
BA   0.107
KO                                      21
LG    0.15    0.36    5.00    0.28       0
UI      20      46     102     142     187     194     124     104      90      72
UI      56      48      39      30      25      21      15      14       9      10
UI       7       4       4       4       3       4       4       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
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767          UI       0       0       0       0       0       0       0       0       0       0
768          KM   ********************************************************************************

769          KK  RB13W2ROUTE   REACH
770          KM        Route  B14W6  through sub-basin B13W6B
771          RS       4    STOR       0
772          RC   0.060   0.040   0.060    3279  0.0217    0.00
773          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
774          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
775          KM   ********************************************************************************

776          KK  B13W6BBASIN
777          KM   SUB-BASIN B13W6B
778          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
779          BA   0.191
780          KO                                      21
781          LG    0.15    0.38    5.40    0.23       0
782          UI      26      29      85     132     172     201     261     265     172     150
783          UI     134     120     103      89      73      64      57      50      41      33
784          UI      30      28      20      20      17      13      12      13       8       5
785          UI       5       5       5       5       5       5       5       5       0       0
786          UI       0       0       0       0       0       0       0       0       0       0
787          UI       0       0       0       0       0       0       0       0       0       0
788          KM   ********************************************************************************

789          KK  C13W6B
790          KM        Combines flow from   RB13W3, RB13W1, RB13W2, B13W6B
791          HC       4
792          KM   ********************************************************************************

793          KK   DUMMY
794          KM        Combines flow from   DUMMY, B13W6B
795          HC       2
796          KM   ********************************************************************************
797          KM   *** END OF MODIFICATION
798          KM   ********************************************************************************

799          KK    B1W3BASIN
800          KM   SUB-BASIN B1W3
801          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
802          BA   0.451
803          LG    0.15    0.35    4.90    0.29       0
804          UI      42      42      61     133     180     247     281     315     360     445
1                                          HEC-1 INPUT                                          PAGE 18

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

805          UI     483     321     274     251     230     213     197     174     165     145
806          UI     126     109     104      96      89      78      70      55      54      48
807          UI      47      43      33      32      32      25      21      20      21      21
808          UI      20       9       8       8       8       8       8       9       8       8
809          UI       8       0       0       0       0       0       0       0       0       0
810          UI       0       0       0       0       0       0       0       0       0       0
811          UI       0       0       0       0       0       0       0       0       0       0
812          KM   ********************************************************************************

813          KK   B1W4ABASIN
814          KM   SUB-BASIN B1W4A
815          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
816          BA   0.131
817          LG    0.15    0.38    5.60    0.22       0
818          UI      22      42      97     143     178     247     164     131     113      98
819          UI      81      64      53      49      38      29      24      22      17      15
820          UI      11      10      10       4       4       5       4       4       4       5
821          UI       0       0       0       0       0       0       0       0       0       0
822          KM   ********************************************************************************

823          KK  RB1W4B   ROUTE   REACH
824          KM        Route   B1W4A   through sub-basin       B1W4B      to   CB1W4B
825          RS       2    STOR       0
826          RC   0.060   0.040   0.060    2066  0.0213    0.00
827          RX     0.0    31.3    79.9   172.0   197.0   258.1   272.3   296.2
828          RY  2610.0  2608.0  2606.0  2605.0  2606.0  2608.0  2610.0  2611.0
829          KM   ********************************************************************************

830          KK   B1W4BBASIN
831          KM   SUB-BASIN B1W4B
832          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
833          BA   0.117
834          LG    0.15    0.36    5.00    0.28       0
835          UI      19      31      77     118     145     194     171     119     100      89
836          UI      76      63      49      44      39      29      24      21      17      15
837          UI      13       9       9       9       4       3       4       4       3       4
838          UI       3       4       0       0       0       0       0       0       0       0
839          KM   ********************************************************************************

840          KK   CB1W4
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 841          KM        Combines flow from  RB1W4A and  B1W4B
 842          HC       2
 843          KM   ******************************************************************************

 844          KK  RB2W4BROUTE   REACH
 845          KM        Route   CB1W4   through sub-basin       B2W4B      to   CB2W4
 846          RS       4    STOR       0
 847          RC   0.060   0.040   0.060    3686  0.0255    0.00
 848          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
 849          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2531.3  2538.0  2539.3
 850          KM   ******************************************************************************
1                                          HEC-1 INPUT                                                    PAGE 19

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


 851          KK   B2W4BBASIN
 852          KM   SUB-BASIN B2W4B
 853          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 854          BA   0.104
 855          LG    0.15    0.35    4.80    0.30       0
 856          UI      18      33      77     114     141     196     130     104      90      77
 857          UI      65      51      42      38      30      23      20      18      13      12
 858          UI       8       8       8       3       3       4       3       4       3       3
 859          UI       0       0       0       0       0       0       0       0       0       0
 860          UI       0       0       0       0       0       0       0       0       0       0
 861          KM   ******************************************************************************
 862          KM   *** START OF MODIFICATION - July 19, 2005
 863          KM   ******************************************************************************

 864          KK  CB2W4B
 865          KM        Combines flow from   B2W4B and RB2W4B
 866          HC       2
 867          KM   *** END OF MODIFICATION **********
 868          KM   ******************************************************************************

 869          KK   B2W4ABASIN
 870          KM   SUB-BASIN B2W4A
 871          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 872          BA   0.124
 873          LG    0.15    0.36    5.00    0.28       0
 874          UI      14      14      32      55      79      94     107     130     164     111
 875          UI      89      80      73      66      60      54      45      39      35      32
 876          UI      29      24      21      18      16      15      13      11      11       8
 877          UI       7       7       7       7       3       3       2       3       3       2
 878          UI       3       3       2       3       3       2       0       0       0       0
 879          KM   ******************************************************************************

 880          KK   CB2W4
 881          KM        Combines flow from   B2W4A and CB2W4B
 882          HC       2
 883          KM   ******************************************************************************

 884          KK  RB4W4AROUTE   REACH
 885          KM        Route   CB2W4   through sub-basin       B4W4       to   C2W4
 886          RS       5    STOR       0
 887          RC   0.060   0.040   0.060    8110  0.0234    0.00
 888          RX   580.0   605.0   616.0   631.0   635.0   660.0   701.0   762.0
 889          RY  2354.0  2352.7  2352.5  2352.3  2352.3  2352.6  2353.4  2354.0
 890          KM   ******************************************************************************

 891          KK    B4W4BASIN
 892          KM   SUB-BASIN B4W4
 893          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 894          BA   0.192
 895          LG    0.15    0.35    4.50    0.36       0
 896          UI      20      19      37      67      98     122     142     157     194     230
 897          UI     153     127     114     106      95      88      80      70      62      52
 898          UI      48      45      42      35      31      25      24      22      21      16
 899          UI      15      15      12      10      10       9      10       7       4       4
1                                          HEC-1 INPUT                                                    PAGE 20

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

 900          UI       4       3       4       4       3       4       4       4       3       4
 901          UI       0       0       0       0       0       0       0       0       0       0
 902          UI       0       0       0       0       0       0       0       0       0       0
 903          KM   ******************************************************************************

 904          KK   B1W4CBASIN
 905          KM   SUB-BASIN B1W4C
 906          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 907          BA   0.104
 908          LG    0.15    0.36    5.00    0.28       0
 909          UI      15      22      55      86     110     133     172     113      90      81
 910          UI      72      60      53      42      36      33      27      21      19      17
 911          UI      13      12      10       7       7       7       4       3       3       3
```

```
912          UI       3       3       3       3       3       0       0       0       0       0
913          KM   ******************************************************************************

914          KK  RB2W4C   ROUTE   REACH
915          KM        Route   B1W4C   through sub-basin       B2W4C      to   CB2W4C
916          RS       4    STOR       0
917          RC   0.060   0.040   0.060    9176  0.0253    0.00
918          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
919          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2537.3  2538.0  2539.3
920          KM   ******************************************************************************

921          KK   B2W4CBASIN
922          KM   SUB-BASIN B2W4C
923          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
924          BA   0.132
925          LG    0.15    0.35    4.80    0.30       0
926          UI      13      13      23      43      62      80      92     102     123     155
927          UI     114      90      78      73      67      61      55      51      44      38
928          UI      33      32      29      27      22      19      17      16      14      14
929          UI      11      10      10       9       6       6       7       6       6       2
930          KM   ******************************************************************************

931          KK  CB2W4C
932          KM        Combines flow from   RB1W4C and B2W4C
933          KO                                     21
934          HC       2
935          KM   ******************************************************************************

936          KK  RB4W4B  ROUTE   REACH
937          KM        Route   CB2W4C  through sub-basin       B4W4       to   CB4W4
938          RS       5    STOR       0
939          RC   0.060   0.040   0.060    1051  0.0190    0.00
940          RX     0.0    18.0    46.6    90.7   154.6   178.6   197.3   307.9
941          RY  2314.8  2314.0  2312.0  2311.2  2310.7  2311.2  2312.0  2314.0
942          KM   ******************************************************************************

943          KK   CB4W4
944          KM        Combines flow from   B4W4, RB4W4A and RB4W4
945          KO                                     21
946          HC       3
947          KM   ******************************************************************************
```



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

948          KK    B3W4BASIN
949          KM   SUB-BASIN B3W4
950          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
951          BA   0.094
952          LG    0.15    0.36    5.00    0.28       0
953          UI      16      36      77     114     145     177     112      94      79      68
954          UI      55      42      38      30      23      20      17      13      12       8
955          UI       8       6       3       3       4       3       3       3       3       0
956          UI       0       0       0       0       0       0       0       0       0       0
957          KM   ******************************************************************************

958          KK  RB5W4AROUTE   REACH
959          KM        Route   B3W4    through sub-basin       B5W4A      to   CB5W4A
960          RS       6    STOR       0
961          RC   0.060   0.040   0.060    2975  0.0208    0.00
962          RX   948.4  1000.4  1033.9  1065.3  1116.2  1149.5  1202.0  1248.6
963          RY  2352.4  2351.1  2351.2  2351.7  2351.0  2351.5  2351.0  2352.4
964          KM   ******************************************************************************

965          KK   B5W4ABASIN
966          KM   SUB-BASIN B5W4A
967          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
968          BA   0.084
969          LG    0.15    0.37    5.30    0.24       0
970          UI      14      27      62      92     114     159     105      83      73      63
971          UI      52      41      34      31      25      17      17      14      11       9
972          UI       7       7       6       2       3       3       3       2       3       3
973          UI       0       0       0       0       0       0       0       0       0       0
974          KM   ******************************************************************************

975          KK  CB5W4A
976          KM        Combines flow from   RB5W4A and B5W4A
977          HC       2
978          KM   ******************************************************************************

979          KK  RB5W4BROUTE   REACH
980          KM        Route   CB5W4A  through sub-basin       B5W4B      to   CB5W4B
981          RS       5    STOR       0
982          RC   0.060   0.040   0.060    4687  0.0243    0.00
983          RX     0.0    42.2    79.2    92.7   286.7   394.5   502.4   538.1
984          RY  2370.0  2368.0  2366.0  2365.5  2364.2  2365.5  2364.2  2366.5
```

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          985          KM   ******************************************************************************

          986          KK   B5W4BBASIN
          987          KM   SUB-BASIN B5W4B
          988          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          989          BA   0.152
          990          LG    0.15    0.35    4.55    0.35       0
          991          UI      19      19      55      88     118     141     165     219     157     120
          992          UI     109      96      87      76      67      56      47      44      40      32
          993          UI      27      24      20      20      14      15      12      10       9      10
          994          UI       8       3       4       4       3       4       3       4       4       3
          995          UI       4       0       0       0       0       0       0       0       0       0
          996          KM   ******************************************************************************
1                                                   HEC-1 INPUT                                          PAGE 22

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


          997          KK  CB5W4B
          998          KM        Combines flow from   RB5W4B and B5W4B
          999          KO                                      21
         1000          HC       2
         1001          KM   ******************************************************************************

         1002          KK   DUMMY
         1003          KM        Combines flow from  B1W3, CB4W4, CB5W4B
         1004          HC       4
         1005          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    17        B1W1
                 .
                 .
    44           .        B2W1
                 .           .
                 .           .
    56       CB2W1............
                 V
                 V
    60       RB6W1
                 .
                 .
    67           .        B6W1
                 .           .
                 .           .
    78       CB6W1............
                 .
                 .
    82           .        B8W1
                 .           .
                 .           .
    94           .           .        B3W1
                 .           .           .
                 .           .           .
   105           .           .           .        B4W1
                 .           .           .           .
                 .           .           .           .
   115           .           .       CB3W1............
                 .           .           V
                 .           .           V
   119           .           .       RB7W1
                 .           .           .
                 .           .           .
   126           .           .           .        B7W1
                 .           .           .           .
                 .           .           .           .
   137           .           .       CB7W1............
                 .           .           .
                 .           .           .
   141       CB9W1A........................
                 V
                 V
   145       RB9W1A
                 .
                 .
   152           .       B10W1
                 .           V
                 .           V
   163           .      RB9W1B
                 .           .
                 .           .
   170           .           .        B9W1
```

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                .          .          .
                .          .          .
181        CB9W1.......................
                .
                .
185             .        B5W1
                .          .
                .          .
199       CB13WA............
                V
                V
203       RB13WA
                .
                .
210             .       B13W1
                .          .
                .          .
221             .          .       B14W1
                .          .          V
                .          .          V
232             .          .      RB13WB
                .          .          .
                .          .          .
239       CB13W1.......................
                .
                .
244             .       B15W1
                .          .
                .          .
256             .          .       B16W1
                .          .          .
                .          .          .
268             .          .          .       B17W1
                .          .          .          .
                .          .          .          .
280             .          .          .          .       B18W1
                .          .          .          .          .
                .          .          .          .          .
292             .          .          .          .          .        B1W2
                .          .          .          .          .          .
                .          .          .          .          .          .
304             .          .          .          .          .          .        B2W2
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
316             .          .          .          .          .       CB2W2............
                .          .          .          .          .          .
                .          .          .          .          .          .
320             .          .          .          .          .          .        B4W2
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
331       DUMMY.......................................................................
                .
                .
336             .        B3W5
                .          V
                .          V
346             .       RB6W5
                .          .
                .          .
353             .          .        B6W5
                .          .          .
                .          .          .
364             .       CB6W5............
                .          .
                .          .
369             .          .        B4W5
                .          .          V
                .          .          V
379             .          .       RB7W5
                .          .          .
                .          .          .
386             .          .          .        B7W5
                .          .          .          .
                .          .          .          .
397             .          .       CB7W5............
                .          .          .
                .          .          .
402             .      CB67W5............
                .          .
                .          .
406             .          .        B5W5
                .          .          .
                .          .          .
418             .          .          .       B5W5A
                .          .          .          .
                .          .          .          .
430             .          .          .          .       B1W5
```

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                .          .          .          .          .
                .          .          .          .          .
442         DUMMY..............................................
                .
                .
446             .       B1W6
                .          V
                .          V
460             .      RB2W6
                .          .
                .          .
467             .          .       B2W6
                .          .          .
                .          .          .
481             .      CB2W6............
                .          .
                .          .
485             .          .       B3W6
                .          .          .
                .          .          .
498             .      CB3W6............
                .          V
                .          V
502             .      RB6W6
                .          .
                .          .
509             .          .       B6W6
                .          .          .
                .          .          .
520             .      CB6W6............
                .          V
                .          V
524             .     RB9W6A
                .          .
                .          .
531             .          .       B5W6
                .          .          .
                .          .          .
542             .          .          .      B4W6A
                .          .          .          .
                .          .          .          .
554             .          .          .          .       B4W6B
                .          .          .          .          .
                .          .          .          .          .
566             .          .          .      CB4W6............
                .          .          .          V
                .          .          .          V
570             .          .          .      RB7W6
                .          .          .          .
                .          .          .          .
577             .          .          .          .        B7W6
                .          .          .          .          .
                .          .          .          .          .
588             .          .          .     CB7W6A............
                .          .          .          .
                .          .          .          .
592             .          .      CB7W6............
                .          .          V
                .          .          V
596             .          .      RB9W6
                .          .          .
                .          .          .
603             .          .          .       B9W6
                .          .          .          .
                .          .          .          .
614             .      CB9W6........................
                .          .
                .          .
619             .          .       B8W6
                .          .          V
                .          .          V
632             .          .     RB12W6
                .          .          .
                .          .          .
639             .          .          .      B12W6
                .          .          .          .
                .          .          .          .
651             .          .     CB12W6............
                .          .          .
                .          .          .
656             .     CB9W6A............
                .          V
                .          V
662             .     RB13WC
                .          .
                .          .
669             .          .     B13W6A
```

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                .          .          .
                .          .          .
681             .     C13W6A...........
                .          V
                .          V
686             .     RB13W3
                .          .
                .          .
695             .          .     B10W6A
                .          .          V
                .          .          V
705             .          .     RB11WA
                .          .          .
                .          .          .
712             .          .          .       B11W6
                .          .          .          .
                .          .          .          .
725             .          .          .          .      B10W6B
                .          .          .          .          V
                .          .          .          .          V
735             .          .          .          .      RB11WB
                .          .          .          .          .
                .          .          .          .          .
742             .          .     CB11W6......................
                .          .          V
                .          .          V
749             .          .     RB13W1
                .          .          .
                .          .          .
756             .          .          .       B14W6
                .          .          .          V
                .          .          .          V
769             .          .          .      RB13W2
                .          .          .          .
                .          .          .          .
776             .          .          .          .      B13W6B
                .          .          .          .          .
                .          .          .          .          .
789             .     C13W6B...................................
                .          .
                .          .
793       DUMMY............
                .
                .
799             .        B1W3
                .          .
                .          .
813             .          .      B1W4A
                .          .          V
                .          .          V
823             .          .     RB1W4B
                .          .          .
                .          .          .
830             .          .          .       B1W4B
                .          .          .          .
                .          .          .          .
840             .          .      CB1W4............
                .          .          V
                .          .          V
844             .          .     RB2W4B
                .          .          .
                .          .          .
851             .          .          .       B2W4B
                .          .          .          .
                .          .          .          .
864             .          .     CB2W4B............
                .          .          .
                .          .          .
869             .          .          .       B2W4A
                .          .          .          .
                .          .          .          .
880             .          .      CB2W4............
                .          .          V
                .          .          V
884             .          .     RB4W4A
                .          .          .
                .          .          .
891             .          .          .        B4W4
                .          .          .          .
                .          .          .          .
904             .          .          .          .       B1W4C
                .          .          .          .          V
                .          .          .          .          V
914             .          .          .          .      RB2W4C
                .          .          .          .          .
                .          .          .          .          .
921             .          .          .          .          .      B2W4C
```

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                .         .         .         .         .         .
                .         .         .         .         .         .
  931           .         .         .         .     CB2W4C............
                .         .         .         .         V
                .         .         .         .         V
  936           .         .         .         .     RB4W4B
                .         .         .         .         .
                .         .         .         .         .
  943           .         .      CB4W4........................
                .         .         .
                .         .         .
  948           .         .         .       B3W4
                .         .         .         V
                .         .         .         V
  958           .         .         .     RB5W4A
                .         .         .         .
                .         .         .         .
  965           .         .         .         .      B5W4A
                .         .         .         .         .
                .         .         .         .         .
  975           .         .         .     CB5W4A............
                .         .         .         V
                .         .         .         V
  979           .         .         .     RB5W4B
                .         .         .         .
                .         .         .         .
  986           .         .         .         .      B5W4B
                .         .         .         .         .
                .         .         .         .         .
  997           .         .         .     CB5W4B............
                .         .         .         .
                .         .         .         .
 1002        DUMMY...................................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   13JUN06  TIME  07:29:57  *                                    *          (916) 756-1104              *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

```
Project ID: NN_24EX - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_24EX.DAT
MODEL:      100-year, 24-hour Existing Condition Model
DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003

NOTES:      This model incorporates 2 new sub-basins B13W6A and B13W6B, which
            was not included in the original model, NN_24E.DAT created in
            Feb. 22, 2004. (Modification: July 16, 2005)

            Modification was made on creating CB2W4B (i.e., combining RB2W4B
               and B2W4B) before it gets combined with B2W4A. - July 19, 2005


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

     IT          HYDROGRAPH TIME DATA
                        NMIN           3  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ         800  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME        1557  ENDING TIME
                       ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .05 HOURS
                      TOTAL TIME BASE   39.95 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
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```
            TEMPERATURE          DEGREES FAHRENHEIT

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

          **************
          *            *
 239 KK   *    CB13W1  *
          *            *
          **************

 241 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS

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

          **************
          *            *
 244 KK   *     B15W1  *     BASIN
          *            *
          **************

 247 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS

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

          **************
          *            *
 256 KK   *     B16W1  *     BASIN
          *            *
          **************

 260 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS

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

          **************
          *            *
 268 KK   *     B17W1  *     BASIN
          *            *
          **************

 272 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
```

```
                    TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 280 KK     *     B18W1  *     BASIN
            *            *
            **************

 284 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 292 KK     *      B1W2  *     BASIN
            *            *
            **************

 296 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 304 KK     *      B2W2  *     BASIN
            *            *
            **************

 308 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 320 KK     *      B4W2  *     BASIN
            *            *
            **************

 324 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
```

```
                    ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 364 KK     *     CB6W5  *
            *            *
            **************

 366 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 397 KK     *     CB7W5  *
            *            *
            **************

 399 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 406 KK     *      B5W5  *     BASIN
            *            *
            **************

 410 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 418 KK     *     B5W5A  *     BASIN
            *            *
            **************

 422 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
```

```
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 430 KK     *     B1W5   *     BASIN
            *            *
            **************

 434 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 614 KK     *    CB9W6   *
            *            *
            **************

 616 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 651 KK     *   CB12W6   *
            *            *
            **************

 653 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 656 KK     *   CB9W6A   *
            *            *
            **************

 658 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
```

```
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 681 KK     *    C13W6A  *
            *            *
            **************

 683 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 742 KK     *    CB11W6  *
            *            *
            **************

 744 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 756 KK     *     B14W6  *     BASIN
            *            *
            **************

 760 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 776 KK     *    B13W6B  *     BASIN
            *            *
            **************

 780 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
```

```
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
 931 KK    *    CB2W4C  *
           *            *
           **************

 933 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
 943 KK    *     CB4W4  *
           *            *
           **************

 945 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
 997 KK    *    CB5W4B  *
           *            *
           **************

 999 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

                                 PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION       STATION  FLOW    PEAK                                            AREA      STAGE     MAX STAGE
+                                                     6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                        B1W1    358.   12.35          51.         13.          8.       .33

        HYDROGRAPH AT
+                        B2W1    159.   12.25          19.          5.          3.       .12
```

```
          2 COMBINED AT
+                        CB2W1      504.  12.30      70.      18.      11.      .45
          ROUTED TO
+                        RB6W1      458.  12.65      70.      18.      11.      .45
+                                                                          2016.41      12.65
          HYDROGRAPH AT
+                         B6W1      151.  12.15      15.       4.       2.      .11
          2 COMBINED AT
+                        CB6W1      504.  12.60      85.      21.      13.      .56
          HYDROGRAPH AT
+                         B8W1      200.  12.25      24.       6.       4.      .15
          HYDROGRAPH AT
+                         B3W1      203.  12.15      21.       5.       3.      .14
          HYDROGRAPH AT
+                         B4W1      223.  12.15      23.       6.       3.      .14
          2 COMBINED AT
+                        CB3W1      426.  12.15      44.      11.       7.      .28
          ROUTED TO
+                        RB7W1      381.  12.40      44.      11.       7.      .28
+                                                                          2020.67      12.40
          HYDROGRAPH AT
+                         B7W1      226.  12.15      22.       5.       3.      .14
          2 COMBINED AT
+                        CB7W1      510.  12.35      66.      17.      10.      .42
          3 COMBINED AT
+                       CB9W1A     1037.  12.40     176.      44.      26.     1.14
          ROUTED TO
+                       RB9W1A     1016.  12.65     176.      44.      26.     1.14
+                                                                          1881.78      12.65
          HYDROGRAPH AT
+                        B10W1      199.  12.15      19.       5.       3.      .12
          ROUTED TO
+                       RB9W1B      198.  12.20      19.       5.       3.      .12
+                                                                          1828.02      12.20
          HYDROGRAPH AT
+                         B9W1      137.  12.15      13.       3.       2.      .11
          3 COMBINED AT
+                        CB9W1     1109.  12.65     208.      52.      31.     1.36
          HYDROGRAPH AT
+                         B5W1      356.  12.45      59.      15.       9.      .38
          2 COMBINED AT
+                       CB13WA     1434.  12.60     267.      67.      40.     1.75
          ROUTED TO
+                       RB13WA     1373.  12.85     267.      67.      40.     1.75
+                                                                          1610.55      12.85
          HYDROGRAPH AT
+                        B13W1      255.  12.25      30.       8.       5.      .21
          HYDROGRAPH AT
+                        B14W1      218.  12.15      23.       6.       3.      .14
          ROUTED TO
+                       RB13WB      218.  12.20      23.       6.       3.      .14
+                                                                          1553.75      12.20
          3 COMBINED AT
+                       CB13W1     1481.  12.80     320.      80.      48.     2.10
          HYDROGRAPH AT
+                        B15W1       58.  12.05       4.       1.       1.      .02
          HYDROGRAPH AT
+                        B16W1       37.  12.00       2.       1.       0.      .01
          HYDROGRAPH AT
+                        B17W1       25.  12.00       2.       0.       0.      .01
```

```
          HYDROGRAPH AT
+                         B18W1      98.  12.10      8.      2.      1.     .05
          HYDROGRAPH AT
+                          B1W2     118.  12.15     12.      3.      2.     .08
          HYDROGRAPH AT
+                          B2W2     143.  12.20     16.      4.      2.     .10
          2 COMBINED AT
+                         CB2W2     261.  12.20     28.      7.      4.     .18
          HYDROGRAPH AT
+                          B4W2     172.  12.10     15.      4.      2.     .10
          7 COMBINED AT
+                         DUMMY    1548.  12.80    379.     95.     57.    2.48
          HYDROGRAPH AT
+                          B3W5     138.  12.10     12.      3.      2.     .08
          ROUTED TO
+                         RB6W5     110.  12.45     12.      3.      2.     .08
+                                                                        2217.62      12.45
          HYDROGRAPH AT
+                          B6W5     156.  12.15     15.      4.      2.     .10
          2 COMBINED AT
+                         CB6W5     191.  12.30     27.      7.      4.     .18
          HYDROGRAPH AT
+                          B4W5     118.  12.10     10.      3.      2.     .07
          ROUTED TO
+                         RB7W5     112.  12.25     10.      3.      2.     .07
+                                                                        2263.17      12.25
          HYDROGRAPH AT
+                          B7W5     189.  12.20     21.      5.      3.     .14
          2 COMBINED AT
+                         CB7W5     297.  12.25     31.      8.      5.     .21
          2 COMBINED AT
+                        CB67W5     487.  12.25     58.     15.      9.     .40
          HYDROGRAPH AT
+                          B5W5     118.  12.20     13.      3.      2.     .09
          HYDROGRAPH AT
+                         B5W5A     142.  12.20     15.      4.      2.     .10
          HYDROGRAPH AT
+                          B1W5     303.  12.20     34.      8.      5.     .21
          5 COMBINED AT
+                         DUMMY    2289.  12.25    499.    125.     75.    3.27
          HYDROGRAPH AT
+                          B1W6     758.  12.20     82.     21.     12.     .52
          ROUTED TO
+                         RB2W6     620.  12.50     82.     21.     12.     .52
+                                                                        2759.83      12.50
          HYDROGRAPH AT
+                          B2W6     917.  12.40    143.     36.     22.     .96
          2 COMBINED AT
+                         CB2W6    1525.  12.45    225.     57.     34.    1.48
          HYDROGRAPH AT
+                          B3W6     420.  12.30     58.     15.      9.     .36
          2 COMBINED AT
+                         CB3W6    1901.  12.40    283.     71.     43.    1.84
          ROUTED TO
+                         RB6W6    1855.  12.60    283.     71.     43.    1.84
+                                                                        2677.29      12.60
          HYDROGRAPH AT
+                          B6W6     335.  12.15     36.     10.      6.     .22
          2 COMBINED AT
+                         CB6W6    1958.  12.60    320.     81.     49.    2.05
```

```
          ROUTED TO
+                    RB9W6A    1884.  12.75     320.     81.     49.    2.05
+                                                                          2543.89     12.75

          HYDROGRAPH AT
+                     B5W6     462.  12.30      75.     21.     13.     .38

          HYDROGRAPH AT
+                    B4W6A     346.  12.20      39.     10.      6.     .24

          HYDROGRAPH AT
+                    B4W6B     315.  12.15      37.     10.      6.     .19

          2 COMBINED AT
+                     CB4W6    654.  12.15      76.     20.     12.     .43

          ROUTED TO
+                     RB7W6    636.  12.35      76.     20.     12.     .43
+                                                                          2721.68     12.35

          HYDROGRAPH AT
+                     B7W6     437.  12.15      55.     16.     10.     .26

          2 COMBINED AT
+                    CB7W6A    987.  12.30     131.     37.     22.     .69

          2 COMBINED AT
+                     CB7W6   1449.  12.30     206.     58.     35.    1.08

          ROUTED TO
+                     RB9W6   1308.  12.50     206.     58.     35.    1.08
+                                                                          2490.86     12.50

          HYDROGRAPH AT
+                     B9W6     589.  12.30      81.     20.     12.     .55

          3 COMBINED AT
+                     CB9W6   3301.  12.65     606.    159.     96.    3.68

          HYDROGRAPH AT
+                     B8W6     211.  12.10      21.      6.      4.     .11

          ROUTED TO
+                    RB12W6    171.  12.45      21.      6.      4.     .11
+                                                                          2507.97     12.45

          HYDROGRAPH AT
+                    B12W6     316.  12.20      34.      9.      5.     .23

          2 COMBINED AT
+                    CB12W6    397.  12.35      56.     15.      9.     .34

          2 COMBINED AT
+                    CB9W6A   3522.  12.65     661.    174.    105.    4.02

          ROUTED TO
+                    RB13WC   3515.  12.65     661.    174.    105.    4.02
+                                                                          2421.54     12.65

          HYDROGRAPH AT
+                    B13W6A    232.  12.05      16.      4.      2.     .11

          2 COMBINED AT
+                    C13W6A   3524.  12.65     678.    178.    107.    4.13

          ROUTED TO
+                    RB13W3   3522.  12.70     678.    178.    107.    4.13
+                                                                          2392.36     12.70

          HYDROGRAPH AT
+                    B10W6A    311.  12.10      32.      9.      6.     .16

          ROUTED TO
+                    RB11WA    256.  12.40      32.      9.      6.     .16
+                                                                          2501.97     12.40

          HYDROGRAPH AT
+                     B11W6    262.  12.15      26.      7.      4.     .16

          HYDROGRAPH AT
+                    B10W6B    282.  12.15      29.      8.      5.     .16

          ROUTED TO
+                    RB11WB    251.  12.40      29.      8.      5.     .16
+                                                                          2501.97     12.40
```

```
          3 COMBINED AT
+                    CB11W6     652.  12.40      88.      24.      14.     .49
          ROUTED TO
+                    RB13W1     596.  12.55      88.      24.      14.     .49
+                                                                        2419.32     12.55
          HYDROGRAPH AT
+                     B14W6     177.  12.10      16.       4.       2.     .11
          ROUTED TO
+                    RB13W2     156.  12.30      16.       4.       2.     .11
+                                                                        2418.57     12.30
          HYDROGRAPH AT
+                    B13W6B     265.  12.20      29.       7.       4.     .19
          4 COMBINED AT
+                    C13W6B    4192.  12.65     810.     213.     128.    4.91
          2 COMBINED AT
+                     DUMMY    5998.  12.70    1309.     338.     203.    8.19
          HYDROGRAPH AT
+                      B1W3     472.  12.35      65.      16.      10.     .45
          HYDROGRAPH AT
+                     B1W4A     210.  12.15      20.       5.       3.     .13
          ROUTED TO
+                    RB1W4B     190.  12.25      20.       5.       3.     .13
+                                                                        2605.97     12.25
          HYDROGRAPH AT
+                     B1W4B     178.  12.15      17.       4.       3.     .12
          2 COMBINED AT
+                     CB1W4     349.  12.25      37.       9.       6.     .25
          ROUTED TO
+                    RB2W4B     339.  12.30      37.       9.       6.     .25
+                                                                        2535.24     12.30
          HYDROGRAPH AT
+                     B2W4B     161.  12.15      15.       4.       2.     .10
          2 COMBINED AT
+                    CB2W4B     459.  12.25      52.      13.       8.     .35
          HYDROGRAPH AT
+                     B2W4A     148.  12.25      18.       5.       3.     .12
          2 COMBINED AT
+                     CB2W4     607.  12.25      70.      18.      11.     .48
          ROUTED TO
+                    RB4W4A     469.  12.70      70.      18.      11.     .48
+                                                                        2353.64     12.70
          HYDROGRAPH AT
+                      B4W4     205.  12.30      26.       7.       4.     .19
          HYDROGRAPH AT
+                     B1W4C     149.  12.15      15.       4.       2.     .10
          ROUTED TO
+                    RB2W4C      85.  12.75      15.       4.       2.     .10
+                                                                        2536.66     12.75
          HYDROGRAPH AT
+                     B2W4C     143.  12.30      19.       5.       3.     .13
          2 COMBINED AT
+                    CB2W4C     165.  12.45      34.       8.       5.     .24
          ROUTED TO
+                    RB4W4B     164.  12.50      34.       8.       5.     .24
+                                                                        2311.50     12.50
          3 COMBINED AT
+                     CB4W4     728.  12.65     130.      33.      20.     .90
          HYDROGRAPH AT
+                      B3W4     151.  12.15      14.       3.       2.     .09
          ROUTED TO
+                    RB5W4A     120.  12.45      14.       3.       2.     .09
```

```
+                                                                                                  2351.55        12.45

        HYDROGRAPH AT
+                          B5W4A      134.   12.15        13.        3.        2.       .08

        2 COMBINED AT
+                         CB5W4A      182.   12.40        26.        7.        4.       .18

        ROUTED TO
+                         RB5W4B      149.   12.80        26.        7.        4.       .18
+                                                                                                  2364.81        12.80

        HYDROGRAPH AT
+                          B5W4B      188.   12.20        21.        5.        3.       .15

        2 COMBINED AT
+                         CB5W4B      206.   12.35        47.       12.        7.       .33

        4 COMBINED AT
+                          DUMMY     7176.   12.65      1552.      399.      240.      9.87


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

D.6.1 NORTH-NORTH BASIN

(D) 100-Year, 24-Hour Event, Future Condition Model

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS    *
 *              JUL   1997           *                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.1             *                    *         609 SECOND STREET         *
 *                                   *                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE   13JUN06  TIME  13:52:44  *                    *          (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   Project ID: NN_24FC - Major Basin: 01 - Return Period: 100 Years
    2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_24FC.DAT
    3           ID   MODEL:       100-Year, 24-Hour Future Condition Model
    4           ID   DEVELOPER:   Dibble & Associates, Inc.                 DATE: Sept. 29, 2003
    5           ID
    6           ID   NOTES:       This model incorporates 2 new sub-basins B13W6A and B13W6B, which
    7           ID                was not included in the original model, NN_24F.DAT created in
    8           ID                Feb. 22, 2004. (Modification: July 16, 2005)
    9           ID
   10           ID                Modification was made on creating CB2W4B (i.e., combining RB2W4B
   11           ID                and B2W4B) before it gets combined with B2W4A. - July 19, 2005
   12           ID
                *DIAGRAM
   13           ID
   14           IT       3                    800
   15           IO       5
   16           IN      15
                *
                *

   17           KK    B1W1BASIN
   18           KM   SUB-BASIN B1W1
   19           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
   20           BA   0.332
   21           KM   RAINFALL DEPTH OF 4.65 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
   22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.9408 WAS USED
   23           PB   4.375
   24           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
   25           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
   26           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
   27           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
   28           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   29           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   30           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   31           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
   32           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
   33           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
   34           LG    0.15    0.39    5.70    0.20       0
   35           UI      30      31      39      92     126     170     198     221     245     298
   36           UI     363     257     205     185     171     157     145     134     123     110
   37           UI      97      85      76      72      68      64      51      48      38      39
   38           UI      34      33      30      24      23      23      18      15      14      15
   39           UI      15      14       8       6       5       6       6       6       6       5
   40           UI       6       0       0       0       0       0       0       0       0       0
   41           UI       0       0       0       0       0       0       0       0       0       0
   42           UI       0       0       0       0       0       0       0       0       0       0
```

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          43          KM   ******************************************************************************

          44          KK    B2W1BASIN
          45          KM   SUB-BASIN B2W1
          46          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          47          BA   0.119
          48          LG    0.15     0.39     6.20     0.17        0
          49          UI      14       15       38       63       87      103      118      157      138       98
          50          UI      84       76       69       62       54       47       38       35       32       29
1                                                HEC-1 INPUT                                                      PAGE  2

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

          51          UI      23       19       17       16       15       11       10        9        7        7
          52          UI       7        7        3        3        3        2        3        3        3        2
          53          UI       3        3        3        0        0        0        0        0        0        0
          54          UI       0        0        0        0        0        0        0        0        0        0
          55          KM   ******************************************************************************

          56          KK   CB2W1
          57          KM        Combines flows from  B1W1 and   B2W1
          58          HC       2
          59          KM   ******************************************************************************

          60          KK   RB6W1ROUTE   REACH
          61          KM        Route   CB2W1   through sub-basin       B6W1       to   CB6W1
          62          RS       7    STOR       0
          63          RC   0.060   0.040   0.060    5153  0.0276    0.00
          64          RX   885.1   917.4   993.1  1090.0  1128.2  1186.2  1209.6  1279.8
          65          RY  2018.0  2014.8  2016.7  2015.3  2018.0  2017.4  2016.0  2018.0
          66          KM   ******************************************************************************

          67          KK    B6W1BASIN
          68          KM   SUB-BASIN B6W1
          69          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          70          BA   0.110
          71          LG    0.15     0.35     4.50     0.35        1
          72          UI      16       23       58       92      115      141      183      118       96       86
          73          UI      75       65       55       44       39       34       29       23       19       18
          74          UI      14       12       11        8        8        7        4        4        3        3
          75          UI       3        3        3        4        3        0        0        0        0        0
          76          UI       0        0        0        0        0        0        0        0        0        0
          77          KM   ******************************************************************************

          78          KK   CB6W1
          79          KM        Combines flow from   B6W1 and   RB6W1
          80          HC       2
          81          KM   ******************************************************************************

          82          KK    B8W1BASIN
          83          KM   SUB-BASIN B8W1
          84          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          85          BA   0.152
          86          LG    0.15     0.39     5.80     0.19        0
          87          UI      18       18       49       80      112      132      151      200      176      125
          88          UI     108       98       87       79       69       59       51       43       41       37
          89          UI      30       24       22       20       19       14       13       12        9        9
          90          UI      10        8        4        3        4        3        4        3        4        3
          91          UI       4        3        4        0        0        0        0        0        0        0
          92          UI       0        0        0        0        0        0        0        0        0        0
          93          KM   ******************************************************************************

          94          KK    B3W1BASIN
          95          KM   SUB-BASIN B3W1
          96          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          97          BA   0.135
          98          LG    0.15     0.40     6.00     0.18        0
          99          UI      20       29       70      113      141      173      224      146      118      104
1                                                HEC-1 INPUT                                                      PAGE  3

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

         100          UI      94       78       68       55       47       42       35       28       24       22
         101          UI      17       16       13        9       10       10        5        4        3        4
         102          UI       4        3        4        4        3        0        0        0        0        0
         103          UI       0        0        0        0        0        0        0        0        0        0
         104          KM   ******************************************************************************

         105          KK    B4W1BASIN
         106          KM   SUB-BASIN B4W1
         107          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
         108          BA   0.143
         109          LG    0.15     0.39     6.20     0.17        0
         110          UI      22       35       83      130      163      205      231      149      124      111
         111          UI      95       82       65       55       49       41       33       27       24       20
         112          UI      17       15       11       10       11        5        4        4        4        5
         113          UI       4        4        4        0        0        0        0        0        0        0
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114          KM   ******************************************************************************

115          KK   CB3W1
116          KM        Combines flow from   B3W1 and   B4W1
117          HC       2
118          KM   ******************************************************************************

119          KK   RB7W1ROUTE   REACH
120          KM        Route   CB3W1   through sub-basin       B7W1       to   CB7W1
121          RS       5    STOR       0
122          RC   0.060   0.040   0.060    5005  0.0280    0.00
123          RX   944.3   993.7  1022.8  1054.8  1127.7  1170.8  1179.2  1226.5
124          RY  2030.0  2020.1  2021.3  2021.3  2019.5  2020.1  2019.7  2030.0
125          KM   ******************************************************************************

126          KK    B7W1BASIN
127          KM   SUB-BASIN B7W1
128          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
129          BA   0.145
130          LG    0.15    0.38    5.40    0.23       0
131          UI      23      40      95     144     181     241     212     146     125     111
132          UI      93      79      61      54      48      36      31      25      22      18
133          UI      16      11      11      11       5       4       4       5       4       5
134          UI       4       5       0       0       0       0       0       0       0       0
135          UI       0       0       0       0       0       0       0       0       0       0
136          KM   ******************************************************************************

137          KK   CB7W1
138          KM        Combines flow from   B7W1 and   RB7W1
139          HC       2
140          KM   ******************************************************************************

141          KK  CB9W1A
142          KM        Combines flow from   B8W1,      CB6W1 and  CB7W1
143          HC       3
144          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE  4

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


145          KK  RB9W1A   ROUTE   REACH
146          KM        Route   CB9W1   through sub-basin       B9W1       to   CB10W1
147          RS       8    STOR       0
148          RC   0.060   0.040   0.060    5841  0.0318    0.00
149          RX   693.0   735.4   785.0   820.4   877.4   990.0  1016.0  1059.6
150          RY  1884.0  1880.4  1881.2  1880.9  1881.6  1880.8  1880.4  1884.0
151          KM   ******************************************************************************

152          KK   B10W1BASIN
153          KM   SUB-BASIN B10W1
154          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
155          BA   0.122
156          LG    0.13    0.39    5.80    0.18       6
157          UI      20      39      91     133     166     230     153     122     105      91
158          UI      75      61      49      45      35      27      23      20      16      14
159          UI      10      10       9       4       4       4       4       4       4       4
160          UI       0       0       0       0       0       0       0       0       0       0
161          UI       0       0       0       0       0       0       0       0       0       0
162          KM   ******************************************************************************

163          KK  RB9W1B   ROUTE   REACH
164          KM        Route   B10W1   through sub-basin       B9W1       to   CB10W1
165          RS       4    STOR       0
166          RC   0.060   0.040   0.060    1233  0.0292    0.00
167          RX   916.6   936.5   967.9   982.9  1009.5  1038.5  1095.3  1140.2
168          RY  1838.0  1833.0  1828.0  1827.3  1827.2  1828.0  1829.9  1830.0
169          KM   ******************************************************************************

170          KK    B9W1BASIN
171          KM   SUB-BASIN B9W1
172          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
173          BA   0.107
174          LG    0.12    0.35    3.74    0.50       9
175          UI      17      29      70     108     132     178     157     108      92      82
176          UI      69      58      44      41      35      27      22      19      16      13
177          UI      12       8       8       8       4       3       3       4       3       3
178          UI       4       3       0       0       0       0       0       0       0       0
179          UI       0       0       0       0       0       0       0       0       0       0
180          KM   ******************************************************************************

181          KK   CB9W1
182          KM        Combines flow from   B9W1,      RB9W1 and  RB10W1
183          HC       3
184          KM   ******************************************************************************

185          KK    B5W1BASIN
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 186          KM   SUB-BASIN B5W1
 187          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 188          BA   0.385
 189          LG    0.15    0.39    5.80    0.19       0
 190          UI      28      28      28      54      87     115     147     176     191     209
 191          UI     229     263     319     322     221     193     176     163     155     145
 192          UI     135     127     118     110     100      91      81      75      69      65
 193          UI      64      59      53      46      42      37      36      33      31      30
1                                          HEC-1 INPUT                                          PAGE  5

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

 194          UI      28      21      22      21      22      16      13      14      14      14
 195          UI      14       0       0       0       0       0       0       0       0       0
 196          UI       0       0       0       0       0       0       0       0       0       0
 197          UI       0       0       0       0       0       0       0       0       0       0
 198          KM   ******************************************************************************

 199          KK  CB13WA
 200          KM        Combines flow from   B5W1 and   CB10W1
 201          HC       2
 202          KM   ******************************************************************************

 203          KK  RB13WA   ROUTE   REACH
 204          KM        Route   C12W1   through sub-basin       B13W1      to   CB13W1
 205          RS       8    STOR       0
 206          RC   0.060   0.040   0.060    7424  0.0353    0.00
 207          RX   743.1   818.0   855.4   862.5  1137.5  1144.7  1174.0  1232.5
 208          RY  1638.0  1625.0  1612.0  1610.0  1610.0  1612.0  1625.0  1638.0
 209          KM   ******************************************************************************

 210          KK   B13W1BASIN
 211          KM   SUB-BASIN B13W1
 212          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 213          BA   0.210
 214          LG    0.15    0.35    4.80    0.30       0
 215          UI      24      25      59     102     144     170     193     248     270     174
 216          UI     151     136     121     111      98      88      72      63      58      53
 217          UI      45      39      32      29      27      23      19      18      16      12
 218          UI      11      12      12       5       5       5       4       5       5       4
 219          UI       5       5       4       5       0       0       0       0       0       0
 220          KM   ******************************************************************************

 221          KK   B14W1BASIN
 222          KM   SUB-BASIN B14W1
 223          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 224          BA   0.144
 225          LG    0.15    0.39    6.20    0.17       0
 226          UI      21      30      77     119     152     184     238     156     126     111
 227          UI      99      85      72      58      50      46      38      29      26      23
 228          UI      18      16      14      10      10      11       5       4       4       5
 229          UI       4       4       4       4       4       0       0       0       0       0
 230          UI       0       0       0       0       0       0       0       0       0       0
 231          KM   ******************************************************************************

 232          KK  RB13WB   ROUTE   REACH
 233          KM        Route   B14W1   through sub-basin       B13W1      to   CB13W1
 234          RS       2    STOR       0
 235          RC   0.060   0.040   0.060     641  0.0281    0.00
 236          RX     0.0    26.2    48.5   140.8   209.5   289.8   303.2   320.4
 237          RY  1560.0  1553.6  1554.0  1554.8  1554.0  1552.5  1554.0  1560.0
 238          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE  6

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

 239          KK  CB13W1
 240          KM        Combines flow from   B13W1,    RB14W1 and  RB13W1
 241          KO                                      21
 242          HC       3
 243          KM   ******************************************************************************

 244          KK   B15W1BASIN
 245          KM   SUB-BASIN B14W1
 246          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 247          KO                                      21
 248          BA   0.024
 249          LG    0.15    0.38    6.40    0.16       0
 250          UI      14      55      86      51      37      22      16      10       7       5
 251          UI       2       2       2       0       0       0       0       0       0       0
 252          UI       0       0       0       0       0       0       0       0       0       0
 253          UI       0       0       0       0       0       0       0       0       0       0
 254          UI       0       0       0       0       0       0       0       0       0       0
 255          KM   ******************************************************************************

 256          KK   B16W1BASIN
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```
 257          KM   SUB-BASIN B16W1
 258          KM    PHOINIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 259          BA   0.015
 260          KO                                   21
 261          LG    0.15    0.39    6.20    0.17    0
 262          UI      12      43      55      31    20      13       8       4       4       1
 263          UI       1       2       0       0     0       0       0       0       0       0
 264          UI       0       0       0       0     0       0       0       0       0       0
 265          UI       0       0       0       0     0       0       0       0       0       0
 266          UI       0       0       0       0     0       0       0       0       0       0
 267          KM   ******************************************************************************

 268          KK   B17W1BASIN
 269          KM   SUB-BASIN B17W1
 270          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 271          BA   0.010
 272          KO                                   21
 273          LG    0.15    0.40    6.00    0.18    0
 274          UI      11      40      32      20    11       6       4       2       1       1
 275          UI       0       0       0       0     0       0       0       0       0       0
 276          UI       0       0       0       0     0       0       0       0       0       0
 277          UI       0       0       0       0     0       0       0       0       0       0
 278          UI       0       0       0       0     0       0       0       0       0       0
 279          KM   ******************************************************************************

 280          KK   B18W1BASIN
 281          KM   SUB-BASIN B18W1
 282          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 283          BA   0.049
 284          KO                                   21
 285          LG    0.15    0.38    6.40    0.16    0
 286          UI      12      42      78     111    99      66      54      42      29      26
 287          UI      17      14      10       8     6       6       2       2       3       2
 288          UI       2       0       0       0     0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE  7

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

 289          UI       0       0       0       0     0       0       0       0       0       0
 290          UI       0       0       0       0     0       0       0       0       0       0
 291          KM   ******************************************************************************

 292          KK    B1W2BASIN
 293          KM   SUB-BASIN B1W2
 294          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 295          BA   0.079
 296          KO                                   21
 297          LG    0.14    0.39    5.80    0.18    4
 298          UI      12      19      46      73    89     114     127      82      69      61
 299          UI      53      44      37      30    28      22      18      15      13      11
 300          UI      10       8       6       6     6       2       3       2       2       3
 301          UI       2       3       2       0     0       0       0       0       0       0
 302          UI       0       0       0       0     0       0       0       0       0       0
 303          KM   ******************************************************************************

 304          KK    B2W2BASIN
 305          KM   SUB-BASIN B2W2
 306          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 307          BA   0.101
 308          KO                                   21
 309          LG    0.15    0.39    5.70    0.20    1
 310          UI      14      15      45      69    92     106     138     141      91      79
 311          UI      70      64      55      47    38      33      31      26      22      17
 312          UI      16      15      11      10     9       6       7       7       4       3
 313          UI       3       2       3       3     3       2       3       3       0       0
 314          UI       0       0       0       0     0       0       0       0       0       0
 315          KM   ******************************************************************************

 316          KK   CB2W2
 317          KM        Combines flow from   B1W2 and   B2W2
 318          HC       2
 319          KM   ******************************************************************************

 320          KK    B4W2BASIN
 321          KM   SUB-BASIN B4W2
 322          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 323          BA   0.096
 324          KO                                   21
 325          LG    0.15    0.39    5.70    0.20    1
 326          UI      19      48     104     140   201     150     110      93      77      59
 327          UI      48      40      31      24    21      14      13       9       9       6
 328          UI       4       4       3       4     4       3       0       0       0       0
 329          UI       0       0       0       0     0       0       0       0       0       0
 330          KM   ******************************************************************************

 331          KK   DUMMY
 332          KM        Combines flow from B4W2, B1W2, B2W2,B18W1,B17W1, B16W1, B15W1 and CB13W1
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 333          HC       7
 334          KM   ******************************************************************************
 335          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE  8

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


 336          KK    B3W5BASIN
 337          KM   SUB-BASIN B3W5
 338          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 339          BA   0.080
 340          LG    0.15    0.36    5.00    0.28       0
 341          UI      16      40      87     116     168     125      91      79      63      49
 342          UI      40      34      25      20      18      12      10       8       8       5
 343          UI       3       3       3       3       3       3       0       0       0       0
 344          UI       0       0       0       0       0       0       0       0       0       0
 345          KM   ******************************************************************************

 346          KK   RB6W5ROUTE   REACH
 347          KM        Route   B3W5    through sub-basin       B6W5       to   CB6W5
 348          RS       7    STOR       0
 349          RC   0.045   0.045   0.045    4400  0.0241    0.00
 350          RX   886.0   902.2   913.2   956.8  1002.7  1045.2  1060.0  1076.7
 351          RY  2217.3  2217.0  2216.8  2217.8  2217.8  2217.2  2218.0  2218.6
 352          KM   ******************************************************************************

 353          KK    B6W5BASIN
 354          KM   SUB-BASIN B6W5
 355          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 356          BA   0.104
 357          LG    0.15    0.35    4.70    0.31       0
 358          UI      17      28      68     104     129     173     152     106      89      79
 359          UI      67      57      43      39      34      27      21      19      16      13
 360          UI      11       8       8       7       3       4       3       3       3       3
 361          UI       4       3       0       0       0       0       0       0       0       0
 362          UI       0       0       0       0       0       0       0       0       0       0
 363          KM   ******************************************************************************

 364          KK   CB6W5
 365          KM        Combines flow from   B6W5 and   RB6W5
 366          KO                                     21
 367          HC       2
 368          KM   ******************************************************************************

 369          KK    B4W5BASIN
 370          KM   SUB-BASIN B4W5
 371          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 372          BA   0.071
 373          LG    0.15    0.36    5.00    0.28       0
 374          UI      13      31      68      94     124     128      83      69      60      47
 375          UI      37      32      26      20      16      14      11       9       6       7
 376          UI       4       3       2       3       2       3       2       0       0       0
 377          UI       0       0       0       0       0       0       0       0       0       0
 378          KM   ******************************************************************************

 379          KK   RB7W5ROUTE   REACH
 380          KM        Route   B4W5    through sub-basin       B7W5       to   CB7W5
 381          RS       7    STOR       0
 382          RC   0.060   0.040   0.060    4035  0.0243    0.00
 383          RX   835.1   903.3   932.5  1081.2  1288.7  1316.1  1344.6  1382.2
 384          RY  2271.5  2268.7  2269.1  2268.6  2270.1  2260.6  2269.7  2272.0
1                                          HEC-1 INPUT                                          PAGE  9

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

 385          KM   ******************************************************************************

 386          KK    B7W5BASIN
 387          KM   SUB-BASIN B7W5
 388          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 389          BA   0.141
 390          LG    0.15    0.36    5.10    0.26       0
 391          UI      18      18      59      89     118     138     171     208     132     111
 392          UI      99      89      79      69      59      47      43      40      33      28
 393          UI      23      20      21      13      14      12       9       9       8       7
 394          UI       4       3       4       4       3       4       3       4       3       4
 395          UI       0       0       0       0       0       0       0       0       0       0
 396          KM   ******************************************************************************

 397          KK   CB7W5
 398          KM        Combines flow from   B7W5 and   RB7W5
 399          KO                                     21
 400          HC       2
 401          KM   ******************************************************************************

 402          KK  CB67W5
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403          KM        Combines flow from   CB7W5 and  CB6W5
404          HC       2
405          KM   ***********************************************************************

406          KK    B5W5BASIN
407          KM   SUB-BASIN B5W5
408          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
409          BA   0.085
410          KO                                      21
411          LG    0.15    0.37    5.30    0.24       0
412          UI      11      14      37      59      76      90     116     119      76      66
413          UI      60      54      45      40      33      28      25      22      18      15
414          UI      13      13       9       9       7       6       6       5       4       2
415          UI       3       2       2       2       2       3       2       2       0       0
416          UI       0       0       0       0       0       0       0       0       0       0
417          KM   ***********************************************************************

418          KK   B5W5ABASIN
419          KM   SUB-BASIN B5W5A
420          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
421          BA   0.103
422          KO                                      21
423          LG    0.15    0.35    4.80    0.30       0
424          UI      15      19      49      79     100     116     164     123      91      81
425          UI      71      63      54      45      37      33      31      23      19      18
426          UI      16      12      11       9       7       7       7       5       2       3
427          UI       3       3       2       3       3       2       0       0       0       0
428          UI       0       0       0       0       0       0       0       0       0       0
429          KM   ***********************************************************************
1                                        HEC-1 INPUT                                          PAGE 10

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

430          KK    B1W5BASIN
431          KM   SUB-BASIN B1W5
432          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
433          BA   0.210
434          KO                                      21
435          LG    0.15    0.39    6.20    0.17       0
436          UI      28      33      93     144     190     222     286     292     190     164
437          UI     147     131     114      98      81      69      63      56      44      37
438          UI      32      32      22      21      19      14      13      14      10       5
439          UI       6       5       5       6       5       6       5       5       0       0
440          UI       0       0       0       0       0       0       0       0       0       0
441          KM   ***********************************************************************

442          KK   DUMMY
443          KM        Combines flow from   CW5, B5W5, B5W5A, and B1W5
444          HC       5
445          KM   ***********************************************************************

446          KK    B1W6BASIN
447          KM   SUB-BASIN B1W6
448          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
449          BA   0.519
450          LG    0.10    0.40    6.00    0.15      15
451          UI      83     142     340     519     643     863     759     526     446     396
452          UI     336     280     217     196     171     131     106      92      79      64
453          UI      56      41      41      39      16      16      16      16      16      16
454          UI      16      16       0       0       0       0       0       0       0       0
455          UI       0       0       0       0       0       0       0       0       0       0
456          UI       0       0       0       0       0       0       0       0       0       0
457          UI       0       0       0       0       0       0       0       0       0       0
458          UI       0       0       0       0       0       0       0       0       0       0
459          KM   ***********************************************************************

460          KK   RB2W6ROUTE   REACH
461          KM        Route   B1W6    through sub-basin       B2W6       to   CB2W6
462          RS       4    STOR       0
463          RC   0.060   0.040   0.060    4434  0.0212    0.00
464          RX   722.4   797.6   811.9   894.0  1001.0  1183.3  1194.5  1243.0
465          RY  2768.0  2760.0  2758.0  2760.0  2760.0  2758.9  2760.0  2765.9
466          KM   ***********************************************************************

467          KK    B2W6BASIN
468          KM   SUB-BASIN B2W6
469          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
470          BA   0.957
471          LG    0.11    0.37    5.20    0.22      12
472          UI      82      83      82     238     325     435     518     584     631     744
473          UI     910     913     631     535     491     465     427     390     367     333
474          UI     304     270     238     212     197     190     177     157     135     117
475          UI     106     101      91      90      76      64      63      63      49      40
476          UI      41      40      41      40      28      15      16      16      16      16
477          UI      16       0       0       0       0       0       0       0       0       0
478          UI       0       0       0       0       0       0       0       0       0       0
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 479        UI      0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 11

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

 480        KM   ******************************************************************************

 481        KK   CB2W6
 482        KM       Combines flows from B2W6 and RB2W6
 483        HC       2
 484        KM   ******************************************************************************

 485        KK    B3W6BASIN
 486        KM   SUB-BASIN B3W6
 487        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 488        BA   0.361
 489        LG    0.10    0.40    6.00    0.15      17
 490        UI      40      41      93     162     228     275     312     377     480     322
 491        UI     259     234     212     193     174     155     132     115     100      94
 492        UI      85      70      61      52      48      44      38      31      31      25
 493        UI      20      19      20      20      10       8       8       7       8       8
 494        UI       8       7       8       8       8       7       0       0       0       0
 495        UI       0       0       0       0       0       0       0       0       0       0
 496        UI       0       0       0       0       0       0       0       0       0       0
 497        KM   ******************************************************************************

 498        KK   CB3W6
 499        KM        Combines flow from   B2W6,      B3W6 and   RB2W6
 500        HC       2
 501        KM   ******************************************************************************

 502        KK   RB6W6ROUTE   REACH
 503        KM        Route   CB3W6   through sub-basin       B6W6       to   CB6W6
 504        RS       7    STOR       0
 505        RC   0.060   0.040   0.060    5260  0.0281    0.00
 506        RX   840.2   877.9   945.2  1019.8  1062.5  1117.4  1123.6  1159.6
 507        RY  2680.3  2676.3  2677.2  2675.5  2676.8  2674.5  2674.5  2680.0
 508        KM   ******************************************************************************

 509        KK    B6W6BASIN
 510        KM   SUB-BASIN B6W6
 511        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 512        BA   0.217
 513        LG    0.10    0.38    5.40    0.19      24
 514        UI      36      70     161     237     294     410     271     217     187     163
 515        UI     134     107      88      79      63      48      42      36      28      24
 516        UI      18      18      15       7       7       7       7       7       7       7
 517        UI       0       0       0       0       0       0       0       0       0       0
 518        UI       0       0       0       0       0       0       0       0       0       0
 519        KM   ******************************************************************************

 520        KK   CB6W6
 521        KM       Combine flow from RB6W6 and B6W6
 522        HC       2
 523        KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 12

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

 524        KK  RB9W6AROUTE   REACH
 525        KM        Route   CB6W6   through sub-basin      B9W6       to   CB9W6
 526        RS       4    STOR       0
 527        RC   0.060   0.040   0.060    6768  0.0242    0.00
 528        RX    59.0   108.0   130.0   181.0   203.0   212.0   251.0   416.0
 529        RY  2548.0  2544.0  2542.0  2541.0  2542.0  2544.0  2546.0  2548.0
 530        KM   ******************************************************************************

 531        KK    B5W6BASIN
 532        KM   SUB-BASIN B5W6
 533        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 534        BA   0.383
 535        LG    0.10    0.39    6.20    0.14      35
 536        UI      42      41      91     157     226     275     308     368     487     378
 537        UI     280     249     228     207     187     169     149     128     107     100
 538        UI      93      87      68      58      53      48      46      37      31      32
 539        UI      26      20      20      21      20      12       8       8       8       8
 540        UI       8       8       8       8       8       8       8       0       0       0
 541        KM   ******************************************************************************

 542        KK   B4W6ABASIN
 543        KM   SUB-BASIN B4W6A
 544        KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 545        BA   0.241
 546        LG    0.10    0.40    6.00    0.15      17
 547        UI      37      58     140     221     274     346     389     250     210     186
 548        UI     161     137     111      93      82      69      55      47      40      34
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549          UI      28      24      19      18      18       7       8       7       7       7
550          UI       7       7       7       0       0       0       0       0       0       0
551          UI       0       0       0       0       0       0       0       0       0       0
552          UI       0       0       0       0       0       0       0       0       0       0
553          KM   ******************************************************************************

554          KK   B4W6BBASIN
555          KM   SUB-BASIN B4W6B
556          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
557          BA   0.189
558          LG    0.11    0.40    6.00    0.15      31
559          UI      32      60     141     206     256     357     236     190     163     141
560          UI     117      93      76      70      54      41      37      31      25      21
561          UI      16      16      13       6       6       6       6       6       6       6
562          UI       0       0       0       0       0       0       0       0       0       0
563          UI       0       0       0       0       0       0       0       0       0       0
564          UI       0       0       0       0       0       0       0       0       0       0
565          KM   ******************************************************************************

566          KK   CB4W6
567          KM        Combines flow from  B4W6A and   B4W6B
568          HC       2
569          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 13

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


570          KK   RB7W6ROUTE   REACH
571          KM        Route  CB4W6    through sub-basin       B7W6       to   CBW6
572          RS       8    STOR       0
573          RC   0.060   0.040   0.060    5674  0.0314    0.00
574          RX   967.3   969.1   973.5  1014.0  1024.7  1033.0  1047.6  1056.0
575          RY  2721.9  2721.1  2720.7  2720.1  2720.3  2720.8  2721.6  2721.9
576          KM   ******************************************************************************

577          KK    B7W6BASIN
578          KM   SUB-BASIN B7W6
579          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
580          BA   0.263
581          LG    0.12    0.39    6.20    0.14      37
582          UI      42      72     172     263     326     438     384     267     225     201
583          UI     171     142     109      99      87      67      54      46      40      33
584          UI      28      21      21      19       8       8       8       8       8       8
585          UI       8       8       0       0       0       0       0       0       0       0
586          UI       0       0       0       0       0       0       0       0       0       0
587          KM   ******************************************************************************

588          KK  CB7W6A
589          KM        Combines flow from  RB7W6 and B7W6
590          HC       2
591          KM   ******************************************************************************

592          KK   CB7W6
593          KM        Combines flow from  B5W6 and CB7W6A
594          HC       2
595          KM   ******************************************************************************

596          KK   RB9W6ROUTE   REACH
597          KM        Route   CB7W6    through sub-basin       B9W6       to   CB9W6
598          RS       4    STOR       0
599          RC   0.060   0.040   0.060    6716  0.0231    0.00
600          RX   827.5   860.5   876.8   922.6   983.1  1059.4  1096.4  1149.6
601          RY  2492.3  2491.2  2490.5  2489.3  2489.4  2490.4  2491.3  2492.0
602          KM   ******************************************************************************

603          KK    B9W6BASIN
604          KM   SUB-BASIN B9W6
605          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
606          BA   0.552
607          LG    0.10    0.35    4.80    0.25      15
608          UI      60      59     131     227     325     396     445     530     703     544
609          UI     405     357     328     301     268     244     214     185     155     144
610          UI     134     125      97      84      76      69      66      53      46      46
611          UI      37      30      29      30      29      18      11      11      12      11
612          UI      12      11      12      11      12      11      12       0       0       0
613          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 14

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


614          KK   CB9W6
615          KM        Combines flow from   B9W6, RB9W6 and   RB9W6A
616          KO                                     21
617          HC       3
618          KM   ******************************************************************************
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619          KK    B8W6BASIN
620          KM   SUB-BASIN B8W6
621          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
622          BA   0.108
623          LG    0.11    0.40    6.00    0.15      34
624          UI      24      76     151     206     240     147     123      97      74      58
625          UI      47      33      27      21      17      12      12       5       5       5
626          UI       4       5       5       0       0       0       0       0       0       0
627          UI       0       0       0       0       0       0       0       0       0       0
628          UI       0       0       0       0       0       0       0       0       0       0
629          UI       0       0       0       0       0       0       0       0       0       0
630          UI       0       0       0       0       0       0       0       0       0       0
631          KM  ******************************************************************************

632          KK  RB12W6ROUTE   REACH
633          KM        Route   B8W6    through sub-basin       B12W6      to   CB12W6
634          RS       8    STOR       0
635          RC   0.060   0.040   0.060    5916  0.0267    0.00
636          RX   913.1   932.0   945.6   957.0  1017.0  1062.2  1114.5  1158.6
637          RY  2510.0  2508.0  2507.8  2507.9  2507.2  2507.9  2509.0  2513.3
638          KM  ******************************************************************************

639          KK   B12W6BASIN
640          KM   SUB-BASIN B12W6
641          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
642          BA   0.229
643          LG    0.10    0.37    5.20    0.21      15
644          UI      35      55     133     211     259     329     370     238     198     179
645          UI     152     129     106      89      78      66      52      44      38      32
646          UI      27      23      17      17      18       7       7       7       7       7
647          UI       6       7       7       0       0       0       0       0       0       0
648          UI       0       0       0       0       0       0       0       0       0       0
649          UI       0       0       0       0       0       0       0       0       0       0
650          KM  ******************************************************************************

651          KK  CB12W6
652          KM        Combines flow from   B12W6, and RB12W6
653          KO                                   21
654          HC       2
655          KM  ******************************************************************************

656          KK  CB9W6A
657          KM        Combines flow from  CB12W6, and CB9W6
658          KO                                   21
659          HC       2
660          KM  *** START OF THE MODIFICATION - July 16, 2005 ***
661          KM  ******************************************************************************
1                                        HEC-1 INPUT                                          PAGE 15

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

662          KK  RB13WCROUTE   REACH
663          KM        Route  CB9W6A through sub-basin B13W6A
664          RS       4    STOR       0
665          RC   0.060   0.040   0.060    1544  0.0194    0.00
666          RX     0.0    27.5    63.0   114.3   169.1   207.9   238.5   366.4
667          RY  2428.0  2420.0  2419.8  2418.9  2418.8  2420.8  2419.8  2424.0
668          KM  ******************************************************************************

669          KK  B13W6ABASIN
670          KM   SUB-BASIN B13W6A
671          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
672          BA   0.113
673          LG    0.14    0.35    4.80    0.29       3
674          UI      36     139     239     315     188     148     109      77      60      39
675          UI      31      22      16      12       6       6       6       6       0       0
676          UI       0       0       0       0       0       0       0       0       0       0
677          UI       0       0       0       0       0       0       0       0       0       0
678          UI       0       0       0       0       0       0       0       0       0       0
679          UI       0       0       0       0       0       0       0       0       0       0
680          KM  ******************************************************************************

681          KK  C13W6A
682          KM        Combines flow from  RB13WC and B13W6A
683          KO                                   21
684          HC       2
685          KM  ******************************************************************************

686          KK  RB13W3ROUTE   REACH
687          KM        Route  C13W6A through sub-basin B13W6B
688          RS       4    STOR       0
689          RC   0.060   0.040   0.060    1405  0.0199    0.00
690          RX     0.0     4.8    13.0    19.0    53.5    97.1   262.2   343.9
691          RY  2394.0  2394.0  2392.0  2390.0  2388.7  2390.0  2392.0  2394.4
692          KM  ******************************************************************************
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 693          KM   *** END OF MODIFICATION
 694          KM   ******************************************************************************

 695          KK  B10W6ABASIN
 696          KM   SUB-BASIN B10W6A
 697          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 698          BA   0.158
 699          LG    0.11    0.39    6.20    0.14      37
 700          UI      35     111     221     302     351     216     178     143     108      84
 701          UI      69      49      40      30      25      17      17       8       7       7
 702          UI       7       6       7       0       0       0       0       0       0       0
 703          UI       0       0       0       0       0       0       0       0       0       0
 704          KM   ******************************************************************************

 705          KK  RB11WAROUTE   REACH
 706          KM        Route   B10W6A  through sub-basin       B11W6      to   CB11W6
 707          RS       8    STOR       0
 708          RC   0.060   0.040   0.060    3976  0.0262    0.00
 709          RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
 710          RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
1                                          HEC-1 INPUT                                          PAGE 16

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

 711          KM   ******************************************************************************

 712          KK   B11W6BASIN
 713          KM   SUB-BASIN B11W6
 714          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 715          BA   0.163
 716          LG    0.10    0.39    6.20    0.14      15
 717          UI      30      70     156     216     285     295     189     159     137     110
 718          UI      86      72      60      45      37      33      24      20      15      15
 719          UI      11       6       5       6       6       6       6       0       0       0
 720          UI       0       0       0       0       0       0       0       0       0       0
 721          UI       0       0       0       0       0       0       0       0       0       0
 722          UI       0       0       0       0       0       0       0       0       0       0
 723          UI       0       0       0       0       0       0       0       0       0       0
 724          KM   ******************************************************************************

 725          KK  B10W6BBASIN
 726          KM   SUB-BASIN B10W6B
 727          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 728          BA   0.164
 729          LG    0.10    0.40    6.00    0.15      26
 730          UI      32      83     177     240     343     255     189     160     130     101
 731          UI      81      71      51      40      36      25      22      16      16      10
 732          UI       6       7       6       6       7       6       0       0       0       0
 733          UI       0       0       0       0       0       0       0       0       0       0
 734          KM   ******************************************************************************

 735          KK  RB11WBROUTE   REACH
 736          KM        Route   B10W6B  through sub-basin       B11W6      to   CB11W6
 737          RS       8    STOR       0
 738          RC   0.060   0.040   0.060    3284  0.0253    0.00
 739          RX   891.2   920.4   948.4  1002.2  1029.3  1123.9  1170.0  1233.0
 740          RY  2504.0  2501.3  2501.6  2501.2  2501.9  2501.8  2501.2  2504.0
 741          KM   ******************************************************************************

 742          KK  CB11W6
 743          KM        Combines flow from   B11W6, RB11WA and RB11WB
 744          KO                                     21
 745          HC       3
 746          KM   ******************************************************************************
 747          KM   *** START OF MODIFICATION - July 16, 2005
 748          KM   ******************************************************************************

 749          KK  RB13W1ROUTE   REACH
 750          KM        Route  CB11W6 through sub-basin B13W6B
 751          RS       4    STOR       0
 752          RC   0.060   0.040   0.060    4528  0.0239    0.00
 753          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
 754          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
 755          KM   ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE 17

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

 756          KK   B14W6BASIN
 757          KM   SUB-BASIN B14W6
 758          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 759          BA   0.107
 760          KO                                     21
 761          LG    0.10    0.36    5.00    0.23      15
 762          UI      23      62     133     177     240     151     121     102      81      60
 763          UI      51      40      29      25      18      16      11      10       6       5
```

```
764          UI       4       4       5       4       0       0       0       0       0       0
765          UI       0       0       0       0       0       0       0       0       0       0
766          UI       0       0       0       0       0       0       0       0       0       0
767          UI       0       0       0       0       0       0       0       0       0       0
768          KM   ******************************************************************************

769          KK  RB13W2ROUTE   REACH
770          KM        Route  B14W6  through sub-basin B13W6B
771          RS       4    STOR       0
772          RC   0.060   0.040   0.060    3279  0.0217    0.00
773          RX     0.0     9.9    24.6    33.3    44.4    76.8    84.2   147.6
774          RY  2422.4  2422.0  2420.0  2417.9  2418.4  2417.2  2418.0  2420.2
775          KM   ******************************************************************************

776          KK  B13W6BBASIN
777          KM   SUB-BASIN B13W6B
778          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
779          BA   0.191
780          KO                                      21
781          LG    0.12    0.38    5.40    0.21       8
782          UI      28      40     101     159     201     244     316     207     167     148
783          UI     131     112      96      77      67      60      50      39      34      30
784          UI      25      22      18      14      13      14       7       5       6       5
785          UI       5       6       5       5       6       0       0       0       0       0
786          UI       0       0       0       0       0       0       0       0       0       0
787          UI       0       0       0       0       0       0       0       0       0       0
788          KM   ******************************************************************************

789          KK  C13W6B
790          KM        Combines flow from   RB13W3, RB13W1, RB13W2, B13W6B
791          HC       4
792          KM   ******************************************************************************

793          KK   DUMMY
794          KM        Combines flow from   DUMMY, B13W6B
795          HC       2
796          KM   ******************************************************************************
797          KM   *** END OF MODIFICATION
798          KM   ******************************************************************************

799          KK    B1W3BASIN
800          KM   SUB-BASIN B1W3
801          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
802          BA   0.451
803          LG    0.15    0.35    4.90    0.29       1
804          UI      42      42      61     133     180     247     281     315     360     445
1                                          HEC-1 INPUT                                          PAGE 18

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

805          UI     483     321     274     251     230     213     197     174     165     145
806          UI     126     109     104      96      89      78      70      55      54      48
807          UI      47      43      33      32      32      25      21      20      21      21
808          UI      20       9       8       8       8       8       8       9       8       8
809          UI       8       0       0       0       0       0       0       0       0       0
810          UI       0       0       0       0       0       0       0       0       0       0
811          UI       0       0       0       0       0       0       0       0       0       0
812          KM   ******************************************************************************

813          KK   B1W4ABASIN
814          KM   SUB-BASIN B1W4A
815          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
816          BA   0.131
817          LG    0.10    0.38    5.60    0.18      15
818          UI      25      56     125     174     229     236     153     128     109      89
819          UI      68      59      48      37      29      26      19      17      12      12
820          UI       8       5       5       4       5       5       5       0       0       0
821          UI       0       0       0       0       0       0       0       0       0       0
822          KM   ******************************************************************************

823          KK  RB1W4B   ROUTE   REACH
824          KM        Route   B1W4A   through sub-basin       B1W4B      to   CB1W4B
825          RS       2    STOR       0
826          RC   0.060   0.040   0.060    2066  0.0213    0.00
827          RX     0.0    31.3    79.9   172.0   197.0   258.1   272.3   296.2
828          RY  2610.0  2608.0  2606.0  2605.0  2606.0  2608.0  2610.0  2611.0
829          KM   ******************************************************************************

830          KK   B1W4BBASIN
831          KM   SUB-BASIN B1W4B
832          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
833          BA   0.117
834          LG    0.10    0.36    5.00    0.23      15
835          UI      21      42      98     141     181     221     139     117      99      84
836          UI      67      53      47      38      29      24      22      16      14      10
837          UI      10       8       4       4       4       4       4       4       4       0
838          UI       0       0       0       0       0       0       0       0       0       0
```

```
 839          KM   ******************************************************************************

 840          KK   CB1W4
 841          KM        Combines flow from  RB1W4A and  B1W4B
 842          HC       2
 843          KM   ******************************************************************************

 844          KK  RB2W4BROUTE   REACH
 845          KM        Route   CB1W4   through sub-basin       B2W4B      to   CB2W4
 846          RS       4    STOR       0
 847          RC   0.060   0.040   0.060    3686  0.0255    0.00
 848          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
 849          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2531.3  2538.0  2539.3
 850          KM   ******************************************************************************
1                                          HEC-1 INPUT                                                    PAGE 19

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


 851          KK   B2W4BBASIN
 852          KM   SUB-BASIN B2W4B
 853          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 854          BA   0.104
 855          LG    0.10    0.35    4.80    0.25      14
 856          UI      20      45      98     138     182     188     121     102      86      71
 857          UI      55      45      39      29      24      21      15      13       9       9
 858          UI       7       4       3       4       4       4       3       0       0       0
 859          UI       0       0       0       0       0       0       0       0       0       0
 860          UI       0       0       0       0       0       0       0       0       0       0
 861          KM   ******************************************************************************
 862          KM   *** START OF MODIFICATION - July 19, 2005
 863          KM   ******************************************************************************

 864          KK  CB2W4B
 865          KM        Combines flow from   B2W4B and RB2W4B
 866          HC       2
 867          KM   *** END OF MODIFICATION **********
 868          KM   ******************************************************************************

 869          KK   B2W4ABASIN
 870          KM   SUB-BASIN B2W4A
 871          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 872          BA   0.124
 873          LG    0.10    0.36    5.00    0.23      15
 874          UI      15      16      45      72      96     115     134     179     128      98
 875          UI      89      78      71      62      55      45      39      35      33      26
 876          UI      22      20      17      16      12      11      10       8       8       7
 877          UI       7       3       3       3       3       2       3       3       3       3
 878          UI       3       0       0       0       0       0       0       0       0       0
 879          KM   ******************************************************************************

 880          KK   CB2W4
 881          KM        Combines flow from   B2W4A and CB2W4B
 882          HC       2
 883          KM   ******************************************************************************

 884          KK  RB4W4AROUTE   REACH
 885          KM        Route   CB2W4   through sub-basin       B4W4       to   C2W4
 886          RS       5    STOR       0
 887          RC   0.060   0.040   0.060    8110  0.0234    0.00
 888          RX   580.0   605.0   616.0   631.0   635.0   660.0   701.0   762.0
 889          RY  2354.0  2352.7  2352.5  2352.3  2352.3  2352.6  2353.4  2354.0
 890          KM   ******************************************************************************

 891          KK    B4W4BASIN
 892          KM   SUB-BASIN B4W4
 893          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 894          BA   0.192
 895          LG    0.15    0.35    4.50    0.36       0
 896          UI      20      19      37      67      98     122     142     157     194     230
 897          UI     153     127     114     106      95      88      80      70      62      52
 898          UI      48      45      42      35      31      25      24      22      21      16
 899          UI      15      15      12      10      10       9      10       7       4       4
1                                          HEC-1 INPUT                                                    PAGE 20

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

 900          UI       4       3       4       4       3       4       4       4       3       4
 901          UI       0       0       0       0       0       0       0       0       0       0
 902          UI       0       0       0       0       0       0       0       0       0       0
 903          KM   ******************************************************************************

 904          KK   B1W4CBASIN
 905          KM   SUB-BASIN B1W4C
 906          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 907          BA   0.104
 908          LG    0.10    0.36    5.00    0.23      15
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909          UI      18      33      77     114     141     196     130     104      90      77
910          UI      65      51      42      38      30      23      20      18      13      12
911          UI       8       8       8       3       3       4       3       4       3       3
912          UI       0       0       0       0       0       0       0       0       0       0
913          KM   ******************************************************************************

914          KK  RB2W4C   ROUTE   REACH
915          KM        Route   B1W4C   through sub-basin       B2W4C      to   CB2W4C
916          RS       4    STOR       0
917          RC   0.060   0.040   0.060    9176  0.0253    0.00
918          RX   912.5   945.0   954.6   970.0  1016.9  1034.3  1045.8  1081.6
919          RY  2539.4  2538.0  2537.2  2536.4  2536.0  2537.3  2538.0  2539.3
920          KM   ******************************************************************************

921          KK   B2W4CBASIN
922          KM   SUB-BASIN B2W4C
923          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
924          BA   0.132
925          LG    0.14    0.35    4.80    0.29       2
926          UI      13      14      25      46      67      85      97     108     133     159
927          UI     105      87      78      73      65      62      54      49      42      36
928          UI      32      31      29      24      21      18      16      15      15      11
929          UI      11      10       9       6       7       6       7       5       3       2
930          KM   ******************************************************************************

931          KK  CB2W4C
932          KM        Combines flow from   RB1W4C and B2W4C
933          KO                                      21
934          HC       2
935          KM   ******************************************************************************

936          KK  RB4W4B  ROUTE   REACH
937          KM        Route   CB2W4C  through sub-basin       B4W4       to   CB4W4
938          RS       5    STOR       0
939          RC   0.060   0.040   0.060    1051  0.0190    0.00
940          RX     0.0    18.0    46.6    90.7   154.6   178.6   197.3   307.9
941          RY  2314.8  2314.0  2312.0  2311.2  2310.7  2311.2  2312.0  2314.0
942          KM   ******************************************************************************

943          KK   CB4W4
944          KM        Combines flow from   B4W4, RB4W4A and RB4W4
945          KO                                      21
946          HC       3
947          KM   ******************************************************************************
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

948          KK    B3W4BASIN
949          KM   SUB-BASIN B3W4
950          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
951          BA   0.094
952          LG    0.10    0.36    5.00    0.23      14
953          UI      18      48     102     137     197     146     108      91      75      59
954          UI      45      41      30      23      20      14      14       9       9       5
955          UI       4       3       4       3       4       3       0       0       0       0
956          UI       0       0       0       0       0       0       0       0       0       0
957          KM   ******************************************************************************

958          KK  RB5W4AROUTE   REACH
959          KM        Route   B3W4    through sub-basin       B5W4A      to   CB5W4A
960          RS       6    STOR       0
961          RC   0.060   0.040   0.060    2975  0.0208    0.00
962          RX   948.4  1000.4  1033.9  1065.3  1116.2  1149.5  1202.0  1248.6
963          RY  2352.4  2351.1  2351.2  2351.7  2351.0  2351.5  2351.0  2352.4
964          KM   ******************************************************************************

965          KK   B5W4ABASIN
966          KM   SUB-BASIN B5W4A
967          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
968          BA   0.084
969          LG    0.13    0.37    5.30    0.23       5
970          UI      15      30      70     102     130     158     100      84      71      61
971          UI      48      38      33      28      21      17      16      11      10       7
972          UI       7       6       3       3       3       3       2       3       3       0
973          UI       0       0       0       0       0       0       0       0       0       0
974          KM   ******************************************************************************

975          KK  CB5W4A
976          KM        Combines flow from   RB5W4A and B5W4A
977          HC       2
978          KM   ******************************************************************************

979          KK  RB5W4BROUTE   REACH
980          KM        Route   CB5W4A  through sub-basin       B5W4B      to   CB5W4B
981          RS       5    STOR       0
```

```
 982          RC   0.060   0.040   0.060    4687  0.0243    0.00
 983          RX     0.0    42.2    79.2    92.7   286.7   394.5   502.4   538.1
 984          RY  2370.0  2368.0  2366.0  2365.5  2364.2  2365.5  2364.2  2366.5
 985          KM   ******************************************************************************

 986          KK   B5W4BBASIN
 987          KM   SUB-BASIN B5W4B
 988          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 989          BA   0.152
 990          LG    0.15    0.35    4.55    0.35       0
 991          UI      19      19      55      88     118     141     165     219     157     120
 992          UI     109      96      87      76      67      56      47      44      40      32
 993          UI      27      24      20      20      14      15      12      10       9      10
 994          UI       8       3       4       4       3       4       3       4       4       3
 995          UI       4       0       0       0       0       0       0       0       0       0
 996          KM   ******************************************************************************
1                                                HEC-1 INPUT                                          PAGE 22

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


 997          KK  CB5W4B
 998          KM        Combines flow from   RB5W4B and B5W4B
 999          KO                                     21
1000          HC       2
1001          KM   ******************************************************************************

1002          KK   DUMMY
1003          KM        Combines flow from  B1W3, CB4W4, CB5W4B
1004          HC       4
1005          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    17       B1W1
             .
             .
    44       .        B2W1
             .           .
             .           .
    56     CB2W1............
             V
             V
    60     RB6W1
             .
             .
    67       .        B6W1
             .           .
             .           .
    78     CB6W1............
             .
             .
    82       .        B8W1
             .           .
             .           .
    94       .           .        B3W1
             .           .           .
             .           .           .
   105       .           .           .        B4W1
             .           .           .           .
             .           .           .           .
   115       .           .       CB3W1............
             .           .           V
             .           .           V
   119       .           .       RB7W1
             .           .           .
             .           .           .
   126       .           .           .        B7W1
             .           .           .           .
             .           .           .           .
   137       .           .       CB7W1............
             .           .           .
             .           .           .
   141     CB9W1A........................
             V
             V
   145     RB9W1A
             .
             .
   152       .       B10W1
             .           V
             .           V
   163       .      RB9W1B
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                .          .
                .          .
170             .          .        B9W1
                .          .          .
                .          .          .
181        CB9W1.......................
                .
                .
185             .       B5W1
                .          .
                .          .
199        CB13WA............
                V
                V
203        RB13WA
                .
                .
210             .      B13W1
                .          .
                .          .
221             .          .      B14W1
                .          .          V
                .          .          V
232             .          .     RB13WB
                .          .          .
                .          .          .
239        CB13W1......................
                .
                .
244             .      B15W1
                .          .
                .          .
256             .          .      B16W1
                .          .          .
                .          .          .
268             .          .          .      B17W1
                .          .          .        .
                .          .          .        .
280             .          .          .        .      B18W1
                .          .          .        .        .
                .          .          .        .        .
292             .          .          .        .        .       B1W2
                .          .          .        .        .         .
                .          .          .        .        .         .
304             .          .          .        .        .         .       B2W2
                .          .          .        .        .         .         .
                .          .          .        .        .         .         .
316             .          .          .        .        .      CB2W2............
                .          .          .        .        .         .
                .          .          .        .        .         .
320             .          .          .        .        .         .       B4W2
                .          .          .        .        .         .         .
                .          .          .        .        .         .         .
331        DUMMY.......................................................................
                .
                .
336             .       B3W5
                .          V
                .          V
346             .      RB6W5
                .          .
                .          .
353             .          .       B6W5
                .          .          .
                .          .          .
364             .      CB6W5............
                .          .
                .          .
369             .          .       B4W5
                .          .          V
                .          .          V
379             .          .      RB7W5
                .          .          .
                .          .          .
386             .          .          .       B7W5
                .          .          .         .
                .          .          .         .
397             .          .      CB7W5............
                .          .          .
                .          .          .
402             .     CB67W5............
                .          .
                .          .
406             .          .       B5W5
                .          .          .
                .          .          .
418             .          .          .      B5W5A
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                .          .          .          .
                .          .          .          .
430             .          .          .          .        B1W5
                .          .          .          .          .
                .          .          .          .          .
442         DUMMY.............................................
                .
                .
446             .       B1W6
                .          V
                .          V
460             .      RB2W6
                .          .
                .          .
467             .          .       B2W6
                .          .          .
                .          .          .
481             .      CB2W6............
                .          .
                .          .
485             .          .       B3W6
                .          .          .
                .          .          .
498             .      CB3W6............
                .          V
                .          V
502             .      RB6W6
                .          .
                .          .
509             .          .       B6W6
                .          .          .
                .          .          .
520             .      CB6W6............
                .          V
                .          V
524             .     RB9W6A
                .          .
                .          .
531             .          .       B5W6
                .          .          .
                .          .          .
542             .          .          .      B4W6A
                .          .          .          .
                .          .          .          .
554             .          .          .          .       B4W6B
                .          .          .          .          .
                .          .          .          .          .
566             .          .          .      CB4W6............
                .          .          .          V
                .          .          .          V
570             .          .          .      RB7W6
                .          .          .          .
                .          .          .          .
577             .          .          .          .        B7W6
                .          .          .          .          .
                .          .          .          .          .
588             .          .          .     CB7W6A............
                .          .          .          .
                .          .          .          .
592             .          .      CB7W6............
                .          .          V
                .          .          V
596             .          .      RB9W6
                .          .          .
                .          .          .
603             .          .          .       B9W6
                .          .          .          .
                .          .          .          .
614             .      CB9W6........................
                .          .
                .          .
619             .          .       B8W6
                .          .          V
                .          .          V
632             .          .     RB12W6
                .          .          .
                .          .          .
639             .          .          .      B12W6
                .          .          .          .
                .          .          .          .
651             .          .     CB12W6............
                .          .          .
                .          .          .
656             .     CB9W6A............
                .          V
                .          V
662             .     RB13WC
```

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                .          .
                .          .
669             .          .      B13W6A
                .          .          .
                .          .          .
681             .      C13W6A............
                .          V
                .          V
686             .      RB13W3
                .          .
                .          .
695             .          .      B10W6A
                .          .          V
                .          .          V
705             .          .      RB11WA
                .          .          .
                .          .          .
712             .          .          .       B11W6
                .          .          .          .
                .          .          .          .
725             .          .          .          .      B10W6B
                .          .          .          .          V
                .          .          .          .          V
735             .          .          .          .      RB11WB
                .          .          .          .          .
                .          .          .          .          .
742             .          .      CB11W6........................
                .          .          V
                .          .          V
749             .          .      RB13W1
                .          .          .
                .          .          .
756             .          .          .       B14W6
                .          .          .          V
                .          .          .          V
769             .          .          .      RB13W2
                .          .          .          .
                .          .          .          .
776             .          .          .          .      B13W6B
                .          .          .          .          .
                .          .          .          .          .
789             .      C13W6B...................................
                .          .
                .          .
793         DUMMY............
                .
                .
799             .        B1W3
                .          .
                .          .
813             .          .       B1W4A
                .          .          V
                .          .          V
823             .          .      RB1W4B
                .          .          .
                .          .          .
830             .          .          .       B1W4B
                .          .          .          .
                .          .          .          .
840             .          .       CB1W4............
                .          .          V
                .          .          V
844             .          .      RB2W4B
                .          .          .
                .          .          .
851             .          .          .       B2W4B
                .          .          .          .
                .          .          .          .
864             .          .      CB2W4B............
                .          .          .
                .          .          .
869             .          .          .       B2W4A
                .          .          .          .
                .          .          .          .
880             .          .       CB2W4............
                .          .          V
                .          .          V
884             .          .      RB4W4A
                .          .          .
                .          .          .
891             .          .          .        B4W4
                .          .          .          .
                .          .          .          .
904             .          .          .          .       B1W4C
                .          .          .          .          V
                .          .          .          .          V
914             .          .          .          .      RB2W4C
```

```
                .          .          .          .          .
                .          .          .          .          .
  921           .          .          .          .          .       B2W4C
                .          .          .          .          .           .
                .          .          .          .          .           .
  931           .          .          .          .      CB2W4C............
                .          .          .          .          V
                .          .          .          .          V
  936           .          .          .          .      RB4W4B
                .          .          .          .          .
                .          .          .          .          .
  943           .          .       CB4W4.......................
                .          .          .
                .          .          .
  948           .          .          .        B3W4
                .          .          .           V
                .          .          .           V
  958           .          .          .      RB5W4A
                .          .          .           .
                .          .          .           .
  965           .          .          .           .       B5W4A
                .          .          .           .           .
                .          .          .           .           .
  975           .          .          .      CB5W4A............
                .          .          .           V
                .          .          .           V
  979           .          .          .      RB5W4B
                .          .          .           .
                .          .          .           .
  986           .          .          .           .       B5W4B
                .          .          .           .           .
                .          .          .           .           .
  997           .          .          .      CB5W4B............
                .          .          .           .
                .          .          .           .
 1002        DUMMY...................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   13JUN06  TIME  13:52:44  *                                    *          (916) 756-1104              *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

```
Project ID: NN_24FC - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NN_24FC.DAT
MODEL:       100-Year, 24-Hour Future Condition Model
DEVELOPER:   Dibble & Associates, Inc.                 DATE: Sept. 29, 2003

NOTES:       This model incorporates 2 new sub-basins B13W6A and B13W6B, which
             was not included in the original model, NN_24F.DAT created in
             Feb. 22, 2004. (Modification: July 16, 2005)

             Modification was made on creating CB2W4B (i.e., combining RB2W4B
             and B2W4B) before it gets combined with B2W4A. - July 19, 2005


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

    IT          HYDROGRAPH TIME DATA
                       NMIN          3  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1   0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2   0  ENDING DATE
                     NDTIME       1557  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL     .05 HOURS
                      TOTAL TIME BASE   39.95 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


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


            **************
            *            *
 239 KK     *    CB13W1  *
            *            *
            **************

 241 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 244 KK     *     B15W1  *     BASIN
            *            *
            **************

 247 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 256 KK     *     B16W1  *     BASIN
            *            *
            **************

 260 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 268 KK     *     B17W1  *     BASIN
            *            *
            **************

 272 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
```

```
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 280 KK   *     B18W1  *     BASIN
          *            *
          **************

 284 KO          OUTPUT CONTROL VARIABLES
                   IPRNT           5  PRINT CONTROL
                   IPLOT           0  PLOT CONTROL
                   QSCAL          0.  HYDROGRAPH PLOT SCALE
                   IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 292 KK   *      B1W2  *     BASIN
          *            *
          **************

 296 KO          OUTPUT CONTROL VARIABLES
                   IPRNT           5  PRINT CONTROL
                   IPLOT           0  PLOT CONTROL
                   QSCAL          0.  HYDROGRAPH PLOT SCALE
                   IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 304 KK   *      B2W2  *     BASIN
          *            *
          **************

 308 KO          OUTPUT CONTROL VARIABLES
                   IPRNT           5  PRINT CONTROL
                   IPLOT           0  PLOT CONTROL
                   QSCAL          0.  HYDROGRAPH PLOT SCALE
                   IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 320 KK   *      B4W2  *     BASIN
          *            *
          **************

 324 KO          OUTPUT CONTROL VARIABLES
                   IPRNT           5  PRINT CONTROL
                   IPLOT           0  PLOT CONTROL
                   QSCAL          0.  HYDROGRAPH PLOT SCALE
```

```
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 364 KK     *     CB6W5  *
            *            *
            **************

 366 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 397 KK     *     CB7W5  *
            *            *
            **************

 399 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 406 KK     *      B5W5  *     BASIN
            *            *
            **************

 410 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 418 KK     *     B5W5A  *     BASIN
            *            *
            **************

 422 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
```

```
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 430 KK   *      B1W5  *     BASIN
          *            *
          **************

 434 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 614 KK   *     CB9W6  *
          *            *
          **************

 616 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 651 KK   *    CB12W6  *
          *            *
          **************

 653 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 656 KK   *    CB9W6A  *
          *            *
          **************

 658 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
```

```
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 681 KK   *    C13W6A  *
          *            *
          **************

 683 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 742 KK   *    CB11W6  *
          *            *
          **************

 744 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 756 KK   *     B14W6  *     BASIN
          *            *
          **************

 760 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


          **************
          *            *
 776 KK   *    B13W6B  *     BASIN
          *            *
          **************

 780 KO         OUTPUT CONTROL VARIABLES
```

```
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 931 KK     *    CB2W4C  *
            *            *
            **************

 933 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 943 KK     *     CB4W4  *
            *            *
            **************

 945 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 997 KK     *    CB5W4B  *
            *            *
            **************

 999 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                   TIME IN HOURS,  AREA IN SQUARE MILES

                                 PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION       STATION  FLOW     PEAK                                          AREA      STAGE     MAX STAGE
+                                                     6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                        B1W1    358.   12.35          51.         13.          8.        .33
```

```
          HYDROGRAPH AT
+                         B2W1      159.  12.25        19.       5.       3.      .12
          2 COMBINED AT
+                         CB2W1     504.  12.30        70.      18.      11.      .45
          ROUTED TO
+                         RB6W1     458.  12.65        70.      18.      11.      .45
+                                                                                        2016.41      12.65
          HYDROGRAPH AT
+                         B6W1      152.  12.15        15.       4.       2.      .11
          2 COMBINED AT
+                         CB6W1     505.  12.60        86.      22.      13.      .56
          HYDROGRAPH AT
+                         B8W1      200.  12.25        24.       6.       4.      .15
          HYDROGRAPH AT
+                         B3W1      203.  12.15        21.       5.       3.      .14
          HYDROGRAPH AT
+                         B4W1      223.  12.15        23.       6.       3.      .14
          2 COMBINED AT
+                         CB3W1     426.  12.15        44.      11.       7.      .28
          ROUTED TO
+                         RB7W1     381.  12.40        44.      11.       7.      .28
+                                                                                        2020.67      12.40
          HYDROGRAPH AT
+                         B7W1      226.  12.15        22.       5.       3.      .14
          2 COMBINED AT
+                         CB7W1     510.  12.35        66.      17.      10.      .42
          3 COMBINED AT
+                         CB9W1A   1039.  12.40       176.      44.      26.     1.14
          ROUTED TO
+                         RB9W1A   1018.  12.65       176.      44.      26.     1.14
+                                                                                        1881.78      12.65
          HYDROGRAPH AT
+                         B10W1     204.  12.15        21.       5.       3.      .12
          ROUTED TO
+                         RB9W1B    203.  12.20        21.       5.       3.      .12
+                                                                                        1828.03      12.20
          HYDROGRAPH AT
+                         B9W1      152.  12.15        15.       4.       3.      .11
          3 COMBINED AT
+                         CB9W1    1116.  12.65       212.      54.      32.     1.36
          HYDROGRAPH AT
+                         B5W1      356.  12.45        59.      15.       9.      .38
          2 COMBINED AT
+                         CB13WA   1439.  12.60       271.      69.      41.     1.75
          ROUTED TO
+                         RB13WA   1381.  12.85       271.      69.      41.     1.75
+                                                                                        1610.55      12.85
          HYDROGRAPH AT
+                         B13W1     255.  12.25        30.       8.       5.      .21
          HYDROGRAPH AT
+                         B14W1     218.  12.15        23.       6.       3.      .14
          ROUTED TO
+                         RB13WB    218.  12.20        23.       6.       3.      .14
+                                                                                        1553.75      12.20
          3 COMBINED AT
+                         CB13W1   1489.  12.80       325.      82.      49.     2.10
          HYDROGRAPH AT
+                         B15W1      58.  12.05         4.       1.       1.      .02
          HYDROGRAPH AT
+                         B16W1      37.  12.00         2.       1.       0.      .01
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          HYDROGRAPH AT
+                         B17W1      25.   12.00        2.        0.        0.      .01
          HYDROGRAPH AT
+                         B18W1      98.   12.10        8.        2.        1.      .05
          HYDROGRAPH AT
+                          B1W2     124.   12.15       13.        3.        2.      .08
          HYDROGRAPH AT
+                          B2W2     143.   12.20       16.        4.        2.      .10
          2 COMBINED AT
+                         CB2W2     265.   12.20       29.        7.        4.      .18
          HYDROGRAPH AT
+                          B4W2     172.   12.10       15.        4.        2.      .10
          7 COMBINED AT
+                         DUMMY    1556.   12.80      385.       97.       58.     2.48
          HYDROGRAPH AT
+                          B3W5     138.   12.10       12.        3.        2.      .08
          ROUTED TO
+                         RB6W5     110.   12.45       12.        3.        2.      .08
+                                                                                 2217.62      12.45
          HYDROGRAPH AT
+                          B6W5     156.   12.15       15.        4.        2.      .10
          2 COMBINED AT
+                         CB6W5     191.   12.30       27.        7.        4.      .18
          HYDROGRAPH AT
+                          B4W5     118.   12.10       10.        3.        2.      .07
          ROUTED TO
+                         RB7W5     112.   12.25       10.        3.        2.      .07
+                                                                                 2263.17      12.25
          HYDROGRAPH AT
+                          B7W5     189.   12.20       21.        5.        3.      .14
          2 COMBINED AT
+                         CB7W5     297.   12.25       31.        8.        5.      .21
          2 COMBINED AT
+                        CB67W5     487.   12.25       58.       15.        9.      .40
          HYDROGRAPH AT
+                          B5W5     118.   12.20       13.        3.        2.      .09
          HYDROGRAPH AT
+                         B5W5A     142.   12.20       15.        4.        2.      .10
          HYDROGRAPH AT
+                          B1W5     303.   12.20       34.        8.        5.      .21
          5 COMBINED AT
+                         DUMMY    2315.   12.25      504.      127.       76.     3.27
          HYDROGRAPH AT
+                          B1W6     875.   12.15      100.       28.       17.      .52
          ROUTED TO
+                         RB2W6     708.   12.45      100.       28.       17.      .52
+                                                                                 2759.91      12.45
          HYDROGRAPH AT
+                          B2W6    1029.   12.40      168.       46.       28.      .96
          2 COMBINED AT
+                         CB2W6    1724.   12.40      268.       73.       44.     1.48
          HYDROGRAPH AT
+                          B3W6     489.   12.25       71.       20.       12.      .36
          2 COMBINED AT
+                         CB3W6    2150.   12.40      339.       93.       56.     1.84
          ROUTED TO
+                         RB6W6    2102.   12.55      339.       93.       56.     1.84
+                                                                                 2677.38      12.55
          HYDROGRAPH AT
+                          B6W6     375.   12.15       44.       13.        8.      .22
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          2 COMBINED AT
+                     CB6W6     2245.  12.50      383.      106.      64.     2.05
          ROUTED TO
+                     RB9W6A    2172.  12.65      383.      106.      64.     2.05
+                                                                          2544.08     12.65
          HYDROGRAPH AT
+                      B5W6      528.  12.25       87.       26.      16.      .38
          HYDROGRAPH AT
+                     B4W6A      397.  12.15       47.       13.       8.      .24
          HYDROGRAPH AT
+                     B4W6B      335.  12.15       41.       12.       7.      .19
          2 COMBINED AT
+                     CB4W6      731.  12.15       89.       26.      15.      .43
          ROUTED TO
+                      RB7W6     708.  12.30       89.       26.      15.      .43
+                                                                          2721.76     12.30
          HYDROGRAPH AT
+                      B7W6      461.  12.15       61.       18.      11.      .26
          2 COMBINED AT
+                    CB7W6A     1094.  12.25      149.       44.      26.      .69
          2 COMBINED AT
+                     CB7W6     1622.  12.25      237.       70.      42.     1.08
          ROUTED TO
+                      RB9W6    1466.  12.50      236.       70.      42.     1.08
+                                                                          2490.94     12.50
          HYDROGRAPH AT
+                      B9W6      697.  12.25      100.       28.      17.      .55
          3 COMBINED AT
+                     CB9W6     3826.  12.60      719.      204.     123.     3.68
          HYDROGRAPH AT
+                      B8W6      224.  12.10       24.        7.       4.      .11
          ROUTED TO
+                     RB12W6     183.  12.45       24.        7.       4.      .11
+                                                                          2507.99     12.45
          HYDROGRAPH AT
+                     B12W6      367.  12.15       42.       12.       7.      .23
          2 COMBINED AT
+                    CB12W6      441.  12.30       66.       19.      11.      .34
          2 COMBINED AT
+                    CB9W6A     4084.  12.60      785.      223.     134.     4.02
          ROUTED TO
+                     RB13WC    4084.  12.60      785.      223.     134.     4.02
+                                                                          2421.74     12.60
          HYDROGRAPH AT
+                    B13W6A      235.  12.05       17.        4.       3.      .11
          2 COMBINED AT
+                    C13W6A     4097.  12.60      802.      227.     137.     4.13
          ROUTED TO
+                     RB13W3    4091.  12.65      802.      227.     137.     4.13
+                                                                          2392.57     12.65
          HYDROGRAPH AT
+                    B10W6A      331.  12.10       37.       11.       7.      .16
          ROUTED TO
+                     RB11WA     274.  12.40       37.       11.       7.      .16
+                                                                          2501.98     12.40
          HYDROGRAPH AT
+                     B11W6      300.  12.10       32.        9.       5.      .16
          HYDROGRAPH AT
+                    B10W6B      316.  12.10       35.       10.       6.      .16
          ROUTED TO
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+                    RB11WB     286.  12.35      35.      10.      6.     .16
+                                                                          2502.00     12.35

     3 COMBINED AT
+                    CB11W6     723.  12.35     103.      30.     18.     .49

     ROUTED TO
+                    RB13W1     660.  12.50     103.      30.     18.     .49
+                                                                          2419.40     12.50

     HYDROGRAPH AT
+                     B14W6     204.  12.10      20.       5.      3.     .11

     ROUTED TO
+                    RB13W2     181.  12.25      19.       5.      3.     .11
+                                                                          2418.63     12.25

     HYDROGRAPH AT
+                    B13W6B     290.  12.15      33.       9.      5.     .19

     4 COMBINED AT
+                    C13W6B    4830.  12.60     957.     271.    163.    4.91

     2 COMBINED AT
+                     DUMMY    6616.  12.65    1461.     398.    240.    8.19

     HYDROGRAPH AT
+                      B1W3     474.  12.35      66.      17.     10.     .45

     HYDROGRAPH AT
+                     B1W4A     237.  12.10      25.       7.      4.     .13

     ROUTED TO
+                    RB1W4B     217.  12.25      25.       7.      4.     .13
+                                                                          2606.01     12.25

     HYDROGRAPH AT
+                     B1W4B     201.  12.15      21.       6.      4.     .12

     2 COMBINED AT
+                     CB1W4     405.  12.20      46.      13.      8.     .25

     ROUTED TO
+                    RB2W4B     391.  12.30      46.      13.      8.     .25
+                                                                          2535.46     12.30

     HYDROGRAPH AT
+                     B2W4B     183.  12.10      19.       5.      3.     .10

     2 COMBINED AT
+                    CB2W4B     528.  12.25      65.      18.     11.     .35

     HYDROGRAPH AT
+                     B2W4A     173.  12.20      23.       6.      4.     .12

     2 COMBINED AT
+                     CB2W4     700.  12.25      87.      24.     15.     .48

     ROUTED TO
+                    RB4W4A     547.  12.65      87.      24.     15.     .48
+                                                                          2353.73     12.65

     HYDROGRAPH AT
+                      B4W4     205.  12.30      26.       7.      4.     .19

     HYDROGRAPH AT
+                     B1W4C     174.  12.15      19.       5.      3.     .10

     ROUTED TO
+                    RB2W4C     105.  12.65      19.       5.      3.     .10
+                                                                          2536.73     12.65

     HYDROGRAPH AT
+                     B2W4C     149.  12.30      20.       5.      3.     .13

     2 COMBINED AT
+                    CB2W4C     202.  12.45      38.      10.      6.     .24

     ROUTED TO
+                    RB4W4B     201.  12.50      38.      10.      6.     .24
+                                                                          2311.57     12.50

     3 COMBINED AT
+                     CB4W4     847.  12.60     152.      41.     25.     .90

     HYDROGRAPH AT
+                      B3W4     173.  12.10      17.       5.      3.     .09
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          ROUTED TO
+                        RB5W4A      139.   12.40        17.        5.        3.       .09
+                                                                                              2351.58       12.40

          HYDROGRAPH AT
+                         B5W4A      140.   12.15        14.        4.        2.       .08

          2 COMBINED AT
+                        CB5W4A      211.   12.35        31.        8.        5.       .18

          ROUTED TO
+                        RB5W4B      176.   12.70        31.        8.        5.       .18
+                                                                                              2364.84       12.70

          HYDROGRAPH AT
+                         B5W4B      188.   12.20        21.        5.        3.       .15

          2 COMBINED AT
+                        CB5W4B      238.   12.65        52.       13.        8.       .33

          4 COMBINED AT
+                         DUMMY     7984.   12.60      1731.      469.      283.      9.87


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

D.6.2 NORTH-SOUTH BASIN - WITH BLACK HILLS TANK

(A) 100-Year, 6-Hour Event, Existing Condition Model

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS    *
 *              JUL   1997           *                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.1             *                    *        609 SECOND STREET          *
 *                                   *                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE   01JUL06  TIME  10:30:28 *                    *         (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   Project ID: NS_6EX - Major Basin: 01 - Return Period: 100 Years
        2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NS_6EX.DAT
        3           ID   MODEL:      100-Year, 6-Hour Existing Condition Model
        4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: June 30, 2006
        5           ID
        6           ID   IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.
        7           ID
                    *DIAGRAM
        8           IT       3                     800
        9           IO       5
       10           IN      15
                    *
                    *

       11           KK     1B1   BASIN
       12           BA   0.494
       13           KM   RAINFALL DEPTH OF 3.48 INCHES WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
       14           KM   AN AREAL REDUCTION COEFFICIENT OF 0.9658 WAS USED.
       15           PB   3.331
       16           PC   0.000   0.011   0.018   0.027   0.040   0.051   0.061   0.072   0.083   0.094
       17           PC   0.107   0.121   0.143   0.187   0.273   0.460   0.684   0.820   0.887   0.927
       18           PC   0.948   0.962   0.974   0.988   1.000
       19           LG    0.15    0.40    6.00    0.18       4
       20           UI      76     120     286     453     560     709     798     514     429     383
       21           UI     330     279     228     191     169     142     112      95      83      69
       22           UI      58      50      37      37      37      16      15      14      15      15
                    *

       23           KK  RT1112   ROUTE   REACH
       24           KM   ROUTE FLOW FROM 1B1 TO CP1B2
       25           RS       9    FLOW      -1
       26           RC   0.060   0.045   0.060   10466  0.0220   82.30
       27           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
       28           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

       29           KK     1B2   BASIN
       30           BA   0.161
       31           LG    0.15    0.38    5.60    0.22       0
       32           UI      14      13      14      37      51      68      84      93     103     115
       33           UI     141     162     112      93      81      79      71      68      62      56
       34           UI      53      48      42      36      34      32      31      29      23      22
                    *

       35           KK   CP1B2
       36           KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
       37           HC       2
                    *
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  38          KK     1B3   BASIN
  39          BA   0.129
  40          LG    0.15    0.40    6.00    0.18      11
  41          UI      24      56     123     171     225     233     151     125     108      88
  42          UI      67      58      47      36      29      26      18      17      12      12
  43          UI       8       5       4       5       5       4       5       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE  2

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

  44          KK    1B3L
  45          KM   DIVERT FLOW FROM 1B3 TO CP6B
  46          DT    1B3R
  47          DI      25      75     150     300     400     600
  48          DQ      25      75     149     291     383     560
              *

  49          KK  RT1314   ROUTE   REACH
  50          KM   ROUTE FLOW FROM 1B3 TO CP1B4
  51          RS       6    FLOW      -1
  52          RC   0.045   0.040   0.045    7191  0.0225   82.30
  53          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
  54          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
              *

  55          KK     1B4   BASIN
  56          BA   0.141
  57          LG    0.15    0.39    5.80    0.19       0
  58          UI      16      15      37      63      89     108     122     147     187     126
  59          UI     101      91      83      76      68      60      52      44      40      36
  60          UI      33      28      24      20      19      17      15      12      12      10
              *

  61          KK   CP1B4
  62          KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
  63          HC       2
              *

  64          KK  CP1214
  65          KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
  66          HC       2
              *

  67          KK  RT1452   ROUTE   REACH
  68          KM   ROUTE FLOW FROM CP1214 TO CP5B2
  69          RS       3    FLOW      -1
  70          RC   0.050   0.050   0.050    2610  0.0207   82.30
  71          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
  72          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
              *

  73          KK     5B2   BASIN
  74          BA   0.124
  75          LG    0.15    0.35    7.00    0.12       0
  76          UI      17      19      55      85     112     131     169     172     112      97
  77          UI      87      78      67      58      47      41      38      32      26      22
  78          UI      19      19      13      13      10       9       8       8       6       3
  79          UI       3       3       3       4       3       3       3       3       0       0
  80          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

  81          KK   CP5B2
  82          KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
  83          HC       2
              *

  84          KK  RT529B   ROUTE   REACH
  85          KM   ROUTE FLOW FROM CP5B2 TO CP9B
  86          RS       6    FLOW      -1
  87          RC   0.045   0.040   0.045    5011  0.0216   92.00
  88          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
  89          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
              *

  90          KK     5B1   BASIN
  91          BA   0.099
  92          LG    0.15    0.32    7.60    0.10       0
  93          UI      15      24      57      91     113     141     161     103      85      77
  94          UI      67      56      45      38      34      29      22      20      16      14
  95          UI      11      11       7       7       7       4       3       3       3       3
              *
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 96          KK  RT519B   ROUTE   REACH
 97          KM   ROUTE FLOW FROM CP5B2 TO CP9B
 98          RS       3    FLOW      -1
 99          RC   0.050   0.050   0.050    5346  0.0213   92.00
100          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
101          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

102          KK      9B   BASIN
103          BA   0.200
104          LG    0.14    0.36    5.00    0.27       2
105          UI      21      21      43      76     109     134     154     177     225     227
106          UI     152     129     120     110      97      90      81      70      60      53
107          UI      49      47      40      35      27      27      23      23      18      16
108          UI      17      13      10      10      11      10       7       4       4       4
             *

109          KK     8B1   BASIN
110          BA   0.076
111          LG    0.14    0.36    5.00    0.27       3
112          UI      14      33      73     100     133     137      89      74      64      51
113          UI      40      34      28      21      17      15      11      10       7       6
114          UI       5       3       3       3       2       3       3       0       0       0
115          UI       0       0       0       0       0       0       0       0       0       0
             *

116          KK  RT819B   ROUTE   REACH
117          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
118          RS       3    FLOW      -1
119          RC   0.050   0.050   0.050     677  0.0177   64.70
120          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
121          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *
1                                          HEC-1 INPUT                                          PAGE  4

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

122          KK     4B1   BASIN
123          BA   0.368
124          LG    0.15    0.38    5.40    0.23       0
125          UI      33      34      44     102     139     189     219     245     272     331
126          UI     402     284     228     205     189     175     160     149     136     122
127          UI     108      94      84      80      75      71      57      53      43      43
             *

128          KK  RT4142   ROUTE   REACH
129          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
130          RS       4    FLOW      -1
131          RC   0.050   0.050   0.050    6204  0.0213   64.70
132          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
133          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

134          KK     4B2   BASIN
135          BA   0.240
136          LG    0.15    0.36    5.00    0.28       0
137          UI      29      29      77     126     177     208     238     316     278     198
138          UI     170     153     139     124     110      94      78      70      65      57
139          UI      47      38      36      32      29      22      22      19      14      14
             *

140          KK   CP4B2
141          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
142          HC       2
             *

143          KK  RT4282   ROUTE   REACH
144          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
145          RS       3    FLOW      -1
146          RC   0.050   0.050   0.050    3773  0.0217   64.70
147          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
148          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

149          KK     8B2   BASIN
150          BA   0.064
151          LG    0.15    0.36    5.00    0.27       1
152          UI      11      20      48      70      86     121      81      64      55      47
153          UI      40      31      26      24      18      14      12      11       8       8
154          UI       5       6       4       2       2       2       2       2       2       2
             *

155          KK     2B1   BASIN
156          BA   0.472
157          LG    0.15    0.40    6.00    0.18       1
```

```
 158          UI      75     130     308     473     584     786     690     478     406     360
 159          UI     305     256     196     178     156     119      97      83      72      58
 160          UI      51      37      37      36      14      15      14      15      14      15
              *
1                                          HEC-1 INPUT                                          PAGE  5

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


 161          KK  RT2122   ROUTE   REACH
 162          KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
 163          RS       3    FLOW      -1
 164          RC   0.060   0.045   0.060    4909  0.0159 2708.00
 165          RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
 166          RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
              *

 167          KK     2B2   BASIN
 168          BA   0.533
 169          LG    0.15    0.39    5.70    0.20       1
 170          UI      54      55     101     186     273     340     391     438     539     639
 171          UI     424     350     319     294     265     244     221     196     171     144
 172          UI     132     125     116      97      87      69      68      60      59      44
              *

 173          KK     2B3   BASIN
 174          BA   0.259
 175          LG    0.15    0.40    6.00    0.18       0
 176          UI      32      32      95     149     202     239     281     374     267     205
 177          UI     186     163     149     130     113      95      80      76      69      54
 178          UI      45      40      36      33      25      25      21      16      16      16
              *

 179          KK  CP2223
 180          KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
 181          HC       3
              *

 182          KK  RT2226   ROUTE   REACH
 183          KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
 184          RS       6    FLOW      -1
 185          RC   0.050   0.040   0.050    4244  0.0118 2628.00
 186          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 187          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 188          KK     2B4   BASIN
 189          BA   0.212
 190          LG    0.15    0.40    6.00    0.18       0
 191          UI      21      21      36      70     100     127     148     164     198     249
 192          UI     182     146     125     118     107      97      89      82      70      61
 193          UI      54      50      48      44      35      31      27      25      23      23
              *

 194          KK     2B5   BASIN
 195          BA   0.125
 196          LG    0.15    0.37    6.60    0.14       7
 197          UI      28      88     174     239     278     171     140     114      85      66
 198          UI      55      39      32      24      19      14      14       6       5       5
 199          UI       6       5       5       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


 200          KK  CP2425
 201          KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
 202          HC       2
              *

 203          KK  RT4526   ROUTE   REACH
 204          KM   ROUTE FLOW FROM CP2425 TO CP2B6
 205          RS       4    FLOW      -1
 206          RC   0.060   0.045   0.060    4060  0.0113 2628.00
 207          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 208          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 209          KK     2B6   BASIN
 210          BA   0.308
 211          LG    0.15    0.38    6.40    0.16      13
 212          UI      43      57     147     235     300     349     489     368     273     241
 213          UI     213     189     161     134     111     101      90      71      56      52
 214          UI      47      36      33      29      21      21      21      13       8       9
              *
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 215          KK   CP2B6
 216          KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
 217          HC       3
              *

 218          KK   RS2B6
 219          KM   STORAGE ROUTING AT BLACK HILLS TANK
 220          RS       1    STOR       0
 221          SV       0   2.016   6.358  12.613  21.211  32.542  47.126  65.725  88.983 117.210
 222          SE    2594    2596    2598    2600    2602    2604    2606    2608    2610    2612
 223          SQ       0    0.00    9.64   53.83  146.07  299.07  531.50  859.12 1286.00 1822.67
 224          SE    2608 2608.55 2609.05 2609.55 2610.05 2610.55 2611.05 2611.55 2612.05 2612.55
              *

 225          KK  RT2631   ROUTE   REACH
 226          KM   ROUTE RS2B6 TO CP3B1
 227          RS       4    FLOW      -1
 228          RC   0.060   0.045   0.060    5540  0.0220 2556.00
 229          RX     0.0    20.5    34.9    58.6    71.4    96.0   139.0   169.0
 230          RY  2554.0  2550.0  2546.0  2543.0  2544.0  2548.0  2552.0  2556.0
              *

 231          KK     3B1   BASIN
 232          BA   0.098
 233          LG    0.15    0.36    5.00    0.28       0
 234          UI      12      11      32      51      73      85      97     129     113      81
 235          UI      70      63      56      51      45      38      32      28      27      23
 236          UI      19      16      15      13      11       9       9       8       6       6
              *
1                                          HEC-1 INPUT                                          PAGE  7

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

 237          KK   CP3B1
 238          KM   COMBINE HYDROGRAPHS FROM 3B1 AND RT2631
 239          HC       2
              *

 240          KK  RT3132   ROUTE   REACH
 241          KM   ROUTE FLOW FROM CP3B1 TO CP3B2
 242          RS       4    FLOW      -1
 243          RC   0.060   0.045   0.060    3657  0.0202   52.00
 244          RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
 245          RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
              *

 246          KK     3B2   BASIN
 247          BA   0.342
 248          LG    0.15    0.39    5.70    0.20       3
 249          UI      35      34      66     119     175     218     252     280     346     410
 250          UI     272     225     204     189     170     157     141     126     110      93
 251          UI      84      80      75      62      56      45      43      38      38      28
              *

 252          KK   CP3B2
 253          KM   COMBINE FLOW FROM RT3132 AND 3B2
 254          HC       2
              *

 255          KK  RT3282   ROUTE   REACH
 256          KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
 257          RS       9    FLOW      -1
 258          RC   0.060   0.045   0.060     329  0.0213 2419.60
 259          RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
 260          RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
              *

 261          KK   CP8B2
 262          KM   COMBINE HYDROGRAPHS FROM 4B28B2 8B2 AND 3B28B2
 263          HC       3
              *

 264          KK  RT829B   ROUTE   REACH
 265          KM   ROUTE FLOW FROM CP_8B2 TO CP_9B
 266          RS       9    FLOW      -1
 267          RC   0.060   0.045   0.060     507  0.0178 2410.00
 268          RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
 269          RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
              *

 270          KK    CP9B
 271          KM   COMBINE HYDROGRAPHS FROM 5BS9B, 5B19B, 9B,8B29B,AND 8B19B
 272          KO                                      21
 273          HC       5
              *
1                                          HEC-1 INPUT                                          PAGE  8
```

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

 274          KK   1B36B
 275          KM   RETRIEVE FLOW FROM 1B3
 276          DR    1B3R
              *

 277          KK  RT136B   ROUTE   REACH
 278          KM   ROUTE FLOW FROM 1B3 TO CP_6B   .
 279          RS      12    FLOW      -1
 280          RC   0.060   0.045   0.060    8533  0.0234   86.50
 281          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
 282          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
              *

 283          KK      6B   BASIN
 284          BA   0.204
 285          LG    0.15    0.36    6.80    0.13       3
 286          UI      21      21      38      72     104     130     150     168     205     245
 287          UI     162     135     122     112     101      94      84      76      65      55
 288          UI      51      47      45      37      34      26      26      23      22      17
              *

 289          KK    CP6B
 290          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
 291          KO                                    21
 292          HC       2
              *

 293          KK      1N   BASIN
 294          BA   0.131
 295          KO                                    21
 296          LG    0.15    0.39    6.20    0.17      25
 297          UI      79     300     466     281     199     124      87      55      35      25
 298          UI      13       9      10       0       0       0       0       0       0       0
 299          UI       0       0       0       0       0       0       0       0       0       0
              *

 300          KK      4A   BASIN
 301          BA   0.082
 302          KO                                    21
 303          LG    0.15    0.39    5.80    0.19       6
 304          UI      11      15      40      62      81      92     130      98      73      64
 305          UI      57      50      43      36      29      27      24      19      15      14
 306          UI      13       9       9       7       6       5       6       3       3       2
              *

 307          KK      2A   BASIN
 308          BA   0.031
 309          KO                                    21
 310          LG    0.15    0.39    6.20    0.17       0
 311          UI       6      16      33      46      64      49      35      30      25      19
 312          UI      15      14      10       7       7       5       4       3       3       2
 313          UI       1       1       1       1       2       1       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE  9

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

 314          KK      1S   BASIN
 315          BA   0.188
 316          LG    0.15    0.39    6.20    0.17      22
 317          UI      38      94     203     275     393     293     216     184     148     117
 318          UI      92      80      60      46      41      29      25      19      18      11
 319          UI       7       7       8       7       7       7       0       0       0       0
              *

 320          KK  RT1S2S   ROUTE   REACH
 321          KM   ROUTE FLOW FROM 1S TO CP_2S
 322          RS       3    FLOW      -1
 323          RC   0.060   0.045   0.060    4833  0.0252  100.00
 324          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
 325          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
              *

 326          KK      2S   BASIN
 327          BA   0.092
 328          LG    0.15    0.38    5.60    0.22       1
 329          UI      16      28      69     101     124     174     115      92      79      70
 330          UI      56      46      36      34      27      20      18      15      12      11
 331          UI       7       8       7       2       3       3       3       3       3       3
              *

 332          KK    CP2S
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 333          KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
 334          HC       2
              *

 335          KK  RT2S3S   ROUTE   REACH
 336          KM   ROUTE FLOW FROM 2S TO CP_3S
 337          RS       5    FLOW      -1
 338          RC   0.050   0.050   0.050    2774  0.0231   29.10
 339          RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
 340          RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
              *

 341          KK      3S   BASIN
 342          BA   0.087
 343          LG    0.14    0.37    5.30    0.24       2
 344          UI      14      28      65      95     118     165     108      87      75      65
 345          UI      54      43      35      32      26      18      17      15      11       9
 346          UI       7       7       7       2       3       3       3       3       3       3
              *

 347          KK    CP3S
 348          KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
 349          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 350          KK  RT3S4N   ROUTE   REACH
 351          KM   ROUTE FLOW FROM CP3S TO CP4N
 352          RS       4    FLOW      -1
 353          RC   0.060   0.045   0.060    1040  0.0250 2472.00
 354          RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
 355          RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
              *
              *

 356          KK      3N   BASIN
 357          BA   0.110
 358          LG    0.15    0.39    6.20    0.17      20
 359          UI      17      31      72     110     136     183     161     111      95      84
 360          UI      71      59      46      42      36      28      22      20      17      13
 361          UI      12       8       9       8       4       3       4       3       3       4
              *

 362          KK  RT34N1   ROUTE   REACH
 363          KM   ROUTE FLOW FROM 3N TO CP_4N1
 364          RS       5    FLOW      -1
 365          RC   0.060   0.045   0.060     940  0.0277 2542.00
 366          RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
 367          RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
              *

 368          KK     4N1   BASIN
 369          BA   0.050
 370          LG    0.15    0.38    5.60    0.22       2
 371          UI       9      18      42      60      78      94      59      50      43      35
 372          UI      29      23      20      16      13      10      10       6       6       4
 373          UI       4       4       1       2       2       1       2       2       2       0
              *

 374          KK   CP4N1
 375          KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
 376          KO                                      21
 377          HC       2
              *

 378          KK  RT4N14   ROUTE   REACH
 379          KM   ROUTE FLOW FROM CP4N1 TO CP4N
 380          RS       3    FLOW      -1
 381          RC   0.060   0.045   0.060    3010  0.0239   72.70
 382          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
 383          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
              *

 384          KK      2N   BASIN
 385          BA   0.205
 386          LG    0.15    0.40    6.00    0.18      14
 387          UI      36      76     171     246     318     386     245     204     173     148
 388          UI     118      93      81      67      51      43      37      28      25      17
 389          UI      18      14       7       7       7       7       7       7       7       0
              *
1                                          HEC-1 INPUT                                          PAGE 11

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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390          KK  RT2N4N   ROUTE   REACH
391          KM   ROUTE FLOW FROM 2N TO CP4N
392          RS       4    FLOW      -1
393          RC   0.060   0.045   0.060    3992  0.0256   72.70
394          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
395          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

396          KK      4N   BASIN
397          BA   0.074
398          LG    0.13    0.36    6.80    0.12       6
399          UI      14      31      72      97     130     134      86      71      63      50
400          UI      38      33      28      21      16      15      11       9       7       6
401          UI       5       3       3       2       3       2       3       0       0       0
             *

402          KK    CP4N
403          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
404          KO                                     21
405          HC       4
406          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    11        1B1
              V
              V
    23      RT1112
              .
              .
    29        .         1B2
              .           .
              .           .
    35      CP1B2............
              .
              .
    38        .         1B3
              .           .
              .           .
    46        .           .------->    1B3R
    44        .        1B3L
              .           V
              .           V
    49        .      RT1314
              .           .
              .           .
    55        .           .         1B4
              .           .           .
              .           .           .
    61        .       CP1B4............
              .           .
              .           .
    64      CP1214...........
              V
              V
    67      RT1452
              .
              .
    73        .         5B2
              .           .
              .           .
    81      CP5B2............
              V
              V
    84      RT529B
              .
              .
    90        .         5B1
              .           V
              .           V
    96        .      RT519B
              .           .
              .           .
   102        .           .          9B
              .           .           .
              .           .           .
   109        .           .           .         8B1
              .           .           .           V
              .           .           .           V
   116        .           .           .      RT819B
              .           .           .           .
              .           .           .           .
```

```
122          .         .         .         .        4B1
             .         .         .         .          V
             .         .         .         .          V
128          .         .         .         .     RT4142
             .         .         .         .          .
             .         .         .         .          .
134          .         .         .         .          .         4B2
             .         .         .         .          .           .
             .         .         .         .          .           .
140          .         .         .         .     CP4B2............
             .         .         .         .          V
             .         .         .         .          V
143          .         .         .         .     RT4282
             .         .         .         .          .
             .         .         .         .          .
149          .         .         .         .          .         8B2
             .         .         .         .          .           .
             .         .         .         .          .           .
155          .         .         .         .          .           .        2B1
             .         .         .         .          .           .          V
             .         .         .         .          .           .          V
161          .         .         .         .          .           .     RT2122
             .         .         .         .          .           .          .
             .         .         .         .          .           .          .
167          .         .         .         .          .           .          .         2B2
             .         .         .         .          .           .          .           .
             .         .         .         .          .           .          .           .
173          .         .         .         .          .           .          .           .         2B3
             .         .         .         .          .           .          .           .           .
             .         .         .         .          .           .          .           .           .
179          .         .         .         .          .           .     CP2223......................
             .         .         .         .          .           .          V
             .         .         .         .          .           .          V
182          .         .         .         .          .           .     RT2226
             .         .         .         .          .           .          .
             .         .         .         .          .           .          .
188          .         .         .         .          .           .          .         2B4
             .         .         .         .          .           .          .           .
             .         .         .         .          .           .          .           .
194          .         .         .         .          .           .          .           .         2B5
             .         .         .         .          .           .          .           .           .
             .         .         .         .          .           .          .           .           .
200          .         .         .         .          .           .          .      CP2425............
             .         .         .         .          .           .          .           V
             .         .         .         .          .           .          .           V
203          .         .         .         .          .           .          .      RT4526
             .         .         .         .          .           .          .           .
             .         .         .         .          .           .          .           .
209          .         .         .         .          .           .          .           .         2B6
             .         .         .         .          .           .          .           .           .
             .         .         .         .          .           .          .           .           .
215          .         .         .         .          .           .     CP2B6......................
             .         .         .         .          .           .          V
             .         .         .         .          .           .          V
218          .         .         .         .          .           .     RS2B6
             .         .         .         .          .           .          V
             .         .         .         .          .           .          V
225          .         .         .         .          .           .     RT2631
             .         .         .         .          .           .          .
             .         .         .         .          .           .          .
231          .         .         .         .          .           .          .         3B1
             .         .         .         .          .           .          .           .
             .         .         .         .          .           .          .           .
237          .         .         .         .          .           .     CP3B1............
             .         .         .         .          .           .          V
             .         .         .         .          .           .          V
240          .         .         .         .          .           .     RT3132
             .         .         .         .          .           .          .
             .         .         .         .          .           .          .
246          .         .         .         .          .           .          .         3B2
             .         .         .         .          .           .          .           .
             .         .         .         .          .           .          .           .
252          .         .         .         .          .           .     CP3B2............
             .         .         .         .          .           .          V
             .         .         .         .          .           .          V
255          .         .         .         .          .           .     RT3282
             .         .         .         .          .           .          .
             .         .         .         .          .           .          .
261          .         .         .         .     CP8B2......................
             .         .         .         .          V
             .         .         .         .          V
264          .         .         .         .     RT829B
             .         .         .         .          .
             .         .         .         .          .
270     CP9B.............................................
             .
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 276          .          .<-------    1B3R
 274          .      1B36B
              .          V
              .          V
 277          .     RT136B
              .          .
              .          .
 283          .          .         6B
              .          .          .
              .          .          .
 289          .      CP6B............
              .          .
              .          .
 293          .          .         1N
              .          .          .
              .          .          .
 300          .          .          .         4A
              .          .          .          .
              .          .          .          .
 307          .          .          .          .         2A
              .          .          .          .          .
              .          .          .          .          .
 314          .          .          .          .          .         1S
              .          .          .          .          .          V
              .          .          .          .          .          V
 320          .          .          .          .          .     RT1S2S
              .          .          .          .          .          .
              .          .          .          .          .          .
 326          .          .          .          .          .          .         2S
              .          .          .          .          .          .          .
              .          .          .          .          .          .          .
 332          .          .          .          .          .       CP2S............
              .          .          .          .          .          V
              .          .          .          .          .          V
 335          .          .          .          .          .     RT2S3S
              .          .          .          .          .          .
              .          .          .          .          .          .
 341          .          .          .          .          .          .         3S
              .          .          .          .          .          .          .
              .          .          .          .          .          .          .
 347          .          .          .          .          .       CP3S............
              .          .          .          .          .          V
              .          .          .          .          .          V
 350          .          .          .          .          .     RT3S4N
              .          .          .          .          .          .
              .          .          .          .          .          .
 356          .          .          .          .          .          .         3N
              .          .          .          .          .          .          V
              .          .          .          .          .          .          V
 362          .          .          .          .          .          .     RT34N1
              .          .          .          .          .          .          .
              .          .          .          .          .          .          .
 368          .          .          .          .          .          .          .         4N1
              .          .          .          .          .          .          .          .
              .          .          .          .          .          .          .          .
 374          .          .          .          .          .          .      CP4N1............
              .          .          .          .          .          .          V
              .          .          .          .          .          .          V
 378          .          .          .          .          .          .     RT4N14
              .          .          .          .          .          .          .
              .          .          .          .          .          .          .
 384          .          .          .          .          .          .          .         2N
              .          .          .          .          .          .          .          V
              .          .          .          .          .          .          .          V
 390          .          .          .          .          .          .          .     RT2N4N
              .          .          .          .          .          .          .          .
              .          .          .          .          .          .          .          .
 396          .          .          .          .          .          .          .          .         4N
              .          .          .          .          .          .          .          .          .
              .          .          .          .          .          .          .          .          .
 402          .          .          .          .          .       CP4N.......................................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   01JUL06  TIME  10:30:28  *                                    *          (916) 756-1104              *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

```
                    Project ID: NS_6EX - Major Basin: 01 - Return Period: 100 Years
                    RIO VERDE AREA DRAINAGE MASTER PLAN                FILE NAME: NS_6EX.DAT
                    MODEL:      100-Year, 6-Hour Existing Condition Model
                    DEVELOPER:  Dibble & Associates, Inc.              DATE: June 30, 2006

                    IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.

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

    IT        HYDROGRAPH TIME DATA
                   NMIN          3  MINUTES IN COMPUTATION INTERVAL
                  IDATE      1   0  STARTING DATE
                  ITIME       0000  STARTING TIME
                     NQ        800  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE      2   0  ENDING DATE
                 NDTIME       1557  ENDING TIME
                  ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL     .05 HOURS
                   TOTAL TIME BASE   39.95 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


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


            **************
            *            *
270 KK      *     CP9B   *
            *            *
            **************

272 KO      OUTPUT CONTROL VARIABLES
                  IPRNT          5  PRINT CONTROL
                  IPLOT          0  PLOT CONTROL
                  QSCAL         0.  HYDROGRAPH PLOT SCALE
                  IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                   IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                  ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                  ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                 TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
289 KK      *     CP6B   *
            *            *
            **************

291 KO      OUTPUT CONTROL VARIABLES
                  IPRNT          5  PRINT CONTROL
                  IPLOT          0  PLOT CONTROL
                  QSCAL         0.  HYDROGRAPH PLOT SCALE
                  IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                   IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                  ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                  ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                 TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
293 KK      *      1N    *        BASIN
            *            *
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            **************

295 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
300 KK      *        4A  *        BASIN
            *            *
            **************

302 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
307 KK      *        2A  *        BASIN
            *            *
            **************

309 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
374 KK      *     CP4N1  *
            *            *
            **************

376 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
402 KK      *      CP4N  *
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          *            *
          **************

 404 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       .050  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION       STATION     FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                           1B1       553.    4.20         83.         21.         12.       .49
          ROUTED TO
+                         RT1112      428.    4.95         82.         21.         12.       .49
+                                                                                                  80.89       4.95

          HYDROGRAPH AT
+                           1B2       129.    4.45         22.          5.          3.       .16
          2 COMBINED AT
+                         CP1B2       500.    4.95        104.         26.         16.       .65
          HYDROGRAPH AT
+                           1B3       159.    4.15         24.          6.          4.       .13
          DIVERSION TO
+                          1B3R       158.    4.15         23.          6.          4.       .13
          HYDROGRAPH AT
+                          1B3L         2.    4.15          0.          0.          0.       .13
          ROUTED TO
+                         RT1314        0.    5.60          0.          0.          0.       .13
+                                                                                                  80.00       5.60

          HYDROGRAPH AT
+                           1B4       136.    4.30         22.          5.          3.       .14
          2 COMBINED AT
+                         CP1B4       136.    4.30         22.          5.          3.       .27
          2 COMBINED AT
+                         CP1214      553.    4.90        126.         32.         19.       .92
          ROUTED TO
+                         RT1452      534.    5.05        125.         32.         19.       .92
+                                                                                                  80.94       5.05

          HYDROGRAPH AT
+                           5B2       142.    4.25         23.          6.          3.       .12
          2 COMBINED AT
+                         CP5B2       567.    5.05        148.         37.         23.      1.05
          ROUTED TO
+                         RT529B      521.    5.45        148.         37.         23.      1.05
+                                                                                                  88.22       5.45

          HYDROGRAPH AT
+                           5B1       123.    4.20         19.          5.          3.       .10
          ROUTED TO
+                         RT519B       91.    4.75         19.          5.          3.       .10
+                                                                                                  87.68       4.75

          HYDROGRAPH AT
+                            9B       177.    4.35         29.          7.          4.       .20
          HYDROGRAPH AT
+                           8B1        86.    4.15         12.          3.          2.       .08
          ROUTED TO
+                         RT819B       86.    4.20         12.          3.          2.       .08
+                                                                                                  59.62       4.20
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          HYDROGRAPH AT
+                    4B1      306.   4.40      51.      13.       8.      .37
          ROUTED TO
+                 RT4142      285.   4.70      51.      13.       8.      .37
+                                                                        60.21      4.70
          HYDROGRAPH AT
+                    4B2      220.   4.30      33.       8.       5.      .24
          2 COMBINED AT
+                  CP4B2      439.   4.55      84.      21.      13.      .61
          ROUTED TO
+                 RT4282      427.   4.70      84.      21.      13.      .61
+                                                                        60.52      4.70
          HYDROGRAPH AT
+                    8B2       69.   4.15       9.       2.       1.      .06
          HYDROGRAPH AT
+                    2B1      531.   4.20      77.      19.      12.      .47
          ROUTED TO
+                 RT2122      479.   4.45      77.      19.      12.      .47
+                                                                      2701.83      4.45
          HYDROGRAPH AT
+                    2B2      486.   4.35      80.      20.      12.      .53
          HYDROGRAPH AT
+                    2B3      263.   4.25      41.      10.       6.      .26
          3 COMBINED AT
+                 CP2223     1200.   4.35     198.      49.      30.     1.26
          ROUTED TO
+                 RT2226     1176.   4.55     197.      49.      30.     1.26
+                                                                      2622.50      4.55
          HYDROGRAPH AT
+                    2B4      192.   4.35      32.       8.       5.      .21
          HYDROGRAPH AT
+                    2B5      170.   4.10      24.       6.       4.      .13
          2 COMBINED AT
+                 CP2425      331.   4.20      56.      14.       8.      .34
          ROUTED TO
+                 RT4526      296.   4.60      56.      14.       8.      .34
+                                                                      2621.93      4.60
          HYDROGRAPH AT
+                    2B6      353.   4.20      59.      15.       9.      .31
          3 COMBINED AT
+                  CP2B6     1721.   4.55     311.      78.      47.     1.91
          ROUTED TO
+                  RS2B6      700.   5.20     156.      42.      25.     1.91
+                                                                      2611.31      5.20
          ROUTED TO
+                 RT2631      688.   5.40     155.      42.      25.     1.91
+                                                                      2546.25      5.40
          HYDROGRAPH AT
+                    3B1       90.   4.25      14.       3.       2.      .10
          2 COMBINED AT
+                  CP3B1      693.   5.40     166.      45.      27.     2.01
          ROUTED TO
+                 RT3132      664.   5.65     165.      45.      27.     2.01
+                                                                        49.11      5.65
          HYDROGRAPH AT
+                    3B2      315.   4.35      53.      13.       8.      .34
          2 COMBINED AT
+                  CP3B2      676.   5.60     215.      58.      35.     2.35
          ROUTED TO
+                 RT3282      677.   5.65     215.      58.      35.     2.35
+                                                                      1460.33      5.65
```

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          3 COMBINED AT
+                      CP8B2      805.   5.60       308.       81.       49.      3.02
          ROUTED TO
+                     RT829B      804.   5.60       308.       81.       49.      3.02
+                                                                                          2407.78      5.60
          5 COMBINED AT
+                       CP9B     1356.   5.60       515.      134.       81.      4.44
          HYDROGRAPH AT
+                      1B36B      158.   4.15        23.        6.        4.       .00
          ROUTED TO
+                     RT136B      135.   4.80        23.        6.        4.       .00
+                                                                                            84.13      4.80
          HYDROGRAPH AT
+                         6B      206.   4.35        36.        9.        5.       .20
          2 COMBINED AT
+                       CP6B      283.   4.65        59.       15.        9.       .20
          HYDROGRAPH AT
+                         1N      201.   4.05        28.        7.        4.       .13
          HYDROGRAPH AT
+                         4A       89.   4.20        14.        3.        2.       .08
          HYDROGRAPH AT
+                         2A       38.   4.10         5.        1.        1.       .03
          HYDROGRAPH AT
+                         1S      248.   4.10        39.       10.        6.       .19
          ROUTED TO
+                     RT1S2S      229.   4.35        39.       10.        6.       .19
+                                                                                            92.94      4.35
          HYDROGRAPH AT
+                         2S      102.   4.15        14.        4.        2.       .09
          2 COMBINED AT
+                       CP2S      321.   4.25        53.       13.        8.       .28
          ROUTED TO
+                     RT2S3S      316.   4.40        53.       13.        8.       .28
+                                                                                            25.02      4.40
          HYDROGRAPH AT
+                         3S       96.   4.15        13.        3.        2.       .09
          2 COMBINED AT
+                       CP3S      393.   4.40        66.       17.       10.       .37
          ROUTED TO
+                     RT3S4N      392.   4.45        66.       17.       10.       .37
+                                                                                          2469.86      4.45
          HYDROGRAPH AT
+                         3N      134.   4.15        22.        6.        3.       .11
          ROUTED TO
+                     RT34N1      134.   4.20        22.        6.        3.       .11
+                                                                                          2540.43      4.20
          HYDROGRAPH AT
+                        4N1       57.   4.15         8.        2.        1.       .05
          2 COMBINED AT
+                       CP4N1      190.   4.20        30.        8.        5.       .16
          ROUTED TO
+                     RT4N14      178.   4.40        30.        8.        5.       .16
+                                                                                            70.14      4.40
          HYDROGRAPH AT
+                         2N      252.   4.15        39.       10.        6.       .20
          ROUTED TO
+                     RT2N4N      234.   4.40        39.       10.        6.       .20
+                                                                                            70.23      4.40
          HYDROGRAPH AT
+                         4N       97.   4.15        15.        4.        2.       .07
```

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        4 COMBINED AT
+                       CP4N      876.    4.40        149.        38.        23.        .81

 *** NORMAL END OF HEC-1 ***
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D.6.2 NORTH-SOUTH BASIN, WITH BLACK HILLS TANK

(B) 100-Year, 6-Hour Event, Future Condition Model

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *   U.S. ARMY CORPS OF ENGINEERS     *
 *              JUL   1997           *                    *   HYDROLOGIC ENGINEERING CENTER    *
 *           VERSION 4.1             *                    *         609 SECOND STREET          *
 *                                   *                    *      DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   05JUL06  TIME  12:06:01   *                    *         (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   Project ID: NS_6FC - Major Basin: 01 - Return Period: 100 Years
         2          ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NS_6FC.DAT
         3          ID   MODEL:       100-Year, 6-Hour Future Condition Model
         4          ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: June 30, 2006
         5          ID
         6          ID   IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.
         7          ID
                    *DIAGRAM
         8          IT       3                    800
         9          IO       5
        10          IN      15
                    *
                    *

        11          KK     1B1   BASIN
        12          BA   0.494
        13          KM   RAINFALL DEPTH OF 3.48 INCHES WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
        14          KM   AN AREAL REDUCTION COEFFICIENT OF 0.9658 WAS USED.
        15          PB   3.331
        16          PC   0.000   0.011   0.018   0.027   0.040   0.051   0.061   0.072   0.083   0.094
        17          PC   0.107   0.121   0.143   0.187   0.273   0.460   0.684   0.820   0.887   0.927
        18          PC   0.948   0.962   0.974   0.988   1.000
        19          LG    0.10    0.40    6.00    0.15      19
        20          UI      83     157     368     540     669     934     617     494     426     370
        21          UI     304     244     200     181     143     108      95      82      64      56
        22          UI      40      41      35      16      16      16      16      16      16      16
                    *

        23          KK  RT1112   ROUTE   REACH
        24          KM   ROUTE FLOW FROM 1B1 TO CP1B2
        25          RS       9    FLOW      -1
        26          RC   0.060   0.045   0.060   10466  0.0220   82.30
        27          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
        28          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

        29          KK     1B2   BASIN
        30          BA   0.161
        31          LG    0.10    0.38    5.60    0.18      15
        32          UI      15      15      22      47      64      88     101     112     129     159
        33          UI     172     115      98      89      82      76      71      62      59      52
        34          UI      44      39      37      35      32      28      24      20      20      17
                    *

        35          KK   CP1B2
        36          KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
        37          HC       2
                    *
```

```
 38          KK     1B3   BASIN
 39          BA   0.129
 40          LG    0.10    0.40    6.00    0.15      26
 41          UI      27      76     159     213     291     181     147     123      97      73
 42          UI      61      47      36      30      22      19      13      14       7       5
 43          UI       5       5       6       5       0       0       0       0       0       0
             *
1                                          HEC-1 INPUT                                          PAGE  2

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

 44          KK    1B3L
 45          KM   DIVERT FLOW FROM 1B3 TO CP6B
 46          DT    1B3R
 47          DI      25      75     150     300     400     600
 48          DQ      25      75     149     291     383     560
             *

 49          KK  RT1314   ROUTE   REACH
 50          KM   ROUTE FLOW FROM 1B3 TO CP1B4
 51          RS       6    FLOW      -1
 52          RC   0.045   0.040   0.045    7191  0.0225   82.30
 53          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
 54          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
             *

 55          KK     1B4   BASIN
 56          BA   0.141
 57          LG    0.10    0.39    5.80    0.16      15
 58          UI      17      18      51      82     110     130     152     204     146     111
 59          UI     101      89      81      71      62      51      44      41      37      30
 60          UI      25      22      19      19      13      14      11       8       9       8
             *

 61          KK   CP1B4
 62          KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
 63          HC       2
             *

 64          KK  CP1214
 65          KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
 66          HC       2
             *

 67          KK  RT1452   ROUTE   REACH
 68          KM   ROUTE FLOW FROM CP1214 TO CP5B2
 69          RS       3    FLOW      -1
 70          RC   0.050   0.050   0.050    2610  0.0207   82.30
 71          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
 72          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
             *

 73          KK     5B2   BASIN
 74          BA   0.124
 75          LG    0.10    0.35    7.00    0.10      15
 76          UI      18      26      65     104     130     158     206     134     108      96
 77          UI      86      72      63      50      43      39      32      26      22      20
 78          UI      15      14      12       9       9       9       5       3       4       3
 79          UI       4       3       4       3       4       0       0       0       0       0
 80          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

 81          KK   CP5B2
 82          KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
 83          HC       2
             *

 84          KK  RT529B   ROUTE   REACH
 85          KM   ROUTE FLOW FROM CP5B2 TO CP9B
 86          RS       6    FLOW      -1
 87          RC   0.045   0.040   0.045    5011  0.0216   92.00
 88          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
 89          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

 90          KK     5B1   BASIN
 91          BA   0.099
 92          LG    0.10    0.32    7.60    0.08      15
 93          UI      17      31      74     108     134     187     124      99      85      75
 94          UI      61      49      39      36      29      22      19      16      13      12
 95          UI       8       8       7       3       3       3       4       3       3       3
             *
```

```
 96          KK  RT519B   ROUTE   REACH
 97          KM   ROUTE FLOW FROM CP5B2 TO CP9B
 98          RS       3    FLOW      -1
 99          RC   0.050   0.050   0.050    5346  0.0213   92.00
100          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
101          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

102          KK      9B   BASIN
103          BA   0.200
104          LG    0.10    0.36    5.00    0.23      15
105          UI      23      24      56      98     136     162     184     236     256     167
106          UI     144     129     116     106      93      83      69      60      55      50
107          UI      44      37      30      28      25      22      18      18      14      12
108          UI      11      12      11       5       5       4       4       5       4       5
             *

109          KK     8B1   BASIN
110          BA   0.076
111          LG    0.10    0.36    5.00    0.23      15
112          UI      15      38      82     111     159     119      87      75      59      48
113          UI      37      32      25      18      17      12      10       7       7       5
114          UI       3       3       3       3       3       2       0       0       0       0
115          UI       0       0       0       0       0       0       0       0       0       0
             *

116          KK  RT819B   ROUTE   REACH
117          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
118          RS       3    FLOW      -1
119          RC   0.050   0.050   0.050     677  0.0177   64.70
120          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
121          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *
1                                          HEC-1 INPUT                                          PAGE  4

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

122          KK     4B1   BASIN
123          BA   0.368
124          LG    0.10    0.38    5.40    0.19      15
125          UI      37      38      70     128     189     235     270     302     372     442
126          UI     292     242     220     203     183     169     152     135     119      99
127          UI      91      87      80      67      60      48      47      41      40      31
             *

128          KK  RT4142   ROUTE   REACH
129          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
130          RS       4    FLOW      -1
131          RC   0.050   0.050   0.050    6204  0.0213   64.70
132          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
133          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

134          KK     4B2   BASIN
135          BA   0.240
136          LG    0.10    0.36    5.00    0.23      15
137          UI      32      38     106     165     217     253     327     334     217     188
138          UI     167     151     129     113      91      80      73      63      51      41
139          UI      38      35      26      25      21      15      16      16      11       6
             *

140          KK   CP4B2
141          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
142          HC       2
             *

143          KK  RT4282   ROUTE   REACH
144          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
145          RS       3    FLOW      -1
146          RC   0.050   0.050   0.050    3773  0.0217   64.70
147          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
148          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

149          KK     8B2   BASIN
150          BA   0.064
151          LG    0.10    0.36    5.00    0.23      15
152          UI      12      28      61      85     111     116      75      62      53      43
153          UI      34      28      24      18      15      12       9       9       6       6
154          UI       4       2       3       2       2       2       2       0       0       0
             *

155          KK     2B1   BASIN
156          BA   0.472
157          LG    0.10    0.40    6.00    0.15      16
```

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*
 158          UI      84     173     393     568     731     890     562     472     398     340
 159          UI     272     214     189     154     116      99      85      64      57      41
 160          UI      41      32      17      16      16      16      16      16      16       0
              *
1                                          HEC-1 INPUT                                          PAGE  5

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

 161          KK  RT2122   ROUTE   REACH
 162          KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
 163          RS       3    FLOW      -1
 164          RC   0.060   0.045   0.060    4909  0.0159 2708.00
 165          RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
 166          RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
              *

 167          KK     2B2   BASIN
 168          BA   0.533
 169          LG    0.10    0.39    5.70    0.17      16
 170          UI      60      60     138     237     339     404     462     556     708     476
 171          UI     383     344     313     286     256     230     195     168     149     138
 172          UI     127     103      90      76      70      65      56      46      46      38
              *

 173          KK     2B3   BASIN
 174          BA   0.259
 175          LG    0.10    0.40    6.00    0.15      15
 176          UI      35      40     115     178     234     273     353     360     234     204
 177          UI     180     163     140     120      99      86      79      68      55      44
 178          UI      40      39      28      26      23      17      17      17      12       7
              *

 179          KK  CP2223
 180          KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
 181          HC       3
              *

 182          KK  RT2226   ROUTE   REACH
 183          KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
 184          RS       6    FLOW      -1
 185          RC   0.050   0.040   0.050    4244  0.0118 2628.00
 186          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 187          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 188          KK     2B4   BASIN
 189          BA   0.212
 190          LG    0.10    0.40    6.00    0.15      15
 191          UI      24      24      54      95     134     162     183     222     281     189
 192          UI     153     136     125     114     102      92      77      67      58      56
 193          UI      50      41      36      30      28      26      22      19      18      15
              *

 194          KK     2B5   BASIN
 195          BA   0.125
 196          LG    0.10    0.37    6.60    0.12      22
 197          UI      30     106     201     284     250     171     136     107      76      64
 198          UI      45      35      27      20      15      14       6       6       5       6
 199          UI       6       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

 200          KK  CP2425
 201          KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
 202          HC       2
              *

 203          KK  RT4526   ROUTE   REACH
 204          KM   ROUTE FLOW FROM CP2425 TO CP2B6
 205          RS       4    FLOW      -1
 206          RC   0.060   0.045   0.060    4060  0.0113 2628.00
 207          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 208          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 209          KK     2B6   BASIN
 210          BA   0.308
 211          LG    0.10    0.38    6.40    0.13      28
 212          UI      49      85     201     308     382     512     451     312     264     236
 213          UI     198     167     129     116     101      78      63      55      47      37
 214          UI      33      25      24      24       9       9      10       9      10       9
              *
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215          KK   CP2B6
216          KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
217          HC       3
             *

218          KK   RS2B6
219          KM   STORAGE ROUTING AT BLACK HILLS TANK
220          RS       1    STOR       0
221          SV       0   2.016   6.358  12.613  21.211  32.542  47.126  65.725  88.983 117.210
222          SE    2594    2596    2598    2600    2602    2604    2606    2608    2610    2612
223          SQ       0    0.00    9.64   53.83  146.07  299.07  531.50  859.12 1286.00 1822.67
224          SE    2608 2608.55 2609.05 2609.55 2610.05 2610.55 2611.05 2611.55 2612.05 2612.55
             *

225          KK  RT2631   ROUTE   REACH
226          KM   ROUTE RS2B6 TO CP3B1
227          RS       4    FLOW      -1
228          RC   0.060   0.045   0.060    5540  0.0220 2556.00
229          RX     0.0    20.5    34.9    58.6    71.4    96.0   139.0   169.0
230          RY  2554.0  2550.0  2546.0  2543.0  2544.0  2548.0  2552.0  2556.0
             *

231          KK     3B1   BASIN
232          BA   0.098
233          LG    0.10    0.36    5.00    0.23      15
234          UI      13      15      44      67      89     103     134     136      88      77
235          UI      69      61      53      46      37      32      31      25      21      17
236          UI      15      15      10      10       9       6       7       7       4       3
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

237          KK   CP3B1
238          KM   COMBINE HYDROGRAPHS FROM 3B1 AND RT2631
239          HC       2
             *

240          KK  RT3132   ROUTE   REACH
241          KM   ROUTE FLOW FROM CP3B1 TO CP3B2
242          RS       4    FLOW      -1
243          RC   0.060   0.045   0.060    3657  0.0202   52.00
244          RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
245          RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
             *

246          KK     3B2   BASIN
247          BA   0.342
248          LG    0.10    0.39    5.70    0.17      18
249          UI      38      39      89     152     217     260     296     357     454     305
250          UI     246     220     202     183     164     149     124     108      96      88
251          UI      81      67      58      48      45      42      36      29      29      24
             *

252          KK   CP3B2
253          KM   COMBINE FLOW FROM RT3132 AND 3B2
254          HC       2
             *

255          KK  RT3282   ROUTE   REACH
256          KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
257          RS       9    FLOW      -1
258          RC   0.060   0.045   0.060     329  0.0213 2419.60
259          RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
260          RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
             *

261          KK   CP8B2
262          KM   COMBINE HYDROGRAPHS FROM 4B28B2 8B2 AND 3B28B2
263          HC       3
             *

264          KK  RT829B   ROUTE   REACH
265          KM   ROUTE FLOW FROM CP_8B2 TO CP_9B
266          RS       9    FLOW      -1
267          RC   0.060   0.045   0.060     507  0.0178 2410.00
268          RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
269          RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
             *

270          KK    CP9B
271          KM   COMBINE HYDROGRAPHS FROM 5BS9B, 5B19B, 9B,8B29B,AND 8B19B
272          KO                                      21
273          HC       5
             *
```

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

 274          KK   1B36B
 275          KM   RETRIEVE FLOW FROM 1B3
 276          DR    1B3R
              *

 277          KK  RT136B   ROUTE   REACH
 278          KM   ROUTE FLOW FROM 1B3 TO CP_6B
 279          RS      12    FLOW      -1
 280          RC   0.060   0.045   0.060    8533  0.0234   86.50
 281          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
 282          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
              *

 283          KK      6B   BASIN
 284          BA   0.204
 285          LG    0.10    0.36    6.80    0.11      18
 286          UI      23      23      53      91     129     155     177     213     270     182
 287          UI     147     132     120     109      98      88      75      64      57      53
 288          UI      48      40      35      28      27      25      22      18      17      15
              *

 289          KK    CP6B
 290          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
 291          KO                                   21
 292          HC       2
              *

 293          KK      1N   BASIN
 294          BA   0.131
 295          KO                                   21
 296          LG    0.10    0.39    6.20    0.14      40
 297          UI     106     378     477     273     173     113      65      42      27      12
 298          UI      11      11       0       0       0       0       0       0       0       0
 299          UI       0       0       0       0       0       0       0       0       0       0
              *

 300          KK      4A   BASIN
 301          BA   0.082
 302          KO                                   21
 303          LG    0.10    0.39    5.80    0.16      21
 304          UI      13      19      48      75      93     118     132      86      71      64
 305          UI      54      47      38      31      28      24      19      15      14      11
 306          UI      10       8       6       6       7       2       3       2       2       3
              *

 307          KK      2A   BASIN
 308          BA   0.031
 309          KO                                   21
 310          LG    0.10    0.39    6.20    0.14      15
 311          UI       7      18      38      51      70      44      35      29      24      17
 312          UI      15      11       9       7       5       5       3       3       2       1
 313          UI       1       2       1       1       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      1S   BASIN
 315          BA   0.188
 316          LG    0.10    0.39    6.20    0.14      37
 317          UI      42     132     263     359     417     257     213     170     128     100
 318          UI      82      58      48      36      29      21      21       9       8       8
 319          UI       8       8       8       0       0       0       0       0       0       0
              *

 320          KK  RT1S2S   ROUTE   REACH
 321          KM   ROUTE FLOW FROM 1S TO CP_2S
 322          RS       3    FLOW      -1
 323          RC   0.060   0.045   0.060    4833  0.0252  100.00
 324          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
 325          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
              *

 326          KK      2S   BASIN
 327          BA   0.092
 328          LG    0.10    0.38    5.60    0.18      16
 329          UI      17      39      88     122     161     167     107      90      77      61
 330          UI      49      41      34      25      21      18      14      12       8       9
 331          UI       6       3       3       3       3       4       3       0       0       0
              *

 332          KK    CP2S
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```
 333          KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
 334          HC       2
              *

 335          KK  RT2S3S   ROUTE   REACH
 336          KM   ROUTE FLOW FROM 2S TO CP_3S
 337          RS       5    FLOW      -1
 338          RC   0.050   0.050   0.050    2774  0.0231   29.10
 339          RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
 340          RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
              *

 341          KK      3S   BASIN
 342          BA   0.087
 343          LG    0.10    0.37    5.30    0.20      15
 344          UI      15      32      73     105     134     165     103      87      73      63
 345          UI      50      39      35      29      21      18      17      11      10       8
 346          UI       7       6       3       3       3       3       3       3       3       0
              *

 347          KK    CP3S
 348          KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
 349          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 350          KK  RT3S4N   ROUTE   REACH
 351          KM   ROUTE FLOW FROM CP3S TO CP4N
 352          RS       4    FLOW      -1
 353          RC   0.060   0.045   0.060    1040  0.0250 2472.00
 354          RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
 355          RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
              *
              *

 356          KK      3N   BASIN
 357          BA   0.110
 358          LG    0.10    0.39    6.20    0.14      35
 359          UI      19      41      91     133     170     207     132     110      93      79
 360          UI      63      50      44      36      27      23      20      15      13       9
 361          UI      10       7       4       4       4       4       3       4       4       0
              *

 362          KK  RT34N1   ROUTE   REACH
 363          KM   ROUTE FLOW FROM 3N TO CP_4N1
 364          RS       5    FLOW      -1
 365          RC   0.060   0.045   0.060     940  0.0277 2542.00
 366          RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
 367          RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
              *

 368          KK     4N1   BASIN
 369          BA   0.050
 370          LG    0.10    0.38    5.60    0.18      17
 371          UI      10      25      54      73     105      77      58      49      39      31
 372          UI      25      22      16      12      11       7       7       5       4       3
 373          UI       2       2       2       2       2       2       0       0       0       0
              *

 374          KK   CP4N1
 375          KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
 376          KO                                      21
 377          HC       2
              *

 378          KK  RT4N14   ROUTE   REACH
 379          KM   ROUTE FLOW FROM CP4N1 TO CP4N
 380          RS       3    FLOW      -1
 381          RC   0.060   0.045   0.060    3010  0.0239   72.70
 382          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
 383          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
              *

 384          KK      2N   BASIN
 385          BA   0.205
 386          LG    0.10    0.40    6.00    0.15      29
 387          UI      38      89     196     271     359     370     239     199     172     138
 388          UI     108      91      76      57      46      41      29      27      18      19
 389          UI      14       7       7       8       7       7       8       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 11

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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390          KK  RT2N4N   ROUTE   REACH
391          KM   ROUTE FLOW FROM 2N TO CP4N
392          RS       4    FLOW      -1
393          RC   0.060   0.045   0.060    3992  0.0256   72.70
394          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
395          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

396          KK      4N   BASIN
397          BA   0.074
398          LG    0.10    0.36    6.80    0.11      15
399          UI      15      36      81     108     155     115      85      73      58      46
400          UI      36      31      25      18      16      11      10       7       7       5
401          UI       3       2       3       3       3       2       0       0       0       0
             *

402          KK    CP4N
403          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
404          KO                                      21
405          HC       4
406          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   11         1B1
                V
                V
   23      RT1112
                .
                .
   29           .         1B2
                .           .
                .           .
   35       CP1B2............
                .
                .
   38           .         1B3
                .           .
                .           .
   46           .           .------->    1B3R
   44           .        1B3L
                .           V
                .           V
   49           .      RT1314
                .           .
                .           .
   55           .           .         1B4
                .           .           .
                .           .           .
   61           .       CP1B4............
                .           .
                .           .
   64      CP1214............
                V
                V
   67      RT1452
                .
                .
   73           .         5B2
                .           .
                .           .
   81       CP5B2............
                V
                V
   84      RT529B
                .
                .
   90           .         5B1
                .           V
                .           V
   96           .      RT519B
                .           .
                .           .
  102           .           .          9B
                .           .           .
                .           .           .
  109           .           .           .         8B1
                .           .           .           V
                .           .           .           V
  116           .           .           .      RT819B
                .           .           .           .
                .           .           .           .
```

```
122          .         .         .         .       4B1
             .         .         .         .         V
             .         .         .         .         V
128          .         .         .         .     RT4142
             .         .         .         .         .
             .         .         .         .         .
134          .         .         .         .         .       4B2
             .         .         .         .         .         .
             .         .         .         .         .         .
140          .         .         .         .     CP4B2...........
             .         .         .         .         V
             .         .         .         .         V
143          .         .         .         .     RT4282
             .         .         .         .         .
             .         .         .         .         .
149          .         .         .         .         .       8B2
             .         .         .         .         .         .
             .         .         .         .         .         .
155          .         .         .         .         .         .       2B1
             .         .         .         .         .         .         V
             .         .         .         .         .         .         V
161          .         .         .         .         .         .     RT2122
             .         .         .         .         .         .         .
             .         .         .         .         .         .         .
167          .         .         .         .         .         .         .       2B2
             .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .
173          .         .         .         .         .         .         .         .       2B3
             .         .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .         .
179          .         .         .         .         .         .     CP2223.......................
             .         .         .         .         .         .         V
             .         .         .         .         .         .         V
182          .         .         .         .         .         .     RT2226
             .         .         .         .         .         .         .
             .         .         .         .         .         .         .
188          .         .         .         .         .         .         .       2B4
             .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .
194          .         .         .         .         .         .         .         .       2B5
             .         .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .         .
200          .         .         .         .         .         .         .     CP2425...........
             .         .         .         .         .         .         .         V
             .         .         .         .         .         .         .         V
203          .         .         .         .         .         .         .     RT4526
             .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .
209          .         .         .         .         .         .         .         .       2B6
             .         .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .         .
215          .         .         .         .         .         .     CP2B6.......................
             .         .         .         .         .         .         V
             .         .         .         .         .         .         V
218          .         .         .         .         .         .     RS2B6
             .         .         .         .         .         .         V
             .         .         .         .         .         .         V
225          .         .         .         .         .         .     RT2631
             .         .         .         .         .         .         .
             .         .         .         .         .         .         .
231          .         .         .         .         .         .         .       3B1
             .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .
237          .         .         .         .         .         .     CP3B1...........
             .         .         .         .         .         .         V
             .         .         .         .         .         .         V
240          .         .         .         .         .         .     RT3132
             .         .         .         .         .         .         .
             .         .         .         .         .         .         .
246          .         .         .         .         .         .         .       3B2
             .         .         .         .         .         .         .         .
             .         .         .         .         .         .         .         .
252          .         .         .         .         .         .     CP3B2...........
             .         .         .         .         .         .         V
             .         .         .         .         .         .         V
255          .         .         .         .         .         .     RT3282
             .         .         .         .         .         .         .
             .         .         .         .         .         .         .
261          .         .         .         .     CP8B2.......................
             .         .         .         .         V
             .         .         .         .         V
264          .         .         .         .     RT829B
             .         .         .         .         .
             .         .         .         .         .
270       CP9B.............................................
             .
             .
```

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 276          .          .<-------    1B3R
 274          .      1B36B
              .          V
              .          V
 277          .     RT136B
              .          .
              .          .
 283          .          .          6B
              .          .           .
              .          .           .
 289          .      CP6B............
              .          .
              .          .
 293          .          .          1N
              .          .           .
              .          .           .
 300          .          .           .          4A
              .          .           .           .
              .          .           .           .
 307          .          .           .           .          2A
              .          .           .           .           .
              .          .           .           .           .
 314          .          .           .           .           .          1S
              .          .           .           .           .           V
              .          .           .           .           .           V
 320          .          .           .           .           .      RT1S2S
              .          .           .           .           .           .
              .          .           .           .           .           .
 326          .          .           .           .           .           .          2S
              .          .           .           .           .           .           .
              .          .           .           .           .           .           .
 332          .          .           .           .           .        CP2S............
              .          .           .           .           .           V
              .          .           .           .           .           V
 335          .          .           .           .           .      RT2S3S
              .          .           .           .           .           .
              .          .           .           .           .           .
 341          .          .           .           .           .           .          3S
              .          .           .           .           .           .           .
              .          .           .           .           .           .           .
 347          .          .           .           .           .        CP3S............
              .          .           .           .           .           V
              .          .           .           .           .           V
 350          .          .           .           .           .      RT3S4N
              .          .           .           .           .           .
              .          .           .           .           .           .
 356          .          .           .           .           .           .          3N
              .          .           .           .           .           .           V
              .          .           .           .           .           .           V
 362          .          .           .           .           .           .      RT34N1
              .          .           .           .           .           .           .
              .          .           .           .           .           .           .
 368          .          .           .           .           .           .           .          4N1
              .          .           .           .           .           .           .           .
              .          .           .           .           .           .           .           .
 374          .          .           .           .           .           .        CP4N1............
              .          .           .           .           .           .           V
              .          .           .           .           .           .           V
 378          .          .           .           .           .           .      RT4N14
              .          .           .           .           .           .           .
              .          .           .           .           .           .           .
 384          .          .           .           .           .           .           .          2N
              .          .           .           .           .           .           .           V
              .          .           .           .           .           .           .           V
 390          .          .           .           .           .           .           .      RT2N4N
              .          .           .           .           .           .           .           .
              .          .           .           .           .           .           .           .
 396          .          .           .           .           .           .           .           .          4N
              .          .           .           .           .           .           .           .           .
              .          .           .           .           .           .           .           .           .
 402          .          .           .           .           .        CP4N.................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUL   1997              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   05JUL06  TIME  12:06:01  *
 *                                      *
 ****************************************
```

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

```
                    Project ID: NS_6FC - Major Basin: 01 - Return Period: 100 Years
                    RIO VERDE AREA DRAINAGE MASTER PLAN                  FILE NAME: NS_6FC.DAT
                    MODEL:      100-Year, 6-Hour Future Condition Model
                    DEVELOPER:  Dibble & Associates, Inc.                DATE: June 30, 2006

                    IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.

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

    IT        HYDROGRAPH TIME DATA
                     NMIN          3  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        800  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       1557  ENDING TIME
                    ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL     .05 HOURS
                     TOTAL TIME BASE   39.95 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


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


                **************
                *            *
270 KK          *      CP9B  *
                *            *
                **************

272 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


                **************
                *            *
289 KK          *      CP6B  *
                *            *
                **************

291 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


                **************
                *            *
293 KK          *        1N  *        BASIN
                *            *
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            **************

295 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
300 KK      *        4A  *        BASIN
            *            *
            **************

302 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
307 KK      *        2A  *        BASIN
            *            *
            **************

309 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
374 KK      *     CP4N1  *
            *            *
            **************

376 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
402 KK      *      CP4N  *
```

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

 404 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION       STATION  FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                     6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                           1B1    631.    4.15        104.        26.         16.       .49
          ROUTED TO
+                         RT1112   510.    4.90        103.        26.         16.       .49
+                                                                                          80.98       4.90

          HYDROGRAPH AT
+                           1B2    156.    4.40         30.         7.          4.       .16
          2 COMBINED AT
+                         CP1B2    604.    4.85        131.        34.         20.       .65
          HYDROGRAPH AT
+                           1B3    181.    4.10         29.         7.          4.       .13
          DIVERSION TO
+                          1B3R    178.    4.10         29.         7.          4.       .13
          HYDROGRAPH AT
+                          1B3L      3.    4.10          0.         0.          0.       .13
          ROUTED TO
+                         RT1314      1.    5.55          0.         0.          0.       .13
+                                                                                          80.00       5.55

          HYDROGRAPH AT
+                           1B4    158.    4.25         28.         7.          4.       .14
          2 COMBINED AT
+                         CP1B4    158.    4.25         28.         7.          4.       .27
          2 COMBINED AT
+                         CP1214   677.    4.80        159.        41.         24.       .92
          ROUTED TO
+                         RT1452   660.    4.95        158.        41.         24.       .92
+                                                                                          81.05       4.95

          HYDROGRAPH AT
+                           5B2    158.    4.20         28.         7.          4.       .12
          2 COMBINED AT
+                         CP5B2    707.    4.95        185.        47.         29.      1.05
          ROUTED TO
+                         RT529B   674.    5.25        185.        47.         29.      1.05
+                                                                                          88.30       5.25

          HYDROGRAPH AT
+                           5B1    136.    4.15         23.         6.          3.       .10
          ROUTED TO
+                         RT519B   103.    4.70         23.         6.          3.       .10
+                                                                                          87.72       4.70

          HYDROGRAPH AT
+                            9B    208.    4.30         38.         9.          6.       .20
          HYDROGRAPH AT
+                           8B1     97.    4.10         14.         4.          2.       .08
          ROUTED TO
+                         RT819B     97.    4.15         14.         4.          2.       .08
+                                                                                          59.67       4.15
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          HYDROGRAPH AT
+                    4B1      370.   4.35      68.      17.      10.      .37
          ROUTED TO
+                 RT4142      349.   4.60      68.      17.      10.      .37
+                                                                      60.37      4.60
          HYDROGRAPH AT
+                    4B2      266.   4.25      45.      11.       7.      .24
          2 COMBINED AT
+                  CP4B2      545.   4.50     112.      28.      17.      .61
          ROUTED TO
+                 RT4282      535.   4.60     112.      28.      17.      .61
+                                                                      60.72      4.60
          HYDROGRAPH AT
+                    8B2       80.   4.15      12.       3.       2.      .06
          HYDROGRAPH AT
+                    2B1      609.   4.15      97.      24.      15.      .47
          ROUTED TO
+                 RT2122      551.   4.40      97.      24.      15.      .47
+                                                                    2701.96      4.40
          HYDROGRAPH AT
+                    2B2      568.   4.30     103.      26.      16.      .53
          HYDROGRAPH AT
+                    2B3      301.   4.25      52.      13.       8.      .26
          3 COMBINED AT
+                 CP2223     1394.   4.35     252.      63.      38.     1.26
          ROUTED TO
+                 RT2226     1371.   4.50     251.      63.      38.     1.26
+                                                                    2622.59      4.50
          HYDROGRAPH AT
+                    2B4      228.   4.30      42.      10.       6.      .21
          HYDROGRAPH AT
+                    2B5      184.   4.10      28.       7.       4.      .13
          2 COMBINED AT
+                 CP2425      386.   4.15      70.      18.      11.      .34
          ROUTED TO
+                 RT4526      347.   4.55      70.      18.      11.      .34
+                                                                    2621.99      4.55
          HYDROGRAPH AT
+                    2B6      404.   4.15      71.      18.      11.      .31
          3 COMBINED AT
+                  CP2B6     2004.   4.45     391.      99.      59.     1.91
          ROUTED TO
+                  RS2B6     1174.   5.00     237.      62.      37.     1.91
+                                                                    2611.92      5.00
          ROUTED TO
+                 RT2631     1149.   5.15     236.      62.      37.     1.91
+                                                                    2546.98      5.15
          HYDROGRAPH AT
+                    3B1      108.   4.25      18.       5.       3.      .10
          2 COMBINED AT
+                  CP3B1     1168.   5.10     251.      66.      40.     2.01
          ROUTED TO
+                 RT3132     1118.   5.35     250.      66.      40.     2.01
+                                                                      49.45      5.35
          HYDROGRAPH AT
+                    3B2      367.   4.30      67.      17.      10.      .34
          2 COMBINED AT
+                  CP3B2     1174.   5.30     312.      83.      50.     2.35
          ROUTED TO
+                 RT3282     1177.   5.30     312.      83.      50.     2.35
+                                                                    1473.36      5.30
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                3 COMBINED AT
+                          CP8B2     1431.   5.30      434.     115.      69.     3.02
                ROUTED TO
+                          RT829B    1423.   5.30      434.     115.      69.     3.02
+                                                                                          2408.49      5.30
                5 COMBINED AT
+                           CP9B     2193.   5.30      692.     181.     109.     4.44
                HYDROGRAPH AT
+                          1B36B      178.   4.10       29.       7.       4.      .00
                ROUTED TO
+                         RT136B      153.   4.75       29.       7.       4.      .00
+                                                                                           84.17      4.75
                HYDROGRAPH AT
+                             6B      233.   4.30       44.      11.       7.      .20
                2 COMBINED AT
+                           CP6B      325.   4.60       72.      18.      11.      .20
                HYDROGRAPH AT
+                             1N      217.   4.00       33.       8.       5.      .13
                HYDROGRAPH AT
+                             4A      101.   4.20       17.       4.       3.      .08
                HYDROGRAPH AT
+                             2A       43.   4.10        6.       2.       1.      .03
                HYDROGRAPH AT
+                             1S      277.   4.10       46.      12.       7.      .19
                ROUTED TO
+                          RT1S2S     258.   4.30       46.      12.       7.      .19
+                                                                                           93.02      4.30
                HYDROGRAPH AT
+                             2S      118.   4.15       18.       5.       3.      .09
                2 COMBINED AT
+                           CP2S      367.   4.25       64.      16.      10.      .28
                ROUTED TO
+                          RT2S3S     360.   4.40       64.      16.      10.      .28
+                                                                                           25.09      4.40
                HYDROGRAPH AT
+                             3S      109.   4.15       17.       4.       3.      .09
                2 COMBINED AT
+                           CP3S      451.   4.35       81.      20.      12.      .37
                ROUTED TO
+                          RT3S4N     449.   4.40       81.      20.      12.      .37
+                                                                                         2469.94      4.40
                HYDROGRAPH AT
+                             3N      151.   4.15       27.       7.       4.      .11
                ROUTED TO
+                          RT34N1     150.   4.20       27.       7.       4.      .11
+                                                                                         2540.49      4.20
                HYDROGRAPH AT
+                            4N1       66.   4.10       10.       3.       2.      .05
                2 COMBINED AT
+                           CP4N1      215.   4.15       37.       9.       6.      .16
                ROUTED TO
+                          RT4N14      201.   4.35       37.       9.       6.      .16
+                                                                                           70.19      4.35
                HYDROGRAPH AT
+                             2N      278.   4.15       47.      12.       7.      .20
                ROUTED TO
+                          RT2N4N     262.   4.35       47.      12.       7.      .20
+                                                                                           70.27      4.35
                HYDROGRAPH AT
+                             4N      103.   4.10       16.       4.       2.      .07
```

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          4 COMBINED AT
+                         CP4N       993.    4.35        180.        45.        27.        .81

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

D.6.2 NORTH-SOUTH BASIN, WITH BLACK HILLS TANK

(C) 100-Year, 24-Hour Event, Existing Condition Model

```
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS   *
 *              JUL   1997           *                                    *    HYDROLOGIC ENGINEERING CENTER  *
 *            VERSION 4.1            *                                    *          609 SECOND STREET        *
 *                                   *                                    *       DAVIS, CALIFORNIA 95616     *
 *  RUN DATE   01JUL06  TIME  10:32:25  *                                    *           (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   Project ID: NS_24EX - Major Basin: 01 - Return Period: 100 Years
          2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NS_24EX.DAT
          3           ID   MODEL:       100-Year, 24-Hour Existing Condition Model
          4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: June 30, 2006
          5           ID
          6           ID   IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.
          7           ID
                      *DIAGRAM
          8           IT       3                     800
          9           IO       5
         10           IN      15
                      *
                      *

         11           KK     1B1   BASIN
         12           BA   0.494
         13           KM   RAINFALL DEPTH OF 4.63 INCHES WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECO
         14           KM   AN AREAL REDUCTION COEFFICIENT OF 0.966 WAS USED.
         15           PB   4.472
         16           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
         17           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
         18           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
         19           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
         20           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
         21           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
         22           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
         23           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
         24           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
         25           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
         26           LG    0.15    0.40    6.00    0.18       4
         27           UI      76     120     286     453     560     709     798     514     429     383
         28           UI     330     279     228     191     169     142     112      95      83      69
         29           UI      58      50      37      37      37      16      15      14      15      15
                      *

         30           KK  RT1112   ROUTE   REACH
         31           KM   ROUTE FLOW FROM 1B1 TO CP1B2
         32           RS       9    FLOW      -1
         33           RC   0.060   0.045   0.060   10466  0.0220   82.30
         34           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
         35           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                      *

         36           KK     1B2   BASIN
         37           BA   0.161
         38           LG    0.15    0.38    5.60    0.22       0
         39           UI      14      13      14      37      51      68      84      93     103     115
         40           UI     141     162     112      93      81      79      71      68      62      56
         41           UI      53      48      42      36      34      32      31      29      23      22
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1                                        HEC-1 INPUT                                                    PAGE  2

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

        42          KK   CP1B2
        43          KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
        44          HC       2
                    *

        45          KK     1B3   BASIN
        46          BA   0.129
        47          LG    0.15    0.40    6.00    0.18      11
        48          UI      24      56     123     171     225     233     151     125     108      88
        49          UI      67      58      47      36      29      26      18      17      12      12
        50          UI       8       5       4       5       5       4       5       0       0       0
                    *

        51          KK    1B3L
        52          KM   DIVERT FLOW FROM 1B3 TO CP6B
        53          DT    1B3R
        54          DI      25      75     150     300     400     600
        55          DQ      25      75     149     291     383     560
                    *

        56          KK  RT1314   ROUTE   REACH
        57          KM   ROUTE FLOW FROM 1B3 TO CP1B4
        58          RS       6    FLOW      -1
        59          RC   0.045   0.040   0.045    7191  0.0225   82.30
        60          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
        61          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

        62          KK     1B4   BASIN
        63          BA   0.141
        64          LG    0.15    0.39    5.80    0.19       0
        65          UI      16      15      37      63      89     108     122     147     187     126
        66          UI     101      91      83      76      68      60      52      44      40      36
        67          UI      33      28      24      20      19      17      15      12      12      10
                    *

        68          KK   CP1B4
        69          KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
        70          HC       2
                    *

        71          KK  CP1214
        72          KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
        73          HC       2
                    *

        74          KK  RT1452   ROUTE   REACH
        75          KM   ROUTE FLOW FROM CP1214 TO CP5B2
        76          RS       3    FLOW      -1
        77          RC   0.050   0.050   0.050    2610  0.0207   82.30
        78          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
        79          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *
1                                        HEC-1 INPUT                                                    PAGE  3

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

        80          KK     5B2   BASIN
        81          BA   0.124
        82          LG    0.15    0.35    7.00    0.12       0
        83          UI      17      19      55      85     112     131     169     172     112      97
        84          UI      87      78      67      58      47      41      38      32      26      22
        85          UI      19      19      13      13      10       9       8       8       6       3
        86          UI       3       3       3       4       3       3       3       3       0       0
        87          UI       0       0       0       0       0       0       0       0       0       0
                    *

        88          KK   CP5B2
        89          KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
        90          HC       2
                    *

        91          KK  RT529B   ROUTE   REACH
        92          KM   ROUTE FLOW FROM CP5B2 TO CP9B
        93          RS       6    FLOW      -1
        94          RC   0.045   0.040   0.045    5011  0.0216   92.00
        95          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
        96          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
                    *
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 97          KK     5B1   BASIN
 98          BA   0.099
 99          LG    0.15    0.32    7.60    0.10       0
100          UI      15      24      57      91     113     141     161     103      85      77
101          UI      67      56      45      38      34      29      22      20      16      14
102          UI      11      11       7       7       7       4       3       3       3       3
             *

103          KK  RT519B   ROUTE   REACH
104          KM   ROUTE FLOW FROM CP5B2 TO CP9B
105          RS       3    FLOW      -1
106          RC   0.050   0.050   0.050    5346  0.0213   92.00
107          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
108          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

109          KK      9B   BASIN
110          BA   0.200
111          LG    0.14    0.36    5.00    0.27       2
112          UI      21      21      43      76     109     134     154     177     225     227
113          UI     152     129     120     110      97      90      81      70      60      53
114          UI      49      47      40      35      27      27      23      23      18      16
115          UI      17      13      10      10      11      10       7       4       4       4
             *

116          KK     8B1   BASIN
117          BA   0.076
118          LG    0.14    0.36    5.00    0.27       3
119          UI      14      33      73     100     133     137      89      74      64      51
120          UI      40      34      28      21      17      15      11      10       7       6
121          UI       5       3       3       3       2       3       3       0       0       0
1                                          HEC-1 INPUT                                          PAGE  4

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

122          UI       0       0       0       0       0       0       0       0       0       0
             *

123          KK  RT819B   ROUTE   REACH
124          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
125          RS       3    FLOW      -1
126          RC   0.050   0.050   0.050     677  0.0177   64.70
127          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
128          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

129          KK     4B1   BASIN
130          BA   0.368
131          LG    0.15    0.38    5.40    0.23       0
132          UI      33      34      44     102     139     189     219     245     272     331
133          UI     402     284     228     205     189     175     160     149     136     122
134          UI     108      94      84      80      75      71      57      53      43      43
             *

135          KK  RT4142   ROUTE   REACH
136          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
137          RS       4    FLOW      -1
138          RC   0.050   0.050   0.050    6204  0.0213   64.70
139          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
140          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

141          KK     4B2   BASIN
142          BA   0.240
143          LG    0.15    0.36    5.00    0.28       0
144          UI      29      29      77     126     177     208     238     316     278     198
145          UI     170     153     139     124     110      94      78      70      65      57
146          UI      47      38      36      32      29      22      22      19      14      14
             *

147          KK   CP4B2
148          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
149          HC       2
             *

150          KK  RT4282   ROUTE   REACH
151          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
152          RS       3    FLOW      -1
153          RC   0.050   0.050   0.050    3773  0.0217   64.70
154          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
155          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

156          KK     8B2   BASIN
157          BA   0.064
158          LG    0.15    0.36    5.00    0.27       1
159          UI      11      20      48      70      86     121      81      64      55      47
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 160          UI      40      31      26      24      18      14      12      11       8       8
 161          UI       5       6       4       2       2       2       2       2       2       2
              *
1                                          HEC-1 INPUT                                          PAGE  5

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

 162          KK     2B1   BASIN
 163          BA   0.472
 164          LG    0.15    0.40    6.00    0.18       1
 165          UI      75     130     308     473     584     786     690     478     406     360
 166          UI     305     256     196     178     156     119      97      83      72      58
 167          UI      51      37      37      36      14      15      14      15      14      15
              *

 168          KK  RT2122   ROUTE   REACH
 169          KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
 170          RS       3    FLOW      -1
 171          RC   0.060   0.045   0.060    4909  0.0159 2708.00
 172          RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
 173          RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
              *

 174          KK     2B2   BASIN
 175          BA   0.533
 176          LG    0.15    0.39    5.70    0.20       1
 177          UI      54      55     101     186     273     340     391     438     539     639
 178          UI     424     350     319     294     265     244     221     196     171     144
 179          UI     132     125     116      97      87      69      68      60      59      44
              *

 180          KK     2B3   BASIN
 181          BA   0.259
 182          LG    0.15    0.40    6.00    0.18       0
 183          UI      32      32      95     149     202     239     281     374     267     205
 184          UI     186     163     149     130     113      95      80      76      69      54
 185          UI      45      40      36      33      25      25      21      16      16      16
              *

 186          KK  CP2223
 187          KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
 188          HC       3
              *

 189          KK  RT2226   ROUTE   REACH
 190          KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
 191          RS       6    FLOW      -1
 192          RC   0.050   0.040   0.050    4244  0.0118 2628.00
 193          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 194          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 195          KK     2B4   BASIN
 196          BA   0.212
 197          LG    0.15    0.40    6.00    0.18       0
 198          UI      21      21      36      70     100     127     148     164     198     249
 199          UI     182     146     125     118     107      97      89      82      70      61
 200          UI      54      50      48      44      35      31      27      25      23      23
              *
1                                          HEC-1 INPUT                                          PAGE  6

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

 201          KK     2B5   BASIN
 202          BA   0.125
 203          LG    0.15    0.37    6.60    0.14       7
 204          UI      28      88     174     239     278     171     140     114      85      66
 205          UI      55      39      32      24      19      14      14       6       5       5
 206          UI       6       5       5       0       0       0       0       0       0       0
              *

 207          KK  CP2425
 208          KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
 209          HC       2
              *

 210          KK  RT4526   ROUTE   REACH
 211          KM   ROUTE FLOW FROM CP2425 TO CP2B6
 212          RS       4    FLOW      -1
 213          RC   0.060   0.045   0.060    4060  0.0113 2628.00
 214          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 215          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 216          KK     2B6   BASIN
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217          BA   0.308
218          LG    0.15    0.38    6.40    0.16      13
219          UI      43      57     147     235     300     349     489     368     273     241
220          UI     213     189     161     134     111     101      90      71      56      52
221          UI      47      36      33      29      21      21      21      13       8       9
             *

222          KK   CP2B6
223          KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
224          HC       3
             *

225          KK   RS2B6
226          KM   STORAGE ROUTING AT BLACK HILLS TANK
227          RS       1    STOR       0
228          SV       0   2.016   6.358  12.613  21.211  32.542  47.126  65.725  88.983 117.210
229          SE    2594    2596    2598    2600    2602    2604    2606    2608    2610    2612
230          SQ       0    0.00    9.64   53.83  146.07  299.07  531.50  859.12 1286.00 1822.67
231          SE    2608 2608.55 2609.05 2609.55 2610.05 2610.55 2611.05 2611.55 2612.05 2612.55
             *

232          KK  RT2631   ROUTE   REACH
233          KM   ROUTE RS2B6 TO CP3B1
234          RS       4    FLOW      -1
235          RC   0.060   0.045   0.060    5540  0.0220 2556.00
236          RX     0.0    20.5    34.9    58.6    71.4    96.0   139.0   169.0
237          RY  2554.0  2550.0  2546.0  2543.0  2544.0  2548.0  2552.0  2556.0
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

238          KK     3B1   BASIN
239          BA   0.098
240          LG    0.15    0.36    5.00    0.28       0
241          UI      12      11      32      51      73      85      97     129     113      81
242          UI      70      63      56      51      45      38      32      28      27      23
243          UI      19      16      15      13      11       9       9       8       6       6
             *

244          KK   CP3B1
245          KM   COMBINE HYDROGRAPHS FROM 3B1 AND RT2631
246          HC       2
             *

247          KK  RT3132   ROUTE   REACH
248          KM   ROUTE FLOW FROM CP3B1 TO CP3B2
249          RS       4    FLOW      -1
250          RC   0.060   0.045   0.060    3657  0.0202   52.00
251          RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
252          RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
             *

253          KK     3B2   BASIN
254          BA   0.342
255          LG    0.15    0.39    5.70    0.20       3
256          UI      35      34      66     119     175     218     252     280     346     410
257          UI     272     225     204     189     170     157     141     126     110      93
258          UI      84      80      75      62      56      45      43      38      38      28
             *

259          KK   CP3B2
260          KM   COMBINE FLOW FROM RT3132 AND 3B2
261          HC       2
             *

262          KK  RT3282   ROUTE   REACH
263          KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
264          RS       9    FLOW      -1
265          RC   0.060   0.045   0.060     329  0.0213 2419.60
266          RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
267          RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
             *

268          KK   CP8B2
269          KM   COMBINE HYDROGRAPHS FROM 4B28B2 8B2 AND 3B28B2
270          HC       3
             *

271          KK  RT829B   ROUTE   REACH
272          KM   ROUTE FLOW FROM CP_8B2 TO CP_9B
273          RS       9    FLOW      -1
274          RC   0.060   0.045   0.060     507  0.0178 2410.00
275          RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
276          RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
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1                                    HEC-1 INPUT                                    PAGE  8

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

   277          KK    CP9B
   278          KM   COMBINE HYDROGRAPHS FROM 5BS9B, 5B19B, 9B,8B29B,AND 8B19B
   279          KO                                      21
   280          HC       5
                *

   281          KK   1B36B
   282          KM   RETRIEVE FLOW FROM 1B3
   283          DR    1B3R
                *

   284          KK  RT136B   ROUTE   REACH
   285          KM   ROUTE FLOW FROM 1B3 TO CP_6B
   286          RS      12    FLOW      -1
   287          RC   0.060   0.045   0.060    8533  0.0234   86.50
   288          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
   289          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
                *

   290          KK      6B   BASIN
   291          BA   0.204
   292          LG    0.15    0.36    6.80    0.13       3
   293          UI      21      21      38      72     104     130     150     168     205     245
   294          UI     162     135     122     112     101      94      84      76      65      55
   295          UI      51      47      45      37      34      26      26      23      22      17
                *

   296          KK    CP6B
   297          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
   298          KO                                      21
   299          HC       2
                *

   300          KK      1N   BASIN
   301          BA   0.131
   302          KO                                      21
   303          LG    0.15    0.39    6.20    0.17      25
   304          UI      79     300     466     281     199     124      87      55      35      25
   305          UI      13       9      10       0       0       0       0       0       0       0
   306          UI       0       0       0       0       0       0       0       0       0       0
                *

   307          KK      4A   BASIN
   308          BA   0.082
   309          KO                                      21
   310          LG    0.15    0.39    5.80    0.19       6
   311          UI      11      15      40      62      81      92     130      98      73      64
   312          UI      57      50      43      36      29      27      24      19      15      14
   313          UI      13       9       9       7       6       5       6       3       3       2
                *
1                                    HEC-1 INPUT                                    PAGE  9

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

   314          KK      2A   BASIN
   315          BA   0.031
   316          KO                                      21
   317          LG    0.15    0.39    6.20    0.17       0
   318          UI       6      16      33      46      64      49      35      30      25      19
   319          UI      15      14      10       7       7       5       4       3       3       2
   320          UI       1       1       1       1       2       1       0       0       0       0
                *

   321          KK      1S   BASIN
   322          BA   0.188
   323          LG    0.15    0.39    6.20    0.17      22
   324          UI      38      94     203     275     393     293     216     184     148     117
   325          UI      92      80      60      46      41      29      25      19      18      11
   326          UI       7       7       8       7       7       7       0       0       0       0
                *

   327          KK  RT1S2S   ROUTE   REACH
   328          KM   ROUTE FLOW FROM 1S TO CP_2S
   329          RS       3    FLOW      -1
   330          RC   0.060   0.045   0.060    4833  0.0252  100.00
   331          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
   332          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
                *

   333          KK      2S   BASIN
   334          BA   0.092
```

```
 335          LG    0.15    0.38    5.60    0.22       1
 336          UI      16      28      69     101     124     174     115      92      79      70
 337          UI      56      46      36      34      27      20      18      15      12      11
 338          UI       7       8       7       2       3       3       3       3       3       3
              *

 339          KK    CP2S
 340          KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
 341          HC       2
              *

 342          KK  RT2S3S   ROUTE   REACH
 343          KM   ROUTE FLOW FROM 2S TO CP_3S
 344          RS       5    FLOW      -1
 345          RC   0.050   0.050   0.050    2774  0.0231   29.10
 346          RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
 347          RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
              *

 348          KK      3S   BASIN
 349          BA   0.087
 350          LG    0.14    0.37    5.30    0.24       2
 351          UI      14      28      65      95     118     165     108      87      75      65
 352          UI      54      43      35      32      26      18      17      15      11       9
 353          UI       7       7       7       2       3       3       3       3       3       3
              *
1                                                HEC-1 INPUT                                          PAGE 10

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

 354          KK    CP3S
 355          KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
 356          HC       2
              *

 357          KK  RT3S4N   ROUTE   REACH
 358          KM   ROUTE FLOW FROM CP3S TO CP4N
 359          RS       4    FLOW      -1
 360          RC   0.060   0.045   0.060    1040  0.0250 2472.00
 361          RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
 362          RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
              *
              *

 363          KK      3N   BASIN
 364          BA   0.110
 365          LG    0.15    0.39    6.20    0.17      20
 366          UI      17      31      72     110     136     183     161     111      95      84
 367          UI      71      59      46      42      36      28      22      20      17      13
 368          UI      12       8       9       8       4       3       4       3       3       4
              *

 369          KK  RT34N1   ROUTE   REACH
 370          KM   ROUTE FLOW FROM 3N TO CP4N1
 371          RS       5    FLOW      -1
 372          RC   0.060   0.045   0.060     940  0.0277 2542.00
 373          RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
 374          RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
              *

 375          KK     4N1   BASIN
 376          BA   0.050
 377          LG    0.15    0.38    5.60    0.22       2
 378          UI       9      18      42      60      78      94      59      50      43      35
 379          UI      29      23      20      16      13      10      10       6       6       4
 380          UI       4       4       1       2       2       1       2       2       2       0
              *

 381          KK   CP4N1
 382          KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
 383          KO                                      21
 384          HC       2
              *

 385          KK  RT4N14   ROUTE   REACH
 386          KM   ROUTE FLOW FROM CP4N1 TO CP4N
 387          RS       3    FLOW      -1
 388          RC   0.060   0.045   0.060    3010  0.0239   72.70
 389          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
 390          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
              *
1                                                HEC-1 INPUT                                          PAGE 11

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

```
391          KK      2N   BASIN
392          BA   0.205
393          LG    0.15    0.40    6.00    0.18      14
394          UI      36      76     171     246     318     386     245     204     173     148
395          UI     118      93      81      67      51      43      37      28      25      17
396          UI      18      14       7       7       7       7       7       7       7       0
             *

397          KK  RT2N4N   ROUTE   REACH
398          KM   ROUTE FLOW FROM 2N TO CP4N
399          RS       4    FLOW      -1
400          RC   0.060   0.045   0.060    3992  0.0256   72.70
401          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
402          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

403          KK      4N   BASIN
404          BA   0.074
405          LG    0.13    0.36    6.80    0.12       6
406          UI      14      31      72      97     130     134      86      71      63      50
407          UI      38      33      28      21      16      15      11       9       7       6
408          UI       5       3       3       2       3       2       3       0       0       0
             *

409          KK    CP4N
410          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
411          KO                                      21
412          HC       4
413          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   11         1B1
              V
              V
   30      RT1112
              .
              .
   36         .         1B2
              .           .
              .           .
   42       CP1B2............
              .
              .
   45         .         1B3
              .           .
              .           .
   53         .           .------->    1B3R
   51         .        1B3L
              .           V
              .           V
   56         .      RT1314
              .           .
              .           .
   62         .           .         1B4
              .           .           .
              .           .           .
   68         .       CP1B4............
              .           .
              .           .
   71      CP1214............
              V
              V
   74      RT1452
              .
              .
   80         .         5B2
              .           .
              .           .
   88       CP5B2............
              V
              V
   91      RT529B
              .
              .
   97         .         5B1
              .           V
              .           V
  103         .      RT519B
              .           .
              .           .
  109         .           .          9B
              .           .           .
```

```
116          8B1
               V
               V
123       RT819B
               .
               .
129               4B1
                    V
                    V
135            RT4142
                    .
                    .
141                       4B2
                            .
                            .
147            CP4B2............
                    V
                    V
150            RT4282
                    .
                    .
156                       8B2
                            .
                            .
162                            2B1
                                 V
                                 V
168                         RT2122
                                 .
                                 .
174                                     2B2
                                          .
                                          .
180                                              2B3
                                                   .
                                                   .
186                         CP2223.......................
                                 V
                                 V
189                         RT2226
                                 .
                                 .
195                                     2B4
                                          .
                                          .
201                                              2B5
                                                   .
                                                   .
207                                  CP2425............
                                          V
                                          V
210                                  RT4526
                                          .
                                          .
216                                              2B6
                                                   .
                                                   .
222                         CP2B6.......................
                                 V
                                 V
225                         RS2B6
                                 V
                                 V
232                         RT2631
                                 .
                                 .
238                                     3B1
                                          .
                                          .
244                         CP3B1............
                                 V
                                 V
247                         RT3132
                                 .
                                 .
253                                     3B2
                                          .
                                          .
259                         CP3B2............
                                 V
                                 V
262                         RT3282
                                 .
                                 .
268            CP8B2.......................
                    V
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                .          .          .          .          V
 271            .          .          .          .     RT829B
                .          .          .          .          .
                .          .          .          .          .
 277         CP9B.............................................
                .
                .
 283            .          .<-------    1B3R
 281            .      1B36B
                .          V
                .          V
 284            .     RT136B
                .          .
                .          .
 290            .          .          6B
                .          .          .
                .          .          .
 296            .       CP6B............
                .          .
                .          .
 300            .          .          1N
                .          .          .
                .          .          .
 307            .          .          .          4A
                .          .          .          .
                .          .          .          .
 314            .          .          .          .          2A
                .          .          .          .          .
                .          .          .          .          .
 321            .          .          .          .          .          1S
                .          .          .          .          .          V
                .          .          .          .          .          V
 327            .          .          .          .          .     RT1S2S
                .          .          .          .          .          .
                .          .          .          .          .          .
 333            .          .          .          .          .          .          2S
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
 339            .          .          .          .          .       CP2S............
                .          .          .          .          .          V
                .          .          .          .          .          V
 342            .          .          .          .          .     RT2S3S
                .          .          .          .          .          .
                .          .          .          .          .          .
 348            .          .          .          .          .          .          3S
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
 354            .          .          .          .          .       CP3S............
                .          .          .          .          .          V
                .          .          .          .          .          V
 357            .          .          .          .          .     RT3S4N
                .          .          .          .          .          .
                .          .          .          .          .          .
 363            .          .          .          .          .          .          3N
                .          .          .          .          .          .          V
                .          .          .          .          .          .          V
 369            .          .          .          .          .          .     RT34N1
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
 375            .          .          .          .          .          .          .        4N1
                .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .
 381            .          .          .          .          .          .      CP4N1............
                .          .          .          .          .          .          V
                .          .          .          .          .          .          V
 385            .          .          .          .          .          .     RT4N14
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
 391            .          .          .          .          .          .          .          2N
                .          .          .          .          .          .          .          V
                .          .          .          .          .          .          .          V
 397            .          .          .          .          .          .          .     RT2N4N
                .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .
 403            .          .          .          .          .          .          .          .          4N
                .          .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .          .
 409            .          .          .          .          .       CP4N.......................................
```

```
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   01JUL06  TIME  10:32:25  *                                    *          (916) 756-1104              *
```

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


                         Project ID: NS_24EX - Major Basin: 01 - Return Period: 100 Years
                         RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NS_24EX.DAT
                         MODEL:       100-Year, 24-Hour Existing Condition Model
                         DEVELOPER:  Dibble & Associates, Inc.                  DATE: June 30, 2006

                         IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.


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

   IT           HYDROGRAPH TIME DATA
                       NMIN           3  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        1557  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .05 HOURS
                      TOTAL TIME BASE   39.95 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


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


            **************
            *            *
277 KK      *      CP9B  *
            *            *
            **************

279 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
296 KK      *      CP6B  *
            *            *
            **************

298 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 300 KK     *        1N  *        BASIN
            *            *
            **************

 302 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 307 KK     *        4A  *        BASIN
            *            *
            **************

 309 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 314 KK     *        2A  *        BASIN
            *            *
            **************

 316 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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

            **************
            *            *
 381 KK     *     CP4N1  *
            *            *
            **************

 383 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS
```

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

            **************
            *            *
 409 KK     *      CP4N  *
            *            *
            **************

 411 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                     TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION        STATION   FLOW    PEAK                                            AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                            1B1     794.   12.15          84.         22.         13.        .49

          ROUTED TO
+                          RT1112     497.   12.90          83.         22.         13.        .49
+                                                                                                          80.96       12.90

          HYDROGRAPH AT
+                            1B2     167.   12.40          23.          6.          3.        .16

          2 COMBINED AT
+                          CP1B2     569.   12.90         106.         27.         16.        .65

          HYDROGRAPH AT
+                            1B3     235.   12.10          24.          6.          4.        .13

          DIVERSION TO
+                           1B3R     230.   12.10          23.          6.          4.        .13

          HYDROGRAPH AT
+                           1B3L       6.   12.10           0.          0.          0.        .13

          ROUTED TO
+                          RT1314       1.   13.55           0.          0.          0.        .13
+                                                                                                          80.01       13.55

          HYDROGRAPH AT
+                            1B4     183.   12.25          22.          6.          3.        .14

          2 COMBINED AT
+                          CP1B4     183.   12.25          22.          6.          3.        .27

          2 COMBINED AT
+                          CP1214     617.   12.85         128.         33.         20.        .92

          ROUTED TO
+                          RT1452     591.   13.05         128.         33.         20.        .92
+                                                                                                          80.99       13.05

          HYDROGRAPH AT
+                            5B2     193.   12.20          23.          6.          3.        .12

          2 COMBINED AT
+                          CP5B2     617.   13.00         150.         39.         23.       1.05

          ROUTED TO
+                          RT529B     563.   13.40         150.         39.         23.       1.05
+                                                                                                          88.25       13.40

          HYDROGRAPH AT
+                            5B1     170.   12.15          19.          5.          3.        .10

          ROUTED TO
+                          RT519B     100.   12.70          19.          5.          3.        .10
+                                                                                                          87.71       12.70

          HYDROGRAPH AT
+                             9B     239.   12.30          31.          8.          5.        .20
```

```
          HYDROGRAPH AT
+                    8B1      132.  12.10      12.      3.      2.     .08
          ROUTED TO
+                 RT819B      132.  12.15      12.      3.      2.     .08
+                                                                   59.81    12.15
          HYDROGRAPH AT
+                    4B1      401.  12.35      53.     13.      8.     .37
          ROUTED TO
+                 RT4142      355.  12.60      53.     13.      8.     .37
+                                                                   60.38    12.60
          HYDROGRAPH AT
+                    4B2      310.  12.25      35.      9.      5.     .24
          2 COMBINED AT
+                  CP4B2      505.  12.55      88.     22.     13.     .61
          ROUTED TO
+                 RT4282      490.  12.70      88.     22.     13.     .61
+                                                                   60.64    12.70
          HYDROGRAPH AT
+                    8B2      104.  12.15      10.      2.      1.     .06
          HYDROGRAPH AT
+                    2B1      776.  12.15      78.     20.     12.     .47
          ROUTED TO
+                 RT2122      620.  12.40      78.     20.     12.     .47
+                                                                 2702.08    12.40
          HYDROGRAPH AT
+                    2B2      645.  12.30      82.     21.     12.     .53
          HYDROGRAPH AT
+                    2B3      361.  12.20      41.     10.      6.     .26
          3 COMBINED AT
+                 CP2223     1552.  12.35     201.     51.     30.    1.26
          ROUTED TO
+                 RT2226     1498.  12.50     201.     51.     30.    1.26
+                                                                 2622.65    12.50
          HYDROGRAPH AT
+                    2B4      253.  12.30      33.      8.      5.     .21
          HYDROGRAPH AT
+                    2B5      257.  12.10      23.      6.      4.     .13
          2 COMBINED AT
+                 CP2425      436.  12.15      56.     14.      9.     .34
          ROUTED TO
+                 RT4526      349.  12.55      56.     14.      9.     .34
+                                                                 2621.99    12.55
          HYDROGRAPH AT
+                    2B6      483.  12.20      58.     16.     10.     .31
          3 COMBINED AT
+                  CP2B6     2090.  12.50     315.     81.     49.    1.91
          ROUTED TO
+                  RS2B6      761.  13.10     164.     44.     27.    1.91
+                                                                 2611.40    13.10
          ROUTED TO
+                 RT2631      743.  13.30     163.     44.     27.    1.91
+                                                                 2546.36    13.30
          HYDROGRAPH AT
+                    3B1      126.  12.25      14.      4.      2.     .10
          2 COMBINED AT
+                  CP3B1      751.  13.25     174.     48.     29.    2.01
          ROUTED TO
+                 RT3132      717.  13.50     173.     48.     29.    2.01
+                                                                   49.15    13.50
          HYDROGRAPH AT
+                    3B2      416.  12.30      54.     14.      8.     .34
```

```
          2 COMBINED AT
+                      CP3B2      722.  13.50      225.      61.      37.     2.35
          ROUTED TO
+                     RT3282      721.  13.50      225.      61.      37.     2.35
+                                                                        1463.24     13.50
          3 COMBINED AT
+                      CP8B2      869.  12.45      323.      86.      52.     3.02
          ROUTED TO
+                     RT829B      871.  13.50      323.      86.      52.     3.02
+                                                                        2407.87     13.50
          5 COMBINED AT
+                       CP9B     1478.  13.45      534.     140.      84.     4.44
          HYDROGRAPH AT
+                      1B36B      230.  12.10       23.       6.       4.      .00
          ROUTED TO
+                     RT136B      166.  12.75       23.       6.       4.      .00
+                                                                          84.20     12.75
          HYDROGRAPH AT
+                         6B      263.  12.30       36.       9.       5.      .20
          2 COMBINED AT
+                       CP6B      301.  12.65       59.      15.       9.      .20
          HYDROGRAPH AT
+                         1N      331.  12.05       27.       8.       5.      .13
          HYDROGRAPH AT
+                         4A      125.  12.20       14.       4.       2.      .08
          HYDROGRAPH AT
+                         2A       58.  12.10        5.       1.       1.      .03
          HYDROGRAPH AT
+                         1S      364.  12.10       38.      11.       7.      .19
          ROUTED TO
+                     RT1S2S      309.  12.30       38.      11.       7.      .19
+                                                                          93.17     12.30
          HYDROGRAPH AT
+                         2S      152.  12.15       15.       4.       2.      .09
          2 COMBINED AT
+                       CP2S      432.  12.25       53.      15.       9.      .28
          ROUTED TO
+                     RT2S3S      414.  12.35       53.      15.       9.      .28
+                                                                          25.16     12.35
          HYDROGRAPH AT
+                         3S      143.  12.15       14.       4.       2.      .09
          2 COMBINED AT
+                       CP3S      500.  12.35       67.      18.      11.      .37
          ROUTED TO
+                     RT3S4N      495.  12.40       67.      18.      11.      .37
+                                                                        2470.00     12.40
          HYDROGRAPH AT
+                         3N      189.  12.15       22.       6.       4.      .11
          ROUTED TO
+                     RT34N1      189.  12.20       22.       6.       4.      .11
+                                                                        2540.61     12.20
          HYDROGRAPH AT
+                        4N1       85.  12.15        8.       2.       1.      .05
          2 COMBINED AT
+                      CP4N1      269.  12.20       30.       8.       5.      .16
          ROUTED TO
+                     RT4N14      234.  12.35       30.       8.       5.      .16
+                                                                          70.24     12.35
          HYDROGRAPH AT
+                         2N      364.  12.15       39.      11.       6.      .20
```

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          ROUTED TO
+                        RT2N4N      312.   12.35        39.        11.        6.       .20
+                                                                                                  70.34      12.35

          HYDROGRAPH AT
+                            4N      140.   12.10        14.         4.        2.       .07

          4 COMBINED AT
+                          CP4N     1112.   12.35       150.        41.       25.       .81


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

D.6.2 NORTH-SOUTH BASIN, WITH BLACK HILLS TANK

(D) 100-Year, 24-Hour Event, Future Condition Model

```
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS    *
 *              JUL  1997            *                                    *   HYDROLOGIC ENGINEERING CENTER   *
 *           VERSION 4.1             *                                    *         609 SECOND STREET         *
 *                                   *                                    *      DAVIS, CALIFORNIA 95616      *
 *  RUN DATE   01JUL06  TIME  10:28:02  *                                    *          (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
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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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1                                                HEC-1 INPUT                                                    PAGE  1

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

         1          ID   Project ID: NS_24FC - Major Basin: 01 - Return Period: 100 Years
         2          ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: NS_24FC.DAT
         3          ID   MODEL:      100-Year, 24-Hour Future Condition Model
         4          ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: June 30, 2006
         5          ID
         6          ID   IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.
         7          ID
                    *DIAGRAM
         8          IT       3                    800
         9          IO       5
        10          IN      15
                    *
                    *

        11          KK     1B1   BASIN
        12          BA   0.494
        13          KM   RAINFALL DEPTH OF 4.63 INCHES WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECO
        14          KM   AN AREAL REDUCTION COEFFICIENT OF 0.966 WAS USED.
        15          PB   4.472
        16          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
        17          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
        18          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
        19          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
        20          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
        21          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
        22          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
        23          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
        24          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
        25          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
        26          LG    0.10    0.40    6.00    0.15      19
        27          UI      83     157     368     540     669     934     617     494     426     370
        28          UI     304     244     200     181     143     108      95      82      64      56
        29          UI      40      41      35      16      16      16      16      16      16      16
                    *

        30          KK  RT1112   ROUTE   REACH
        31          KM   ROUTE FLOW FROM 1B1 TO CP1B2
        32          RS       9    FLOW      -1
        33          RC   0.060   0.045   0.060   10466  0.0220   82.30
        34          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
        35          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

        36          KK     1B2   BASIN
        37          BA   0.161
        38          LG    0.10    0.38    5.60    0.18      15
        39          UI      15      15      22      47      64      88     101     112     129     159
        40          UI     172     115      98      89      82      76      71      62      59      52
        41          UI      44      39      37      35      32      28      24      20      20      17
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1                                        HEC-1 INPUT                                                    PAGE  2

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

     42             KK   CP1B2
     43             KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
     44             HC       2
                    *

     45             KK     1B3   BASIN
     46             BA   0.129
     47             LG    0.10    0.40    6.00    0.15      26
     48             UI      27      76     159     213     291     181     147     123      97      73
     49             UI      61      47      36      30      22      19      13      14       7       5
     50             UI       5       5       6       5       0       0       0       0       0       0
                    *

     51             KK    1B3L
     52             KM   DIVERT FLOW FROM 1B3 TO CP6B
     53             DT    1B3R
     54             DI      25      75     150     300     400     600
     55             DQ      25      75     149     291     383     560
                    *

     56             KK  RT1314   ROUTE   REACH
     57             KM   ROUTE FLOW FROM 1B3 TO CP1B4
     58             RS       6    FLOW      -1
     59             RC   0.045   0.040   0.045    7191  0.0225   82.30
     60             RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
     61             RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

     62             KK     1B4   BASIN
     63             BA   0.141
     64             LG    0.10    0.39    5.80    0.16      15
     65             UI      17      18      51      82     110     130     152     204     146     111
     66             UI     101      89      81      71      62      51      44      41      37      30
     67             UI      25      22      19      19      13      14      11       8       9       8
                    *

     68             KK   CP1B4
     69             KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
     70             HC       2
                    *

     71             KK  CP1214
     72             KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
     73             HC       2
                    *

     74             KK  RT1452   ROUTE   REACH
     75             KM   ROUTE FLOW FROM CP1214 TO CP5B2
     76             RS       3    FLOW      -1
     77             RC   0.050   0.050   0.050    2610  0.0207   82.30
     78             RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
     79             RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *
1                                        HEC-1 INPUT                                                    PAGE  3

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

     80             KK     5B2   BASIN
     81             BA   0.124
     82             LG    0.10    0.35    7.00    0.10      15
     83             UI      18      26      65     104     130     158     206     134     108      96
     84             UI      86      72      63      50      43      39      32      26      22      20
     85             UI      15      14      12       9       9       9       5       3       4       3
     86             UI       4       3       4       3       4       0       0       0       0       0
     87             UI       0       0       0       0       0       0       0       0       0       0
                    *

     88             KK   CP5B2
     89             KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
     90             HC       2
                    *

     91             KK  RT529B   ROUTE   REACH
     92             KM   ROUTE FLOW FROM CP5B2 TO CP9B
     93             RS       6    FLOW      -1
     94             RC   0.045   0.040   0.045    5011  0.0216   92.00
     95             RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
     96             RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
                    *
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 97          KK     5B1   BASIN
 98          BA   0.099
 99          LG    0.10    0.32    7.60    0.08      15
100          UI      17      31      74     108     134     187     124      99      85      75
101          UI      61      49      39      36      29      22      19      16      13      12
102          UI       8       8       7       3       3       3       4       3       3       3
             *

103          KK  RT519B   ROUTE   REACH
104          KM   ROUTE FLOW FROM CP5B2 TO CP9B
105          RS       3    FLOW      -1
106          RC   0.050   0.050   0.050    5346  0.0213   92.00
107          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
108          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

109          KK      9B   BASIN
110          BA   0.200
111          LG    0.10    0.36    5.00    0.23      15
112          UI      23      24      56      98     136     162     184     236     256     167
113          UI     144     129     116     106      93      83      69      60      55      50
114          UI      44      37      30      28      25      22      18      18      14      12
115          UI      11      12      11       5       5       4       4       5       4       5
             *

116          KK     8B1   BASIN
117          BA   0.076
118          LG    0.10    0.36    5.00    0.23      15
119          UI      15      38      82     111     159     119      87      75      59      48
120          UI      37      32      25      18      17      12      10       7       7       5
121          UI       3       3       3       3       3       2       0       0       0       0
1                                                HEC-1 INPUT                                          PAGE  4

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

122          UI       0       0       0       0       0       0       0       0       0       0
             *

123          KK  RT819B   ROUTE   REACH
124          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
125          RS       3    FLOW      -1
126          RC   0.050   0.050   0.050     677  0.0177   64.70
127          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
128          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

129          KK     4B1   BASIN
130          BA   0.368
131          LG    0.10    0.38    5.40    0.19      15
132          UI      37      38      70     128     189     235     270     302     372     442
133          UI     292     242     220     203     183     169     152     135     119      99
134          UI      91      87      80      67      60      48      47      41      40      31
             *

135          KK  RT4142   ROUTE   REACH
136          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
137          RS       4    FLOW      -1
138          RC   0.050   0.050   0.050    6204  0.0213   64.70
139          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
140          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

141          KK     4B2   BASIN
142          BA   0.240
143          LG    0.10    0.36    5.00    0.23      15
144          UI      32      38     106     165     217     253     327     334     217     188
145          UI     167     151     129     113      91      80      73      63      51      41
146          UI      38      35      26      25      21      15      16      16      11       6
             *

147          KK   CP4B2
148          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
149          HC       2
             *

150          KK  RT4282   ROUTE   REACH
151          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
152          RS       3    FLOW      -1
153          RC   0.050   0.050   0.050    3773  0.0217   64.70
154          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
155          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

156          KK     8B2   BASIN
157          BA   0.064
158          LG    0.10    0.36    5.00    0.23      15
159          UI      12      28      61      85     111     116      75      62      53      43
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 160          UI      34      28      24      18      15      12       9       9       6       6
 161          UI       4       2       3       2       2       2       2       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE  5

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

 162          KK     2B1   BASIN
 163          BA   0.472
 164          LG    0.10    0.40    6.00    0.15      16
 165          UI      84     173     393     568     731     890     562     472     398     340
 166          UI     272     214     189     154     116      99      85      64      57      41
 167          UI      41      32      17      16      16      16      16      16      16       0
              *

 168          KK  RT2122   ROUTE   REACH
 169          KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
 170          RS       3    FLOW      -1
 171          RC   0.060   0.045   0.060    4909  0.0159 2708.00
 172          RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
 173          RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
              *

 174          KK     2B2   BASIN
 175          BA   0.533
 176          LG    0.10    0.39    5.70    0.17      16
 177          UI      60      60     138     237     339     404     462     556     708     476
 178          UI     383     344     313     286     256     230     195     168     149     138
 179          UI     127     103      90      76      70      65      56      46      46      38
              *

 180          KK     2B3   BASIN
 181          BA   0.259
 182          LG    0.10    0.40    6.00    0.15      15
 183          UI      35      40     115     178     234     273     353     360     234     204
 184          UI     180     163     140     120      99      86      79      68      55      44
 185          UI      40      39      28      26      23      17      17      17      12       7
              *

 186          KK  CP2223
 187          KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
 188          HC       3
              *

 189          KK  RT2226   ROUTE   REACH
 190          KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
 191          RS       6    FLOW      -1
 192          RC   0.050   0.040   0.050    4244  0.0118 2628.00
 193          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 194          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 195          KK     2B4   BASIN
 196          BA   0.212
 197          LG    0.10    0.40    6.00    0.15      15
 198          UI      24      24      54      95     134     162     183     222     281     189
 199          UI     153     136     125     114     102      92      77      67      58      56
 200          UI      50      41      36      30      28      26      22      19      18      15
              *
1                                          HEC-1 INPUT                                          PAGE  6

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

 201          KK     2B5   BASIN
 202          BA   0.125
 203          LG    0.10    0.37    6.60    0.12      22
 204          UI      30     106     201     284     250     171     136     107      76      64
 205          UI      45      35      27      20      15      14       6       6       5       6
 206          UI       6       0       0       0       0       0       0       0       0       0
              *

 207          KK  CP2425
 208          KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
 209          HC       2
              *

 210          KK  RT4526   ROUTE   REACH
 211          KM   ROUTE FLOW FROM CP2425 TO CP2B6
 212          RS       4    FLOW      -1
 213          RC   0.060   0.045   0.060    4060  0.0113 2628.00
 214          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
 215          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
              *

 216          KK     2B6   BASIN
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```
217          BA   0.308
218          LG    0.10    0.38    6.40    0.13      28
219          UI      49      85     201     308     382     512     451     312     264     236
220          UI     198     167     129     116     101      78      63      55      47      37
221          UI      33      25      24      24       9       9      10       9      10       9
             *

222          KK   CP2B6
223          KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
224          HC       3
             *

225          KK   RS2B6
226          KM   STORAGE ROUTING AT BLACK HILLS TANK
227          RS       1    STOR       0
228          SV       0   2.016   6.358  12.613  21.211  32.542  47.126  65.725  88.983 117.210
229          SE    2594    2596    2598    2600    2602    2604    2606    2608    2610    2612
230          SQ       0    0.00    9.64   53.83  146.07  299.07  531.50  859.12 1286.00 1822.67
231          SE    2608 2608.55 2609.05 2609.55 2610.05 2610.55 2611.05 2611.55 2612.05 2612.55
             *

232          KK  RT2631   ROUTE   REACH
233          KM   ROUTE RS2B6 TO CP3B1
234          RS       4    FLOW      -1
235          RC   0.060   0.045   0.060    5540  0.0220 2556.00
236          RX     0.0    20.5    34.9    58.6    71.4    96.0   139.0   169.0
237          RY  2554.0  2550.0  2546.0  2543.0  2544.0  2548.0  2552.0  2556.0
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

238          KK     3B1   BASIN
239          BA   0.098
240          LG    0.10    0.36    5.00    0.23      15
241          UI      13      15      44      67      89     103     134     136      88      77
242          UI      69      61      53      46      37      32      31      25      21      17
243          UI      15      15      10      10       9       6       7       7       4       3
             *

244          KK   CP3B1
245          KM   COMBINE HYDROGRAPHS FROM 3B1 AND RT2631
246          HC       2
             *

247          KK  RT3132   ROUTE   REACH
248          KM   ROUTE FLOW FROM CP3B1 TO CP3B2
249          RS       4    FLOW      -1
250          RC   0.060   0.045   0.060    3657  0.0202   52.00
251          RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
252          RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
             *

253          KK     3B2   BASIN
254          BA   0.342
255          LG    0.10    0.39    5.70    0.17      18
256          UI      38      39      89     152     217     260     296     357     454     305
257          UI     246     220     202     183     164     149     124     108      96      88
258          UI      81      67      58      48      45      42      36      29      29      24
             *

259          KK   CP3B2
260          KM   COMBINE FLOW FROM RT3132 AND 3B2
261          HC       2
             *

262          KK  RT3282   ROUTE   REACH
263          KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
264          RS       9    FLOW      -1
265          RC   0.060   0.045   0.060     329  0.0213 2419.60
266          RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
267          RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
             *

268          KK   CP8B2
269          KM   COMBINE HYDROGRAPHS FROM 4B28B2 8B2 AND 3B28B2
270          HC       3
             *

271          KK  RT829B   ROUTE   REACH
272          KM   ROUTE FLOW FROM CP_8B2 TO CP_9B
273          RS       9    FLOW      -1
274          RC   0.060   0.045   0.060     507  0.0178 2410.00
275          RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
276          RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
             *
```

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1                                          HEC-1 INPUT                                                    PAGE  8

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

   277          KK    CP9B
   278          KM   COMBINE HYDROGRAPHS FROM 5BS9B, 5B19B, 9B,8B29B,AND 8B19B
   279          KO                                      21
   280          HC       5
                *

   281          KK   1B36B
   282          KM   RETRIEVE FLOW FROM 1B3
   283          DR    1B3R
                *

   284          KK  RT136B   ROUTE   REACH
   285          KM   ROUTE FLOW FROM 1B3 TO CP_6B
   286          RS      12    FLOW      -1
   287          RC   0.060   0.045   0.060    8533  0.0234   86.50
   288          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
   289          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
                *

   290          KK      6B   BASIN
   291          BA   0.204
   292          LG    0.10    0.36    6.80    0.11      18
   293          UI      23      23      53      91     129     155     177     213     270     182
   294          UI     147     132     120     109      98      88      75      64      57      53
   295          UI      48      40      35      28      27      25      22      18      17      15
                *

   296          KK    CP6B
   297          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
   298          KO                                      21
   299          HC       2
                *

   300          KK      1N   BASIN
   301          BA   0.131
   302          KO                                      21
   303          LG    0.10    0.39    6.20    0.14      40
   304          UI     106     378     477     273     173     113      65      42      27      12
   305          UI      11      11       0       0       0       0       0       0       0       0
   306          UI       0       0       0       0       0       0       0       0       0       0
                *

   307          KK      4A   BASIN
   308          BA   0.082
   309          KO                                      21
   310          LG    0.10    0.39    5.80    0.16      21
   311          UI      13      19      48      75      93     118     132      86      71      64
   312          UI      54      47      38      31      28      24      19      15      14      11
   313          UI      10       8       6       6       7       2       3       2       2       3
                *
1                                          HEC-1 INPUT                                                    PAGE  9

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

   314          KK      2A   BASIN
   315          BA   0.031
   316          KO                                      21
   317          LG    0.10    0.39    6.20    0.14      15
   318          UI       7      18      38      51      70      44      35      29      24      17
   319          UI      15      11       9       7       5       5       3       3       2       1
   320          UI       1       2       1       1       0       0       0       0       0       0
                *

   321          KK      1S   BASIN
   322          BA   0.188
   323          LG    0.10    0.39    6.20    0.14      37
   324          UI      42     132     263     359     417     257     213     170     128     100
   325          UI      82      58      48      36      29      21      21       9       8       8
   326          UI       8       8       8       0       0       0       0       0       0       0
                *

   327          KK  RT1S2S   ROUTE   REACH
   328          KM   ROUTE FLOW FROM 1S TO CP_2S
   329          RS       3    FLOW      -1
   330          RC   0.060   0.045   0.060    4833  0.0252  100.00
   331          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
   332          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
                *

   333          KK      2S   BASIN
   334          BA   0.092
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335          LG    0.10    0.38    5.60    0.18      16
336          UI      17      39      88     122     161     167     107      90      77      61
337          UI      49      41      34      25      21      18      14      12       8       9
338          UI       6       3       3       3       3       4       3       0       0       0
             *

339          KK    CP2S
340          KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
341          HC       2
             *

342          KK  RT2S3S   ROUTE   REACH
343          KM   ROUTE FLOW FROM 2S TO CP_3S
344          RS       5    FLOW      -1
345          RC   0.050   0.050   0.050    2774  0.0231   29.10
346          RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
347          RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
             *

348          KK      3S   BASIN
349          BA   0.087
350          LG    0.10    0.37    5.30    0.20      15
351          UI      15      32      73     105     134     165     103      87      73      63
352          UI      50      39      35      29      21      18      17      11      10       8
353          UI       7       6       3       3       3       3       3       3       3       0
             *
1                                                HEC-1 INPUT                                          PAGE 10

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

354          KK    CP3S
355          KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
356          HC       2
             *

357          KK  RT3S4N   ROUTE   REACH
358          KM   ROUTE FLOW FROM CP3S TO CP4N
359          RS       4    FLOW      -1
360          RC   0.060   0.045   0.060    1040  0.0250 2472.00
361          RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
362          RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
             *
             *

363          KK      3N   BASIN
364          BA   0.110
365          LG    0.10    0.39    6.20    0.14      35
366          UI      19      41      91     133     170     207     132     110      93      79
367          UI      63      50      44      36      27      23      20      15      13       9
368          UI      10       7       4       4       4       4       3       4       4       0
             *

369          KK  RT34N1   ROUTE   REACH
370          KM   ROUTE FLOW FROM 3N TO CP_4N1
371          RS       5    FLOW      -1
372          RC   0.060   0.045   0.060     940  0.0277 2542.00
373          RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
374          RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
             *

375          KK     4N1   BASIN
376          BA   0.050
377          LG    0.10    0.38    5.60    0.18      17
378          UI      10      25      54      73     105      77      58      49      39      31
379          UI      25      22      16      12      11       7       7       5       4       3
380          UI       2       2       2       2       2       2       0       0       0       0
             *

381          KK   CP4N1
382          KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
383          KO                                      21
384          HC       2
             *

385          KK  RT4N14   ROUTE   REACH
386          KM   ROUTE FLOW FROM CP4N1 TO CP4N
387          RS       3    FLOW      -1
388          RC   0.060   0.045   0.060    3010  0.0239   72.70
389          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
390          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *
1                                                HEC-1 INPUT                                          PAGE 11

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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391          KK      2N   BASIN
392          BA   0.205
393          LG    0.10    0.40    6.00    0.15      29
394          UI      38      89     196     271     359     370     239     199     172     138
395          UI     108      91      76      57      46      41      29      27      18      19
396          UI      14       7       7       8       7       7       8       0       0       0
             *

397          KK  RT2N4N   ROUTE   REACH
398          KM   ROUTE FLOW FROM 2N TO CP_4N
399          RS       4    FLOW      -1
400          RC   0.060   0.045   0.060    3992  0.0256   72.70
401          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
402          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

403          KK      4N   BASIN
404          BA   0.074
405          LG    0.10    0.36    6.80    0.11      15
406          UI      15      36      81     108     155     115      85      73      58      46
407          UI      36      31      25      18      16      11      10       7       7       5
408          UI       3       2       3       3       3       2       0       0       0       0
             *

409          KK    CP4N
410          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
411          KO                                      21
412          HC       4
413          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   11         1B1
               V
               V
   30       RT1112
               .
               .
   36          .         1B2
               .           .
               .           .
   42        CP1B2............
               .
               .
   45          .         1B3
               .           .
               .           .
   53          .           .------->    1B3R
   51          .        1B3L
               .           V
               .           V
   56          .      RT1314
               .           .
               .           .
   62          .           .         1B4
               .           .           .
               .           .           .
   68          .       CP1B4............
               .           .
               .           .
   71       CP1214...........
               V
               V
   74       RT1452
               .
               .
   80          .         5B2
               .           .
               .           .
   88        CP5B2............
               V
               V
   91       RT529B
               .
               .
   97          .         5B1
               .           V
               .           V
  103          .      RT519B
               .           .
               .           .
  109          .           .          9B
               .           .           .
```

```
116          8B1
               V
               V
123        RT819B

129                  4B1
                       V
                       V
135                RT4142

141                            4B2

147                CP4B2............
                       V
                       V
150                RT4282

156                            8B2

162                                     2B1
                                          V
                                          V
168                                   RT2122

174                                                   2B2

180                                                              2B3

186                                   CP2223........................
                                          V
                                          V
189                                   RT2226

195                                                   2B4

201                                                              2B5

207                                                CP2425............
                                                       V
                                                       V
210                                                RT4526

216                                                              2B6

222                                    CP2B6........................
                                          V
                                          V
225                                    RS2B6
                                          V
                                          V
232                                   RT2631

238                                                   3B1

244                                    CP3B1............
                                          V
                                          V
247                                   RT3132

253                                                   3B2

259                                    CP3B2............
                                          V
                                          V
262                                   RT3282

268                CP8B2........................
                       V
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                .          .          .          .          V
  271           .          .          .          .       RT829B
                .          .          .          .          .
                .          .          .          .          .
  277        CP9B.............................................
                .
                .
  283           .          .<-------    1B3R
  281           .       1B36B
                .          V
                .          V
  284           .      RT136B
                .          .
                .          .
  290           .          .          6B
                .          .           .
                .          .           .
  296           .       CP6B............
                .          .
                .          .
  300           .          .          1N
                .          .           .
                .          .           .
  307           .          .           .          4A
                .          .           .           .
                .          .           .           .
  314           .          .           .           .          2A
                .          .           .           .           .
                .          .           .           .           .
  321           .          .           .           .           .         1S
                .          .           .           .           .          V
                .          .           .           .           .          V
  327           .          .           .           .           .     RT1S2S
                .          .           .           .           .          .
                .          .           .           .           .          .
  333           .          .           .           .           .          .          2S
                .          .           .           .           .          .           .
                .          .           .           .           .          .           .
  339           .          .           .           .           .       CP2S............
                .          .           .           .           .          V
                .          .           .           .           .          V
  342           .          .           .           .           .     RT2S3S
                .          .           .           .           .          .
                .          .           .           .           .          .
  348           .          .           .           .           .          .          3S
                .          .           .           .           .          .           .
                .          .           .           .           .          .           .
  354           .          .           .           .           .       CP3S............
                .          .           .           .           .          V
                .          .           .           .           .          V
  357           .          .           .           .           .     RT3S4N
                .          .           .           .           .          .
                .          .           .           .           .          .
  363           .          .           .           .           .          .          3N
                .          .           .           .           .          .           V
                .          .           .           .           .          .           V
  369           .          .           .           .           .          .      RT34N1
                .          .           .           .           .          .          .
                .          .           .           .           .          .          .
  375           .          .           .           .           .          .          .         4N1
                .          .           .           .           .          .          .          .
                .          .           .           .           .          .          .          .
  381           .          .           .           .           .          .       CP4N1............
                .          .           .           .           .          .           V
                .          .           .           .           .          .           V
  385           .          .           .           .           .          .      RT4N14
                .          .           .           .           .          .          .
                .          .           .           .           .          .          .
  391           .          .           .           .           .          .          .          2N
                .          .           .           .           .          .          .           V
                .          .           .           .           .          .          .           V
  397           .          .           .           .           .          .          .      RT2N4N
                .          .           .           .           .          .          .          .
                .          .           .           .           .          .          .          .
  403           .          .           .           .           .          .          .          .          4N
                .          .           .           .           .          .          .          .           .
                .          .           .           .           .          .          .          .           .
  409           .          .           .           .           .       CP4N.......................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.1                *                    *         609 SECOND STREET            *
 *                                      *                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   01JUL06  TIME  10:28:02  *                    *          (916) 756-1104              *
```

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

                    Project ID: NS_24FC - Major Basin: 01 - Return Period: 100 Years
                    RIO VERDE AREA DRAINAGE MASTER PLAN                 FILE NAME: NS_24FC.DAT
                    MODEL:      100-Year, 24-Hour Future Condition Model
                    DEVELOPER:  Dibble & Associates, Inc.               DATE: June 30, 2006

                    IMPORTANT NOTE: This model assumes that the Black Hills Tank is not breached.

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

    IT        HYDROGRAPH TIME DATA
                     NMIN          3  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        800  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2    0  ENDING DATE
                   NDTIME       1557  ENDING TIME
                    ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL     .05 HOURS
                   TOTAL TIME BASE   39.95 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


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


            **************
            *            *
277 KK      *      CP9B  *
            *            *
            **************

279 KO      OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
296 KK      *      CP6B  *
            *            *
            **************

298 KO      OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS
```

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

              **************
              *            *
300 KK        *        1N  *        BASIN
              *            *
              **************

302 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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

              **************
              *            *
307 KK        *        4A  *        BASIN
              *            *
              **************

309 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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

              **************
              *            *
314 KK        *        2A  *        BASIN
              *            *
              **************

316 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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

              **************
              *            *
381 KK        *     CP4N1  *
              *            *
              **************

383 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 409 KK     *     CP4N   *
            *            *
            **************

 411 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION       STATION    FLOW    PEAK                                           AREA     STAGE    MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                           1B1      882.   12.15         101.        29.         17.       .49
          ROUTED TO
+                         RT1112     577.   12.85         101.        29.         17.       .49
+                                                                                            81.04      12.85

          HYDROGRAPH AT
+                           1B2      194.   12.35          29.         8.          5.       .16
          2 COMBINED AT
+                         CP1B2      664.   12.80         129.        36.         22.       .65
          HYDROGRAPH AT
+                           1B3      263.   12.10          28.         8.          5.       .13
          DIVERSION TO
+                          1B3R      256.   12.10          28.         8.          5.       .13
          HYDROGRAPH AT
+                          1B3L        7.   12.10           0.         0.          0.       .13
          ROUTED TO
+                         RT1314        1.   13.55           0.         0.          0.       .13
+                                                                                            80.01      13.55

          HYDROGRAPH AT
+                           1B4      208.   12.20          27.         8.          5.       .14
          2 COMBINED AT
+                         CP1B4      208.   12.20          28.         8.          5.       .27
          2 COMBINED AT
+                         CP1214     727.   12.80         156.        44.         27.       .92
          ROUTED TO
+                         RT1452     699.   12.95         156.        44.         27.       .92
+                                                                                            81.08      12.95

          HYDROGRAPH AT
+                           5B2      211.   12.15          27.         7.          4.       .12
          2 COMBINED AT
+                         CP5B2      735.   12.95         183.        51.         31.      1.05
          ROUTED TO
+                         RT529B     688.   13.25         183.        51.         31.      1.05
+                                                                                            88.30      13.25

          HYDROGRAPH AT
+                           5B1      185.   12.15          23.         6.          4.       .10
          ROUTED TO
+                         RT519B     112.   12.60          23.         6.          4.       .10
+                                                                                            87.73      12.60

          HYDROGRAPH AT
+                            9B      274.   12.25          37.        10.          6.       .20
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          HYDROGRAPH AT
+                    8B1      144.  12.10      14.       4.       2.      .08
          ROUTED TO
+                 RT819B      143.  12.15      14.       4.       2.      .08
+                                                                        59.85      12.15

          HYDROGRAPH AT
+                    4B1      470.  12.30      67.      19.      11.      .37
          ROUTED TO
+                 RT4142      420.  12.55      67.      19.      11.      .37
+                                                                        60.51      12.55

          HYDROGRAPH AT
+                    4B2      362.  12.20      44.      12.       7.      .24
          2 COMBINED AT
+                  CP4B2      604.  12.50     111.      31.      19.      .61
          ROUTED TO
+                 RT4282      592.  12.60     111.      31.      19.      .61
+                                                                        60.82      12.60

          HYDROGRAPH AT
+                    8B2      117.  12.10      12.       3.       2.      .06
          HYDROGRAPH AT
+                    2B1      861.  12.15      95.      26.      16.      .47
          ROUTED TO
+                 RT2122      690.  12.40      95.      26.      16.      .47
+                                                                      2702.19      12.40

          HYDROGRAPH AT
+                    2B2      732.  12.25     101.      28.      17.      .53
          HYDROGRAPH AT
+                    2B3      403.  12.20      51.      14.       8.      .26
          3 COMBINED AT
+                 CP2223     1749.  12.30     247.      68.      41.     1.26
          ROUTED TO
+                 RT2226     1681.  12.45     246.      68.      41.     1.26
+                                                                      2622.73      12.45

          HYDROGRAPH AT
+                    2B4      293.  12.25      41.      11.       7.      .21
          HYDROGRAPH AT
+                    2B5      273.  12.10      27.       8.       5.      .13
          2 COMBINED AT
+                 CP2425      503.  12.15      68.      19.      11.      .34
          ROUTED TO
+                 RT4526      400.  12.55      68.      19.      11.      .34
+                                                                      2622.05      12.55

          HYDROGRAPH AT
+                    2B6      551.  12.15      69.      20.      12.      .31
          3 COMBINED AT
+                  CP2B6     2353.  12.45     383.     108.      65.     1.91
          ROUTED TO
+                  RS2B6     1267.  12.90     253.      71.      43.     1.91
+                                                                      2612.03      12.90

          ROUTED TO
+                 RT2631     1237.  13.05     252.      71.      43.     1.91
+                                                                      2547.11      13.05

          HYDROGRAPH AT
+                    3B1      148.  12.20      18.       5.       3.      .10
          2 COMBINED AT
+                  CP3B1     1256.  13.00     265.      75.      46.     2.01
          ROUTED TO
+                 RT3132     1197.  13.25     263.      75.      46.     2.01
+                                                                        49.50      13.25

          HYDROGRAPH AT
+                    3B2      472.  12.25      66.      19.      11.      .34
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          2 COMBINED AT
+                      CP3B2     1259.  13.20      324.      93.      57.     2.35
          ROUTED TO
+                      RT3282    1262.  13.20      324.      93.      57.     2.35
+                                                                        1474.40      13.20
          3 COMBINED AT
+                      CP8B2     1531.  13.20      447.     126.      77.     3.02
          ROUTED TO
+                      RT829B    1519.  13.25      447.     126.      77.     3.02
+                                                                        2408.58      13.25
          5 COMBINED AT
+                       CP9B     2301.  13.20      703.     198.     121.     4.44
          HYDROGRAPH AT
+                      1B36B      256.  12.10       28.       8.       5.      .00
          ROUTED TO
+                      RT136B     184.  12.70       28.       8.       5.      .00
+                                                                          84.23      12.70
          HYDROGRAPH AT
+                         6B      293.  12.25       43.      12.       7.      .20
          2 COMBINED AT
+                       CP6B      333.  12.35       70.      20.      12.      .20
          HYDROGRAPH AT
+                         1N      352.  12.00       32.      10.       6.      .13
          HYDROGRAPH AT
+                         4A      139.  12.15       17.       5.       3.      .08
          HYDROGRAPH AT
+                         2A       63.  12.10        6.       2.       1.      .03
          HYDROGRAPH AT
+                         1S      403.  12.10       45.      14.       8.      .19
          ROUTED TO
+                      RT1S2S     339.  12.25       45.      14.       8.      .19
+                                                                          93.26      12.25
          HYDROGRAPH AT
+                         2S      171.  12.10       18.       5.       3.      .09
          2 COMBINED AT
+                       CP2S      477.  12.20       63.      19.      11.      .28
          ROUTED TO
+                      RT2S3S     465.  12.35       63.      19.      11.      .28
+                                                                          25.23      12.35
          HYDROGRAPH AT
+                         3S      156.  12.15       17.       5.       3.      .09
          2 COMBINED AT
+                       CP3S      563.  12.30       79.      23.      14.      .37
          ROUTED TO
+                      RT3S4N     562.  12.35       79.      23.      14.      .37
+                                                                        2470.08      12.35
          HYDROGRAPH AT
+                         3N      208.  12.15       26.       8.       5.      .11
          ROUTED TO
+                      RT34N1     206.  12.20       26.       8.       5.      .11
+                                                                        2540.66      12.15
          HYDROGRAPH AT
+                        4N1       97.  12.10       10.       3.       2.      .05
          2 COMBINED AT
+                      CP4N1      301.  12.15       36.      11.       6.      .16
          ROUTED TO
+                      RT4N14     262.  12.35       36.      11.       6.      .16
+                                                                          70.28      12.35
          HYDROGRAPH AT
+                         2N      393.  12.10       46.      13.       8.      .20
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          ROUTED TO
+                        RT2N4N      340.   12.35        46.        13.        8.       .20
+                                                                                              70.38      12.35

          HYDROGRAPH AT
+                            4N      148.   12.10        16.         4.        3.       .07

          4 COMBINED AT
+                          CP4N     1242.   12.35       176.        51.       31.       .81


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

D.6.3 NORTH-SOUTH BASIN - WITHOUT BLACK HILLS TANK

(A) 100-Year, 6-Hour Event, Existing Condition Model

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL  1997               *                    *   HYDROLOGIC ENGINEERING CENTER      *
 *           VERSION 4.1                *                    *         609 SECOND STREET            *
 *                                      *                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   01JUL06  TIME  14:48:31  *                    *          (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   Project ID: NS_6EN - Major Basin: 01 - Return Period: 100 Years
    2           ID   PROJECT:     RIO VERDE AREA DRAINAGE MASTER PLAN       FILE NAME: NS_6EN.DAT
    3           ID   MODE EVENT:  100-year, 6-hour Existing Condition Model
    4           ID   DEVELOPER:   Dibble & Associates, Inc.                 DATE: June 30, 2006
    5           ID   DESCRIPTION: This model assumes that Black Hills Tank is breached indicating
    6           ID                that no storage routing analysis is made.
    7           ID   NOTES:       Combines CP9BA and CP8B2A were added to evaluate the flows
    8           ID                from two distinct sub-areas prior to major combines (3/11/2004).
    9           ID
                *DIAGRAM
   10           IT       3                     800
   11           IO       5
   12           IN      15
                *
                *

   13           KK     1B1   BASIN
   14           BA   0.494
   15           PB   3.331
   16           PC   0.000   0.011   0.018   0.027   0.040   0.051   0.061   0.072   0.083   0.094
   17           PC   0.107   0.121   0.143   0.187   0.273   0.460   0.684   0.820   0.887   0.927
   18           PC   0.948   0.962   0.974   0.988   1.000
   19           LG    0.15    0.40    6.00    0.18       4
   20           UI      76     120     286     453     560     709     798     514     429     383
   21           UI     330     279     228     191     169     142     112      95      83      69
   22           UI      58      50      37      37      37      16      15      14      15      15
                *

   23           KK  RT1112   ROUTE   REACH
   24           KM   ROUTE FLOW FROM 1B1 TO CP1B2
   25           RS       9    FLOW      -1
   26           RC   0.060   0.045   0.060   10466  0.0220   82.30
   27           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
   28           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                *

   29           KK     1B2   BASIN
   30           BA   0.161
   31           LG    0.15    0.38    5.60    0.22       0
   32           UI      14      13      14      37      51      68      84      93     103     115
   33           UI     141     162     112      93      81      79      71      68      62      56
   34           UI      53      48      42      36      34      32      31      29      23      22
                *

   35           KK   CP1B2
   36           KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
   37           HC       2
                *
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 38          KK     1B3   BASIN
 39          BA   0.129
 40          LG    0.15    0.40    6.00    0.18      11
 41          UI      24      56     123     171     225     233     151     125     108      88
 42          UI      67      58      47      36      29      26      18      17      12      12
 43          UI       8       5       4       5       5       4       5       0       0       0
             *
1                                          HEC-1 INPUT                                          PAGE  2

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

 44          KK    1B3L
 45          KM   DIVERT FLOW FROM 1B3 TO CP6B
 46          DT    1B3R
 47          DI      25      75     150     300     400     600
 48          DQ      25      75     149     291     383     560
             *

 49          KK  RT1314   ROUTE   REACH
 50          KM   ROUTE FLOW FROM 1B3 TO CP1B4
 51          RS       6    FLOW      -1
 52          RC   0.045   0.040   0.045    7191  0.0225   82.30
 53          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
 54          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
             *

 55          KK     1B4   BASIN
 56          BA   0.141
 57          LG    0.15    0.39    5.80    0.19       0
 58          UI      16      15      37      63      89     108     122     147     187     126
 59          UI     101      91      83      76      68      60      52      44      40      36
 60          UI      33      28      24      20      19      17      15      12      12      10
             *

 61          KK   CP1B4
 62          KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
 63          HC       2
             *

 64          KK  CP1214
 65          KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
 66          HC       2
             *

 67          KK  RT1452   ROUTE   REACH
 68          KM   ROUTE FLOW FROM CP1214 TO CP5B2
 69          RS       3    FLOW      -1
 70          RC   0.050   0.050   0.050    2610  0.0207   82.30
 71          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
 72          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
             *

 73          KK     5B2   BASIN
 74          BA   0.124
 75          LG    0.15    0.35    7.00    0.12       0
 76          UI      17      19      55      85     112     131     169     172     112      97
 77          UI      87      78      67      58      47      41      38      32      26      22
 78          UI      19      19      13      13      10       9       8       8       6       3
 79          UI       3       3       3       4       3       3       3       3       0       0
 80          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

 81          KK   CP5B2
 82          KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
 83          HC       2
             *

 84          KK  RT529B   ROUTE   REACH
 85          KM   ROUTE FLOW FROM CP5B2 TO CP9B
 86          RS       6    FLOW      -1
 87          RC   0.045   0.040   0.045    5011  0.0216   92.00
 88          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
 89          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

 90          KK     5B1   BASIN
 91          BA   0.099
 92          LG    0.15    0.32    7.60    0.10       0
 93          UI      15      24      57      91     113     141     161     103      85      77
 94          UI      67      56      45      38      34      29      22      20      16      14
 95          UI      11      11       7       7       7       4       3       3       3       3
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 96          KK  RT519B   ROUTE   REACH
 97          KM   ROUTE FLOW FROM CP5B2 TO CP9B
 98          RS       3    FLOW      -1
 99          RC   0.050   0.050   0.050    5346  0.0213   92.00
100          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
101          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

102          KK      9B   BASIN
103          BA   0.200
104          LG    0.14    0.36    5.00    0.27       2
105          UI      21      21      43      76     109     134     154     177     225     227
106          UI     152     129     120     110      97      90      81      70      60      53
107          UI      49      47      40      35      27      27      23      23      18      16
108          UI      17      13      10      10      11      10       7       4       4       4
             *

109          KK   CP9BA
110          KM   COMBINE HYDROGRAPHS FROM RT529B, RT519B, AND 9B
111          HC       3
             *

112          KK     8B1   BASIN
113          BA   0.076
114          LG    0.14    0.36    5.00    0.27       3
115          UI      14      33      73     100     133     137      89      74      64      51
116          UI      40      34      28      21      17      15      11      10       7       6
117          UI       5       3       3       3       2       3       3       0       0       0
118          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

119          KK  RT819B   ROUTE   REACH
120          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
121          RS       3    FLOW      -1
122          RC   0.050   0.050   0.050     677  0.0177   64.70
123          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
124          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

125          KK     4B1   BASIN
126          BA   0.368
127          LG    0.15    0.38    5.40    0.23       0
128          UI      33      34      44     102     139     189     219     245     272     331
129          UI     402     284     228     205     189     175     160     149     136     122
130          UI     108      94      84      80      75      71      57      53      43      43
             *

131          KK  RT4142   ROUTE   REACH
132          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
133          RS       4    FLOW      -1
134          RC   0.050   0.050   0.050    6204  0.0213   64.70
135          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
136          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

137          KK     4B2   BASIN
138          BA   0.240
139          LG    0.15    0.36    5.00    0.28       0
140          UI      29      29      77     126     177     208     238     316     278     198
141          UI     170     153     139     124     110      94      78      70      65      57
142          UI      47      38      36      32      29      22      22      19      14      14
             *

143          KK   CP4B2
144          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
145          HC       2
             *

146          KK  RT4282   ROUTE   REACH
147          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
148          RS       3    FLOW      -1
149          RC   0.050   0.050   0.050    3773  0.0217   64.70
150          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
151          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

152          KK     8B2   BASIN
153          BA   0.064
154          LG    0.15    0.36    5.00    0.27       1
155          UI      11      20      48      70      86     121      81      64      55      47
156          UI      40      31      26      24      18      14      12      11       8       8
157          UI       5       6       4       2       2       2       2       2       2       2
```

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                    *
1                                          HEC-1 INPUT                                                    PAGE  5

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

    158             KK  CP8B2A
    159             KM   COMBINE HYDROGRAPHS FROM RT4282 AND 8B2
    160             HC       2
                    *

    161             KK     2B1   BASIN
    162             BA   0.472
    163             LG    0.15    0.40    6.00    0.18       1
    164             UI      75     130     308     473     584     786     690     478     406     360
    165             UI     305     256     196     178     156     119      97      83      72      58
    166             UI      51      37      37      36      14      15      14      15      14      15
                    *

    167             KK  RT2122   ROUTE   REACH
    168             KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
    169             RS       3    FLOW      -1
    170             RC   0.060   0.045   0.060    4909  0.0159 2708.00
    171             RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
    172             RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
                    *

    173             KK     2B2   BASIN
    174             BA   0.533
    175             LG    0.15    0.39    5.70    0.20       1
    176             UI      54      55     101     186     273     340     391     438     539     639
    177             UI     424     350     319     294     265     244     221     196     171     144
    178             UI     132     125     116      97      87      69      68      60      59      44
                    *

    179             KK     2B3   BASIN
    180             BA   0.259
    181             LG    0.15    0.40    6.00    0.18       0
    182             UI      32      32      95     149     202     239     281     374     267     205
    183             UI     186     163     149     130     113      95      80      76      69      54
    184             UI      45      40      36      33      25      25      21      16      16      16
                    *

    185             KK  CP2223
    186             KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
    187             HC       3
                    *

    188             KK  RT2226   ROUTE   REACH
    189             KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
    190             RS       6    FLOW      -1
    191             RC   0.050   0.040   0.050    4244  0.0118 2628.00
    192             RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
    193             RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
                    *
1                                          HEC-1 INPUT                                                    PAGE  6

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

    194             KK     2B4   BASIN
    195             BA   0.212
    196             LG    0.15    0.40    6.00    0.18       0
    197             UI      21      21      36      70     100     127     148     164     198     249
    198             UI     182     146     125     118     107      97      89      82      70      61
    199             UI      54      50      48      44      35      31      27      25      23      23
                    *

    200             KK     2B5   BASIN
    201             BA   0.125
    202             LG    0.15    0.37    6.60    0.14       7
    203             UI      28      88     174     239     278     171     140     114      85      66
    204             UI      55      39      32      24      19      14      14       6       5       5
    205             UI       6       5       5       0       0       0       0       0       0       0
                    *

    206             KK  CP2425
    207             KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
    208             HC       2
                    *

    209             KK  RT4526   ROUTE   REACH
    210             KM   ROUTE FLOW FROM CP2425 TO CP2B6
    211             RS       4    FLOW      -1
    212             RC   0.060   0.045   0.060    4060  0.0113 2628.00
    213             RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
    214             RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
```

```
                 *
215              KK     2B6   BASIN
216              BA   0.308
217              LG    0.15    0.38    6.40    0.16      13
218              UI      43      57     147     235     300     349     489     368     273     241
219              UI     213     189     161     134     111     101      90      71      56      52
220              UI      47      36      33      29      21      21      21      13       8       9
                 *

221              KK   CP2B6
222              KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
223              HC       3
                 *

224              KK  RT2632   ROUTE   REACH
225              KM   ROUTE RS2B6 TO CP3B2
226              RS       4    FLOW      -1
227              RC   0.070   0.050   0.070    8967  0.0221   20.00
228              RX     0.0    68.2   216.8   370.2   450.7   491.4   528.9   590.1
229              RY    20.0    16.0    13.8    14.0    13.2    14.0    18.0    20.0
                 *
1                                          HEC-1 INPUT                                          PAGE  7

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

230              KK     3B1   BASIN
231              BA   0.098
232              LG    0.15    0.36    5.00    0.28       0
233              UI      12      11      32      51      73      85      97     129     113      81
234              UI      70      63      56      51      45      38      32      28      27      23
235              UI      19      16      15      13      11       9       9       8       6       6
                 *

236              KK  RT3132   ROUTE   REACH
237              KM   ROUTE FLOW FROM 3B1 TO CP3B2
238              RS       4    FLOW      -1
239              RC   0.060   0.045   0.060    3657  0.0202   52.00
240              RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
241              RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
                 *

242              KK     3B2   BASIN
243              BA   0.342
244              LG    0.15    0.39    5.70    0.20       3
245              UI      35      34      66     119     175     218     252     280     346     410
246              UI     272     225     204     189     170     157     141     126     110      93
247              UI      84      80      75      62      56      45      43      38      38      28
                 *

248              KK   CP3B2
249              KM   COMBINE FLOW FROM RT3132, RT2632, AND 3B2
250              HC       3
                 *

251              KK  RT3282   ROUTE   REACH
252              KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
253              RS       9    FLOW      -1
254              RC   0.060   0.045   0.060     329  0.0213 2419.60
255              RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
256              RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
                 *

257              KK   CP8B2
258              KM   COMBINE HYDROGRAPHS FROM RT3282 AND CP8B2A
259              HC       2
                 *

260              KK  RT829B   ROUTE   REACH
261              KM   ROUTE FLOW FROM CP8B2 TO CP9B
262              RS       9    FLOW      -1
263              RC   0.060   0.045   0.060     507  0.0178 2410.00
264              RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
265              RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
                 *
1                                          HEC-1 INPUT                                          PAGE  8

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

266              KK    CP9B
267              KM   COMBINE HYDROGRAPHS FROM CP9BA, RT819B, AND RT829B
268              KO                                      21
269              HC       3
                 *
```

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270          KK   1B36B
271          KM   RETRIEVE FLOW FROM 1B3
272          DR    1B3R
             *

273          KK  RT136B   ROUTE   REACH
274          KM   ROUTE FLOW FROM 1B3 TO CP_6B
275          RS      12    FLOW      -1
276          RC   0.060   0.045   0.060    8533  0.0234   86.50
277          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
278          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
             *

279          KK      6B   BASIN
280          BA   0.204
281          LG    0.15    0.36    6.80    0.13       3
282          UI      21      21      38      72     104     130     150     168     205     245
283          UI     162     135     122     112     101      94      84      76      65      55
284          UI      51      47      45      37      34      26      26      23      22      17
             *

285          KK    CP6B
286          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
287          KO                                    21
288          HC       2
             *

289          KK      1N   BASIN
290          BA   0.131
291          KO                                    21
292          LG    0.15    0.39    6.20    0.17      25
293          UI      79     300     466     281     199     124      87      55      35      25
294          UI      13       9      10       0       0       0       0       0       0       0
295          UI       0       0       0       0       0       0       0       0       0       0
             *

296          KK      4A   BASIN
297          BA   0.082
298          KO                                    21
299          LG    0.15    0.39    5.80    0.19       6
300          UI      11      15      40      62      81      92     130      98      73      64
301          UI      57      50      43      36      29      27      24      19      15      14
302          UI      13       9       9       7       6       5       6       3       3       2
             *
1                                          HEC-1 INPUT                                          PAGE  9

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

303          KK      2A   BASIN
304          BA   0.031
305          KO                                    21
306          LG    0.15    0.39    6.20    0.17       0
307          UI       6      16      33      46      64      49      35      30      25      19
308          UI      15      14      10       7       7       5       4       3       3       2
309          UI       1       1       1       1       2       1       0       0       0       0
             *

310          KK      1S   BASIN
311          BA   0.188
312          LG    0.15    0.39    6.20    0.17      22
313          UI      38      94     203     275     393     293     216     184     148     117
314          UI      92      80      60      46      41      29      25      19      18      11
315          UI       7       7       8       7       7       7       0       0       0       0
             *

316          KK  RT1S2S   ROUTE   REACH
317          KM   ROUTE FLOW FROM 1S TO CP_2S
318          RS       3    FLOW      -1
319          RC   0.060   0.045   0.060    4833  0.0252  100.00
320          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
321          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
             *

322          KK      2S   BASIN
323          BA   0.092
324          LG    0.15    0.38    5.60    0.22       1
325          UI      16      28      69     101     124     174     115      92      79      70
326          UI      56      46      36      34      27      20      18      15      12      11
327          UI       7       8       7       2       3       3       3       3       3       3
             *

328          KK    CP2S
329          KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
330          HC       2
             *
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```
331          KK  RT2S3S   ROUTE   REACH
332          KM   ROUTE FLOW FROM 2S TO CP_3S
333          RS       5    FLOW      -1
334          RC   0.050   0.050   0.050    2774  0.0231   29.10
335          RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
336          RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
             *

337          KK      3S   BASIN
338          BA   0.087
339          LG    0.14    0.37    5.30    0.24       2
340          UI      14      28      65      95     118     165     108      87      75      65
341          UI      54      43      35      32      26      18      17      15      11       9
342          UI       7       7       7       2       3       3       3       3       3       3
             *
1                                          HEC-1 INPUT                                          PAGE 10

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

343          KK    CP3S
344          KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
345          HC       2
             *

346          KK  RT3S4N   ROUTE   REACH
347          KM   ROUTE FLOW FROM CP3S TO CP4N
348          RS       4    FLOW      -1
349          RC   0.060   0.045   0.060    1040  0.0250 2472.00
350          RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
351          RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
             *
             *

352          KK      3N   BASIN
353          BA   0.110
354          LG    0.15    0.39    6.20    0.17      20
355          UI      17      31      72     110     136     183     161     111      95      84
356          UI      71      59      46      42      36      28      22      20      17      13
357          UI      12       8       9       8       4       3       4       3       3       4
             *

358          KK  RT34N1   ROUTE   REACH
359          KM   ROUTE FLOW FROM 3N TO CP4N1
360          RS       5    FLOW      -1
361          RC   0.060   0.045   0.060     940  0.0277 2542.00
362          RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
363          RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
             *

364          KK     4N1   BASIN
365          BA   0.050
366          LG    0.15    0.38    5.60    0.22       2
367          UI       9      18      42      60      78      94      59      50      43      35
368          UI      29      23      20      16      13      10      10       6       6       4
369          UI       4       4       1       2       2       1       2       2       2       0
             *

370          KK   CP4N1
371          KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
372          KO                                      21
373          HC       2
             *

374          KK  RT4N14   ROUTE   REACH
375          KM   ROUTE FLOW FROM CP4N1 TO CP4N
376          RS       3    FLOW      -1
377          RC   0.060   0.045   0.060    3010  0.0239   72.70
378          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
379          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *
1                                          HEC-1 INPUT                                          PAGE 11

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

380          KK      2N   BASIN
381          BA   0.205
382          LG    0.15    0.40    6.00    0.18      14
383          UI      36      76     171     246     318     386     245     204     173     148
384          UI     118      93      81      67      51      43      37      28      25      17
385          UI      18      14       7       7       7       7       7       7       7       0
             *

386          KK  RT2N4N   ROUTE   REACH
387          KM   ROUTE FLOW FROM 2N TO CP_4N
388          RS       4    FLOW      -1
```

```
389          RC   0.060   0.045   0.060    3992  0.0256   72.70
390          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
391          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

392          KK      4N   BASIN
393          BA   0.074
394          LG    0.13    0.36    6.80    0.12       6
395          UI      14      31      72      97     130     134      86      71      63      50
396          UI      38      33      28      21      16      15      11       9       7       6
397          UI       5       3       3       2       3       2       3       0       0       0
             *

398          KK    CP4N
399          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
400          KO                                      21
401          HC       4
402          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    13        1B1
                V
                V
    23      RT1112
                .
                .
    29          .         1B2
                .           .
                .           .
    35       CP1B2............
                .
                .
    38          .         1B3
                .           .
                .           .
    46          .           .------->    1B3R
    44          .        1B3L
                .           V
                .           V
    49          .      RT1314
                .           .
                .           .
    55          .           .         1B4
                .           .           .
                .           .           .
    61          .       CP1B4............
                .           .
                .           .
    64      CP1214............
                V
                V
    67      RT1452
                .
                .
    73          .         5B2
                .           .
                .           .
    81       CP5B2............
                V
                V
    84      RT529B
                .
                .
    90          .         5B1
                .           V
                .           V
    96          .      RT519B
                .           .
                .           .
   102          .           .          9B
                .           .           .
                .           .           .
   109       CP9BA........................
                .
                .
   112          .         8B1
                .           V
                .           V
   119          .      RT819B
                .           .
                .           .
   125          .           .         4B1
```

```
                .         .         V
                .         .         V
131             .         .     RT4142
                .         .         .
                .         .         .
137             .         .         .       4B2
                .         .         .         .
                .         .         .         .
143             .         .      CP4B2............
                .         .         V
                .         .         V
146             .         .     RT4282
                .         .         .
                .         .         .
152             .         .         .       8B2
                .         .         .         .
                .         .         .         .
158             .         .     CP8B2A...........
                .         .         .
                .         .         .
161             .         .         .       2B1
                .         .         .         V
                .         .         .         V
167             .         .         .    RT2122
                .         .         .         .
                .         .         .         .
173             .         .         .         .         2B2
                .         .         .         .           .
                .         .         .         .           .
179             .         .         .         .           .         2B3
                .         .         .         .           .           .
                .         .         .         .           .           .
185             .         .         .    CP2223.......................
                .         .         .         V
                .         .         .         V
188             .         .         .    RT2226
                .         .         .         .
                .         .         .         .
194             .         .         .         .         2B4
                .         .         .         .           .
                .         .         .         .           .
200             .         .         .         .           .         2B5
                .         .         .         .           .           .
                .         .         .         .           .           .
206             .         .         .         .     CP2425............
                .         .         .         .           V
                .         .         .         .           V
209             .         .         .         .     RT4526
                .         .         .         .           .
                .         .         .         .           .
215             .         .         .         .           .         2B6
                .         .         .         .           .           .
                .         .         .         .           .           .
221             .         .         .      CP2B6.......................
                .         .         .         V
                .         .         .         V
224             .         .         .    RT2632
                .         .         .         .
                .         .         .         .
230             .         .         .         .         3B1
                .         .         .         .           V
                .         .         .         .           V
236             .         .         .         .     RT3132
                .         .         .         .           .
                .         .         .         .           .
242             .         .         .         .           .         3B2
                .         .         .         .           .           .
                .         .         .         .           .           .
248             .         .         .      CP3B2.......................
                .         .         .         V
                .         .         .         V
251             .         .         .    RT3282
                .         .         .         .
                .         .         .         .
257             .         .      CP8B2............
                .         .         V
                .         .         V
260             .         .     RT829B
                .         .         .
                .         .         .
266          CP9B........................
                .
                .
272             .         .<-------    1B3R
270             .      1B36B
                .         V
                .         V
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273          .      RT136B
             .        .
             .        .
279          .        .          6B
             .        .          .
             .        .          .
285          .      CP6B............
             .        .
             .        .
289          .        .          1N
             .        .          .
             .        .          .
296          .        .          .          4A
             .        .          .          .
             .        .          .          .
303          .        .          .          .          2A
             .        .          .          .          .
             .        .          .          .          .
310          .        .          .          .          .          1S
             .        .          .          .          .          V
             .        .          .          .          .          V
316          .        .          .          .          .      RT1S2S
             .        .          .          .          .          .
             .        .          .          .          .          .
322          .        .          .          .          .          .          2S
             .        .          .          .          .          .          .
             .        .          .          .          .          .          .
328          .        .          .          .          .        CP2S............
             .        .          .          .          .          V
             .        .          .          .          .          V
331          .        .          .          .          .      RT2S3S
             .        .          .          .          .          .
             .        .          .          .          .          .
337          .        .          .          .          .          .          3S
             .        .          .          .          .          .          .
             .        .          .          .          .          .          .
343          .        .          .          .          .        CP3S............
             .        .          .          .          .          V
             .        .          .          .          .          V
346          .        .          .          .          .      RT3S4N
             .        .          .          .          .          .
             .        .          .          .          .          .
352          .        .          .          .          .          .          3N
             .        .          .          .          .          .          V
             .        .          .          .          .          .          V
358          .        .          .          .          .          .      RT34N1
             .        .          .          .          .          .          .
             .        .          .          .          .          .          .
364          .        .          .          .          .          .          .          4N1
             .        .          .          .          .          .          .          .
             .        .          .          .          .          .          .          .
370          .        .          .          .          .          .      CP4N1............
             .        .          .          .          .          .          V
             .        .          .          .          .          .          V
374          .        .          .          .          .          .      RT4N14
             .        .          .          .          .          .          .
             .        .          .          .          .          .          .
380          .        .          .          .          .          .          .          2N
             .        .          .          .          .          .          .          V
             .        .          .          .          .          .          .          V
386          .        .          .          .          .          .          .      RT2N4N
             .        .          .          .          .          .          .          .
             .        .          .          .          .          .          .          .
392          .        .          .          .          .          .          .          .          4N
             .        .          .          .          .          .          .          .          .
             .        .          .          .          .          .          .          .          .
398          .        .          .          .          .        CP4N.....................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                    ****************************************
*                                        *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997                *                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.1                 *                    *         609 SECOND STREET            *
*                                        *                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   01JUL06  TIME  14:48:31    *                    *          (916) 756-1104              *
*                                        *                    *                                      *
****************************************                    ****************************************
```

Project ID: NS_6EN - Major Basin: 01 - Return Period: 100 Years
PROJECT: RIO VERDE AREA DRAINAGE MASTER PLAN FILE NAME: NS_6EN.DAT
MODE EVENT: 100-year, 6-hour Existing Condition Model
DEVELOPER: Dibble & Associates, Inc. DATE: June 30, 2006

```
                    DESCRIPTION: This model assumes that Black Hills Tank is breached indicating
                                 that no storage routing analysis is made.
                    NOTES:       Combines CP9BA and CP8B2A were added to evaluate the flows
                                 from two distinct sub-areas prior to major combines (3/11/2004).

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           3  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        1557  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .05 HOURS
                       TOTAL TIME BASE   39.95 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


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


            **************
            *            *
 266 KK     *      CP9B  *
            *            *
            **************

 268 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 285 KK     *      CP6B  *
            *            *
            **************

 287 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 289 KK     *        1N  *        BASIN
            *            *
            **************
```

```
291 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
296 KK      *        4A  *        BASIN
            *            *
            **************

298 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
303 KK      *        2A  *        BASIN
            *            *
            **************

305 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
370 KK      *     CP4N1  *
            *            *
            **************

372 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
398 KK      *      CP4N  *
            *            *
            **************
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400 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN    MAXIMUM    TIME OF
        OPERATION       STATION    FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                     6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          1B1     553.    4.20        83.         21.         12.       .49
        ROUTED TO
+                        RT1112     428.    4.95        82.         21.         12.       .49
+                                                                                          80.89       4.95
        HYDROGRAPH AT
+                          1B2     129.    4.45        22.          5.          3.       .16
        2 COMBINED AT
+                        CP1B2     500.    4.95       104.         26.         16.       .65
        HYDROGRAPH AT
+                          1B3     159.    4.15        24.          6.          4.       .13
        DIVERSION TO
+                         1B3R     158.    4.15        23.          6.          4.       .13
        HYDROGRAPH AT
+                         1B3L       2.    4.15         0.          0.          0.       .13
        ROUTED TO
+                        RT1314       0.    5.60         0.          0.          0.       .13
+                                                                                          80.00       5.60
        HYDROGRAPH AT
+                          1B4     136.    4.30        22.          5.          3.       .14
        2 COMBINED AT
+                        CP1B4     136.    4.30        22.          5.          3.       .27
        2 COMBINED AT
+                        CP1214     553.    4.90       126.         32.         19.       .92
        ROUTED TO
+                        RT1452     534.    5.05       125.         32.         19.       .92
+                                                                                          80.94       5.05
        HYDROGRAPH AT
+                          5B2     142.    4.25        23.          6.          3.       .12
        2 COMBINED AT
+                        CP5B2     567.    5.05       148.         37.         23.      1.05
        ROUTED TO
+                        RT529B     521.    5.45       148.         37.         23.      1.05
+                                                                                          88.22       5.45
        HYDROGRAPH AT
+                          5B1     123.    4.20        19.          5.          3.       .10
        ROUTED TO
+                        RT519B      91.    4.75        19.          5.          3.       .10
+                                                                                          87.68       4.75
        HYDROGRAPH AT
+                           9B     177.    4.35        29.          7.          4.       .20
        3 COMBINED AT
+                        CP9BA     587.    5.40       196.         50.         30.      1.35
        HYDROGRAPH AT
+                          8B1      86.    4.15        12.          3.          2.       .08
        ROUTED TO
+                        RT819B      86.    4.20        12.          3.          2.       .08
```

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+                                                                                                  59.62        4.20

          HYDROGRAPH AT
+                                  4B1      306.   4.40        51.       13.        8.       .37

          ROUTED TO
+                               RT4142      285.   4.70        51.       13.        8.       .37
+                                                                                                  60.21        4.70

          HYDROGRAPH AT
+                                  4B2      220.   4.30        33.        8.        5.       .24

          2 COMBINED AT
+                              CP4B2       439.   4.55        84.       21.       13.       .61

          ROUTED TO
+                               RT4282      427.   4.70        84.       21.       13.       .61
+                                                                                                  60.52        4.70

          HYDROGRAPH AT
+                                  8B2       69.   4.15         9.        2.        1.       .06

          2 COMBINED AT
+                              CP8B2A      452.   4.70        93.       23.       14.       .67

          HYDROGRAPH AT
+                                  2B1      531.   4.20        77.       19.       12.       .47

          ROUTED TO
+                               RT2122      479.   4.45        77.       19.       12.       .47
+                                                                                                2701.83        4.45

          HYDROGRAPH AT
+                                  2B2      486.   4.35        80.       20.       12.       .53

          HYDROGRAPH AT
+                                  2B3      263.   4.25        41.       10.        6.       .26

          3 COMBINED AT
+                              CP2223      1200.   4.35       198.       49.       30.      1.26

          ROUTED TO
+                               RT2226      1176.   4.55       197.       49.       30.      1.26
+                                                                                                2622.50        4.55

          HYDROGRAPH AT
+                                  2B4      192.   4.35        32.        8.        5.       .21

          HYDROGRAPH AT
+                                  2B5      170.   4.10        24.        6.        4.       .13

          2 COMBINED AT
+                              CP2425      331.   4.20        56.       14.        8.       .34

          ROUTED TO
+                               RT4526      296.   4.60        56.       14.        8.       .34
+                                                                                                2621.93        4.60

          HYDROGRAPH AT
+                                  2B6      353.   4.20        59.       15.        9.       .31

          3 COMBINED AT
+                              CP2B6       1721.   4.55       311.       78.       47.      1.91

          ROUTED TO
+                               RT2632      1472.   5.00       310.       78.       47.      1.91
+                                                                                                  14.84        5.00

          HYDROGRAPH AT
+                                  3B1       90.   4.25        14.        3.        2.       .10

          ROUTED TO
+                               RT3132       70.   4.80        14.        3.        2.       .10
+                                                                                                  48.38        4.80

          HYDROGRAPH AT
+                                  3B2      315.   4.35        53.       13.        8.       .34

          3 COMBINED AT
+                              CP3B2       1664.   4.95       376.       95.       57.      2.35

          ROUTED TO
+                               RT3282      1661.   4.95       376.       95.       57.      2.35
+                                                                                                1479.29        4.95

          2 COMBINED AT
+                              CP8B2       2039.   4.95       469.      118.       71.      3.02
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          ROUTED TO
+                    RT829B    2045.   4.95     469.     118.     71.    3.02
+                                                                          2409.03      4.95

          3 COMBINED AT
+                     CP9B    2572.   4.95     676.     171.    103.    4.44

          HYDROGRAPH AT
+                    1B36B     158.   4.15      23.       6.      4.     .00

          ROUTED TO
+                   RT136B     135.   4.80      23.       6.      4.     .00
+                                                                            84.13      4.80

          HYDROGRAPH AT
+                       6B     206.   4.35      36.       9.      5.     .20

          2 COMBINED AT
+                     CP6B     283.   4.65      59.      15.      9.     .20

          HYDROGRAPH AT
+                       1N     201.   4.05      28.       7.      4.     .13

          HYDROGRAPH AT
+                       4A      89.   4.20      14.       3.      2.     .08

          HYDROGRAPH AT
+                       2A      38.   4.10       5.       1.      1.     .03

          HYDROGRAPH AT
+                       1S     248.   4.10      39.      10.      6.     .19

          ROUTED TO
+                   RT1S2S     229.   4.35      39.      10.      6.     .19
+                                                                            92.94      4.35

          HYDROGRAPH AT
+                       2S     102.   4.15      14.       4.      2.     .09

          2 COMBINED AT
+                     CP2S     321.   4.25      53.      13.      8.     .28

          ROUTED TO
+                   RT2S3S     316.   4.40      53.      13.      8.     .28
+                                                                            25.02      4.40

          HYDROGRAPH AT
+                       3S      96.   4.15      13.       3.      2.     .09

          2 COMBINED AT
+                     CP3S     393.   4.40      66.      17.     10.     .37

          ROUTED TO
+                   RT3S4N     392.   4.45      66.      17.     10.     .37
+                                                                          2469.86      4.45

          HYDROGRAPH AT
+                       3N     134.   4.15      22.       6.      3.     .11

          ROUTED TO
+                   RT34N1     134.   4.20      22.       6.      3.     .11
+                                                                          2540.43      4.20

          HYDROGRAPH AT
+                      4N1      57.   4.15       8.       2.      1.     .05

          2 COMBINED AT
+                    CP4N1     190.   4.20      30.       8.      5.     .16

          ROUTED TO
+                   RT4N14     178.   4.40      30.       8.      5.     .16
+                                                                            70.14      4.40

          HYDROGRAPH AT
+                       2N     252.   4.15      39.      10.      6.     .20

          ROUTED TO
+                   RT2N4N     234.   4.40      39.      10.      6.     .20
+                                                                            70.23      4.40

          HYDROGRAPH AT
+                       4N      97.   4.15      15.       4.      2.     .07

          4 COMBINED AT
+                     CP4N     876.   4.40     149.      38.     23.     .81
```

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*** NORMAL END OF HEC-1 ***
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D.6.3 NORTH-SOUTH BASIN, WITHOUT BLACK HILLS TANK

(B) 100-Year, 6-Hour Event, Future Condition Model

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS   *
 *              JUL   1997           *                    *   HYDROLOGIC ENGINEERING CENTER   *
 *            VERSION 4.1            *                    *          609 SECOND STREET        *
 *                                   *                    *       DAVIS, CALIFORNIA 95616     *
 *  RUN DATE   01JUL06  TIME  14:57:46  *                    *          (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   Project ID: NS_6FN - Major Basin: 01 - Return Period: 100 Years
    2           ID   PROJECT:     RIO VERDE AREA DRAINAGE MASTER PLAN       FILE NAME: NS_6FN.DAT
    3           ID   MODE EVENT:  100-year, 6-hour Future Condition Model
    4           ID   DEVELOPER:   Dibble & Associates, Inc.                 DATE: June 30, 2006
    5           ID   DESCRIPTION: This model assumes that Black Hills Tank is breached indicating
    6           ID                that no storage routing analysis is made.
    7           ID   NOTES:       Combines CP9BA and CP8B2A were added to evaluate the flows
    8           ID                from two distinct sub-areas prior to major combines (3/11/2004).
    9           ID
                *DIAGRAM
   10           IT       3                    800
   11           IO       5
   12           IN      15
                *
                *

   13           KK     1B1   BASIN
   14           BA   0.494
   15           PB   3.331
   16           PC   0.000   0.011   0.018   0.027   0.040   0.051   0.061   0.072   0.083   0.094
   17           PC   0.107   0.121   0.143   0.187   0.273   0.460   0.684   0.820   0.887   0.927
   18           PC   0.948   0.962   0.974   0.988   1.000
   19           LG    0.10    0.40    6.00    0.15      19
   20           UI      83     157     368     540     669     934     617     494     426     370
   21           UI     304     244     200     181     143     108      95      82      64      56
   22           UI      40      41      35      16      16      16      16      16      16      16
                *

   23           KK  RT1112   ROUTE   REACH
   24           KM   ROUTE FLOW FROM 1B1 TO CP1B2
   25           RS       9    FLOW      -1
   26           RC   0.060   0.045   0.060   10466  0.0220   82.30
   27           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
   28           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                *

   29           KK     1B2   BASIN
   30           BA   0.161
   31           LG    0.10    0.38    5.60    0.18      15
   32           UI      15      15      22      47      64      88     101     112     129     159
   33           UI     172     115      98      89      82      76      71      62      59      52
   34           UI      44      39      37      35      32      28      24      20      20      17
                *

   35           KK   CP1B2
   36           KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
   37           HC       2
                *
```

```
  38        KK     1B3   BASIN
  39        BA   0.129
  40        LG    0.10    0.40    6.00    0.15      26
  41        UI      27      76     159     213     291     181     147     123      97      73
  42        UI      61      47      36      30      22      19      13      14       7       5
  43        UI       5       5       6       5       0       0       0       0       0       0
            *
1                                        HEC-1 INPUT                                          PAGE  2

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

  44        KK    1B3L
  45        KM   DIVERT FLOW FROM 1B3 TO CP6B
  46        DT    1B3R
  47        DI      25      75     150     300     400     600
  48        DQ      25      75     149     291     383     560
            *

  49        KK  RT1314   ROUTE   REACH
  50        KM   ROUTE FLOW FROM 1B3 TO CP1B4
  51        RS       6    FLOW      -1
  52        RC   0.045   0.040   0.045    7191  0.0225   82.30
  53        RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
  54        RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
            *

  55        KK     1B4   BASIN
  56        BA   0.141
  57        LG    0.10    0.39    5.80    0.16      15
  58        UI      17      18      51      82     110     130     152     204     146     111
  59        UI     101      89      81      71      62      51      44      41      37      30
  60        UI      25      22      19      19      13      14      11       8       9       8
            *

  61        KK   CP1B4
  62        KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
  63        HC       2
            *

  64        KK  CP1214
  65        KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
  66        HC       2
            *

  67        KK  RT1452   ROUTE   REACH
  68        KM   ROUTE FLOW FROM CP1214 TO CP5B2
  69        RS       3    FLOW      -1
  70        RC   0.050   0.050   0.050    2610  0.0207   82.30
  71        RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
  72        RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
            *

  73        KK     5B2   BASIN
  74        BA   0.124
  75        LG    0.10    0.35    7.00    0.10      15
  76        UI      18      26      65     104     130     158     206     134     108      96
  77        UI      86      72      63      50      43      39      32      26      22      20
  78        UI      15      14      12       9       9       9       5       3       4       3
  79        UI       4       3       4       3       4       0       0       0       0       0
  80        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

  81        KK   CP5B2
  82        KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
  83        HC       2
            *

  84        KK  RT529B   ROUTE   REACH
  85        KM   ROUTE FLOW FROM CP5B2 TO CP9B
  86        RS       6    FLOW      -1
  87        RC   0.045   0.040   0.045    5011  0.0216   92.00
  88        RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
  89        RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
            *

  90        KK     5B1   BASIN
  91        BA   0.099
  92        LG    0.10    0.32    7.60    0.08      15
  93        UI      17      31      74     108     134     187     124      99      85      75
  94        UI      61      49      39      36      29      22      19      16      13      12
  95        UI       8       8       7       3       3       3       4       3       3       3
            *
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```
 96          KK  RT519B   ROUTE   REACH
 97          KM   ROUTE FLOW FROM CP5B2 TO CP9B
 98          RS       3    FLOW      -1
 99          RC   0.050   0.050   0.050    5346  0.0213   92.00
100          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
101          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

102          KK      9B   BASIN
103          BA   0.200
104          LG    0.10    0.36    5.00    0.23      15
105          UI      23      24      56      98     136     162     184     236     256     167
106          UI     144     129     116     106      93      83      69      60      55      50
107          UI      44      37      30      28      25      22      18      18      14      12
108          UI      11      12      11       5       5       4       4       5       4       5
             *

109          KK   CP9BA
110          KM   COMBINE HYDROGRAPHS FROM RT529B, RT519B, AND 9B
111          HC       3
             *

112          KK     8B1   BASIN
113          BA   0.076
114          LG    0.10    0.36    5.00    0.23      15
115          UI      15      38      82     111     159     119      87      75      59      48
116          UI      37      32      25      18      17      12      10       7       7       5
117          UI       3       3       3       3       3       2       0       0       0       0
118          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

119          KK  RT819B   ROUTE   REACH
120          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
121          RS       3    FLOW      -1
122          RC   0.050   0.050   0.050     677  0.0177   64.70
123          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
124          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

125          KK     4B1   BASIN
126          BA   0.368
127          LG    0.10    0.38    5.40    0.19      15
128          UI      37      38      70     128     189     235     270     302     372     442
129          UI     292     242     220     203     183     169     152     135     119      99
130          UI      91      87      80      67      60      48      47      41      40      31
             *

131          KK  RT4142   ROUTE   REACH
132          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
133          RS       4    FLOW      -1
134          RC   0.050   0.050   0.050    6204  0.0213   64.70
135          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
136          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

137          KK     4B2   BASIN
138          BA   0.240
139          LG    0.10    0.36    5.00    0.23      15
140          UI      32      38     106     165     217     253     327     334     217     188
141          UI     167     151     129     113      91      80      73      63      51      41
142          UI      38      35      26      25      21      15      16      16      11       6
             *

143          KK   CP4B2
144          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
145          HC       2
             *

146          KK  RT4282   ROUTE   REACH
147          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
148          RS       3    FLOW      -1
149          RC   0.050   0.050   0.050    3773  0.0217   64.70
150          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
151          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

152          KK     8B2   BASIN
153          BA   0.064
154          LG    0.10    0.36    5.00    0.23      15
155          UI      12      28      61      85     111     116      75      62      53      43
156          UI      34      28      24      18      15      12       9       9       6       6
157          UI       4       2       3       2       2       2       2       0       0       0
```

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                    *
1                                          HEC-1 INPUT                                                    PAGE  5

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

    158             KK  CP8B2A
    159             KM   COMBINE HYDROGRAPHS FROM RT4282 AND 8B2
    160             HC       2
                    *

    161             KK     2B1   BASIN
    162             BA   0.472
    163             LG    0.10    0.40    6.00    0.15      16
    164             UI      84     173     393     568     731     890     562     472     398     340
    165             UI     272     214     189     154     116      99      85      64      57      41
    166             UI      41      32      17      16      16      16      16      16      16       0
                    *

    167             KK  RT2122   ROUTE   REACH
    168             KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
    169             RS       3    FLOW      -1
    170             RC   0.060   0.045   0.060    4909  0.0159 2708.00
    171             RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
    172             RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
                    *

    173             KK     2B2   BASIN
    174             BA   0.533
    175             LG    0.10    0.39    5.70    0.17      16
    176             UI      60      60     138     237     339     404     462     556     708     476
    177             UI     383     344     313     286     256     230     195     168     149     138
    178             UI     127     103      90      76      70      65      56      46      46      38
                    *

    179             KK     2B3   BASIN
    180             BA   0.259
    181             LG    0.10    0.40    6.00    0.15      15
    182             UI      35      40     115     178     234     273     353     360     234     204
    183             UI     180     163     140     120      99      86      79      68      55      44
    184             UI      40      39      28      26      23      17      17      17      12       7
                    *

    185             KK  CP2223
    186             KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
    187             HC       3
                    *

    188             KK  RT2226   ROUTE   REACH
    189             KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
    190             RS       6    FLOW      -1
    191             RC   0.050   0.040   0.050    4244  0.0118 2628.00
    192             RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
    193             RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
                    *
1                                          HEC-1 INPUT                                                    PAGE  6

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

    194             KK     2B4   BASIN
    195             BA   0.212
    196             LG    0.10    0.40    6.00    0.15      15
    197             UI      24      24      54      95     134     162     183     222     281     189
    198             UI     153     136     125     114     102      92      77      67      58      56
    199             UI      50      41      36      30      28      26      22      19      18      15
                    *

    200             KK     2B5   BASIN
    201             BA   0.125
    202             LG    0.10    0.37    6.60    0.12      22
    203             UI      30     106     201     284     250     171     136     107      76      64
    204             UI      45      35      27      20      15      14       6       6       5       6
    205             UI       6       0       0       0       0       0       0       0       0       0
                    *

    206             KK  CP2425
    207             KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
    208             HC       2
                    *

    209             KK  RT4526   ROUTE   REACH
    210             KM   ROUTE FLOW FROM CP2425 TO CP2B6
    211             RS       4    FLOW      -1
    212             RC   0.060   0.045   0.060    4060  0.0113 2628.00
    213             RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
    214             RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
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                *

 215            KK     2B6   BASIN
 216            BA   0.308
 217            LG    0.10    0.38    6.40    0.13      28
 218            UI      49      85     201     308     382     512     451     312     264     236
 219            UI     198     167     129     116     101      78      63      55      47      37
 220            UI      33      25      24      24       9       9      10       9      10       9
                *

 221            KK   CP2B6
 222            KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
 223            HC       3
                *

 224            KK  RT2632   ROUTE   REACH
 225            KM   ROUTE RS2B6 TO CP3B2
 226            RS       4    FLOW      -1
 227            RC   0.070   0.050   0.070    8967  0.0221   20.00
 228            RX     0.0    68.2   216.8   370.2   450.7   491.4   528.9   590.1
 229            RY    20.0    16.0    13.8    14.0    13.2    14.0    18.0    20.0
                *
1                                          HEC-1 INPUT                                          PAGE  7

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

 230            KK     3B1   BASIN
 231            BA   0.098
 232            LG    0.10    0.36    5.00    0.23      15
 233            UI      13      15      44      67      89     103     134     136      88      77
 234            UI      69      61      53      46      37      32      31      25      21      17
 235            UI      15      15      10      10       9       6       7       7       4       3
                *

 236            KK  RT3132   ROUTE   REACH
 237            KM   ROUTE FLOW FROM 3B1 TO CP3B2
 238            RS       4    FLOW      -1
 239            RC   0.060   0.045   0.060    3657  0.0202   52.00
 240            RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
 241            RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
                *

 242            KK     3B2   BASIN
 243            BA   0.342
 244            LG    0.10    0.39    5.70    0.17      18
 245            UI      38      39      89     152     217     260     296     357     454     305
 246            UI     246     220     202     183     164     149     124     108      96      88
 247            UI      81      67      58      48      45      42      36      29      29      24
                *

 248            KK   CP3B2
 249            KM   COMBINE FLOW FROM RT3132, RT2632, AND 3B2
 250            HC       3
                *

 251            KK  RT3282   ROUTE   REACH
 252            KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
 253            RS       9    FLOW      -1
 254            RC   0.060   0.045   0.060     329  0.0213 2419.60
 255            RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
 256            RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
                *

 257            KK   CP8B2
 258            KM   COMBINE HYDROGRAPHS FROM RT3282 AND CP8B2A
 259            HC       2
                *

 260            KK  RT829B   ROUTE   REACH
 261            KM   ROUTE FLOW FROM CP8B2 TO CP9B
 262            RS       9    FLOW      -1
 263            RC   0.060   0.045   0.060     507  0.0178 2410.00
 264            RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
 265            RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
                *
1                                          HEC-1 INPUT                                          PAGE  8

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

 266            KK    CP9B
 267            KM   COMBINE HYDROGRAPHS FROM CP9BA, RT819B, AND RT829B
 268            KO                                      21
 269            HC       3
                *
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270          KK   1B36B
271          KM   RETRIEVE FLOW FROM 1B3
272          DR    1B3R
             *

273          KK  RT136B   ROUTE   REACH
274          KM   ROUTE FLOW FROM 1B3 TO CP_6B
275          RS      12    FLOW      -1
276          RC   0.060   0.045   0.060    8533  0.0234   86.50
277          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
278          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
             *

279          KK      6B   BASIN
280          BA   0.204
281          LG    0.10    0.36    6.80    0.11      18
282          UI      23      23      53      91     129     155     177     213     270     182
283          UI     147     132     120     109      98      88      75      64      57      53
284          UI      48      40      35      28      27      25      22      18      17      15
             *

285          KK    CP6B
286          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
287          KO                                    21
288          HC       2
             *

289          KK      1N   BASIN
290          BA   0.131
291          KO                                    21
292          LG    0.10    0.39    6.20    0.14      40
293          UI     106     378     477     273     173     113      65      42      27      12
294          UI      11      11       0       0       0       0       0       0       0       0
295          UI       0       0       0       0       0       0       0       0       0       0
             *

296          KK      4A   BASIN
297          BA   0.082
298          KO                                    21
299          LG    0.10    0.39    5.80    0.16      21
300          UI      13      19      48      75      93     118     132      86      71      64
301          UI      54      47      38      31      28      24      19      15      14      11
302          UI      10       8       6       6       7       2       3       2       2       3
             *
1                                          HEC-1 INPUT                                          PAGE  9

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

303          KK      2A   BASIN
304          BA   0.031
305          KO                                    21
306          LG    0.10    0.39    6.20    0.14      15
307          UI       7      18      38      51      70      44      35      29      24      17
308          UI      15      11       9       7       5       5       3       3       2       1
309          UI       1       2       1       1       0       0       0       0       0       0
             *

310          KK      1S   BASIN
311          BA   0.188
312          LG    0.10    0.39    6.20    0.14      37
313          UI      42     132     263     359     417     257     213     170     128     100
314          UI      82      58      48      36      29      21      21       9       8       8
315          UI       8       8       8       0       0       0       0       0       0       0
             *

316          KK  RT1S2S   ROUTE   REACH
317          KM   ROUTE FLOW FROM 1S TO CP_2S
318          RS       3    FLOW      -1
319          RC   0.060   0.045   0.060    4833  0.0252  100.00
320          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
321          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
             *

322          KK      2S   BASIN
323          BA   0.092
324          LG    0.10    0.38    5.60    0.18      16
325          UI      17      39      88     122     161     167     107      90      77      61
326          UI      49      41      34      25      21      18      14      12       8       9
327          UI       6       3       3       3       3       4       3       0       0       0
             *

328          KK    CP2S
329          KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
330          HC       2
             *
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331          KK  RT2S3S   ROUTE   REACH
332          KM   ROUTE FLOW FROM 2S TO CP_3S
333          RS       5    FLOW      -1
334          RC   0.050   0.050   0.050    2774  0.0231   29.10
335          RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
336          RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
             *

337          KK      3S   BASIN
338          BA   0.087
339          LG    0.10    0.37    5.30    0.20      15
340          UI      15      32      73     105     134     165     103      87      73      63
341          UI      50      39      35      29      21      18      17      11      10       8
342          UI       7       6       3       3       3       3       3       3       3       0
             *
1                                          HEC-1 INPUT                                          PAGE 10

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

343          KK    CP3S
344          KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
345          HC       2
             *

346          KK  RT3S4N   ROUTE   REACH
347          KM   ROUTE FLOW FROM CP3S TO CP4N
348          RS       4    FLOW      -1
349          RC   0.060   0.045   0.060    1040  0.0250 2472.00
350          RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
351          RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
             *
             *

352          KK      3N   BASIN
353          BA   0.110
354          LG    0.10    0.39    6.20    0.14      35
355          UI      19      41      91     133     170     207     132     110      93      79
356          UI      63      50      44      36      27      23      20      15      13       9
357          UI      10       7       4       4       4       4       3       4       4       0
             *

358          KK  RT34N1   ROUTE   REACH
359          KM   ROUTE FLOW FROM 3N TO CP4N1
360          RS       5    FLOW      -1
361          RC   0.060   0.045   0.060     940  0.0277 2542.00
362          RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
363          RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
             *

364          KK     4N1   BASIN
365          BA   0.050
366          LG    0.10    0.38    5.60    0.18      17
367          UI      10      25      54      73     105      77      58      49      39      31
368          UI      25      22      16      12      11       7       7       5       4       3
369          UI       2       2       2       2       2       2       0       0       0       0
             *

370          KK   CP4N1
371          KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
372          KO                                      21
373          HC       2
             *

374          KK  RT4N14   ROUTE   REACH
375          KM   ROUTE FLOW FROM CP4N1 TO CP4N
376          RS       3    FLOW      -1
377          RC   0.060   0.045   0.060    3010  0.0239   72.70
378          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
379          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *
1                                          HEC-1 INPUT                                          PAGE 11

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

380          KK      2N   BASIN
381          BA   0.205
382          LG    0.10    0.40    6.00    0.15      29
383          UI      38      89     196     271     359     370     239     199     172     138
384          UI     108      91      76      57      46      41      29      27      18      19
385          UI      14       7       7       8       7       7       8       0       0       0
             *

386          KK  RT2N4N   ROUTE   REACH
387          KM   ROUTE FLOW FROM 2N TO CP_4N
388          RS       4    FLOW      -1
```

```
389          RC   0.060   0.045   0.060    3992  0.0256   72.70
390          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
391          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

392          KK      4N   BASIN
393          BA   0.074
394          LG    0.10    0.36    6.80    0.11      15
395          UI      15      36      81     108     155     115      85      73      58      46
396          UI      36      31      25      18      16      11      10       7       7       5
397          UI       3       2       3       3       3       2       0       0       0       0
             *

398          KK    CP4N
399          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
400          KO                                      21
401          HC       4
402          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   13         1B1
               V
               V
   23      RT1112
               .
               .
   29          .         1B2
               .           .
               .           .
   35       CP1B2............
               .
               .
   38          .         1B3
               .           .
               .           .
   46          .           .------->    1B3R
   44          .        1B3L
               .           V
               .           V
   49          .      RT1314
               .           .
               .           .
   55          .           .         1B4
               .           .           .
               .           .           .
   61          .       CP1B4............
               .           .
               .           .
   64      CP1214............
               V
               V
   67      RT1452
               .
               .
   73          .         5B2
               .           .
               .           .
   81       CP5B2............
               V
               V
   84      RT529B
               .
               .
   90          .         5B1
               .           V
               .           V
   96          .      RT519B
               .           .
               .           .
  102          .           .          9B
               .           .           .
               .           .           .
  109       CP9BA........................
               .
               .
  112          .         8B1
               .           V
               .           V
  119          .      RT819B
               .           .
               .           .
  125          .           .         4B1
```

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                .         .         V
                .         .         V
131             .         .     RT4142
                .         .         .
                .         .         .
137             .         .         .        4B2
                .         .         .         .
                .         .         .         .
143             .         .      CP4B2............
                .         .         V
                .         .         V
146             .         .     RT4282
                .         .         .
                .         .         .
152             .         .         .        8B2
                .         .         .         .
                .         .         .         .
158             .         .     CP8B2A...........
                .         .         .
                .         .         .
161             .         .         .        2B1
                .         .         .         V
                .         .         .         V
167             .         .         .     RT2122
                .         .         .         .
                .         .         .         .
173             .         .         .         .         2B2
                .         .         .         .          .
                .         .         .         .          .
179             .         .         .         .          .         2B3
                .         .         .         .          .          .
                .         .         .         .          .          .
185             .         .         .     CP2223......................
                .         .         .         V
                .         .         .         V
188             .         .         .     RT2226
                .         .         .         .
                .         .         .         .
194             .         .         .         .         2B4
                .         .         .         .          .
                .         .         .         .          .
200             .         .         .         .          .         2B5
                .         .         .         .          .          .
                .         .         .         .          .          .
206             .         .         .         .     CP2425...........
                .         .         .         .          V
                .         .         .         .          V
209             .         .         .         .     RT4526
                .         .         .         .          .
                .         .         .         .          .
215             .         .         .         .          .         2B6
                .         .         .         .          .          .
                .         .         .         .          .          .
221             .         .         .      CP2B6......................
                .         .         .         V
                .         .         .         V
224             .         .         .     RT2632
                .         .         .         .
                .         .         .         .
230             .         .         .         .         3B1
                .         .         .         .          V
                .         .         .         .          V
236             .         .         .         .     RT3132
                .         .         .         .          .
                .         .         .         .          .
242             .         .         .         .          .         3B2
                .         .         .         .          .          .
                .         .         .         .          .          .
248             .         .         .      CP3B2......................
                .         .         .         V
                .         .         .         V
251             .         .         .     RT3282
                .         .         .         .
                .         .         .         .
257             .         .      CP8B2............
                .         .         V
                .         .         V
260             .         .     RT829B
                .         .         .
                .         .         .
266          CP9B......................
                .
                .
272             .         .<-------    1B3R
270             .      1B36B
                .         V
                .         V
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273          .      RT136B
             .          .
             .          .
279          .          .          6B
             .          .           .
             .          .           .
285          .        CP6B............
             .          .
             .          .
289          .          .          1N
             .          .           .
             .          .           .
296          .          .           .          4A
             .          .           .           .
             .          .           .           .
303          .          .           .           .          2A
             .          .           .           .           .
             .          .           .           .           .
310          .          .           .           .           .          1S
             .          .           .           .           .           V
             .          .           .           .           .           V
316          .          .           .           .           .      RT1S2S
             .          .           .           .           .           .
             .          .           .           .           .           .
322          .          .           .           .           .           .          2S
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
328          .          .           .           .           .        CP2S............
             .          .           .           .           .           V
             .          .           .           .           .           V
331          .          .           .           .           .      RT2S3S
             .          .           .           .           .           .
             .          .           .           .           .           .
337          .          .           .           .           .           .          3S
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
343          .          .           .           .           .        CP3S............
             .          .           .           .           .           V
             .          .           .           .           .           V
346          .          .           .           .           .      RT3S4N
             .          .           .           .           .           .
             .          .           .           .           .           .
352          .          .           .           .           .           .          3N
             .          .           .           .           .           .           V
             .          .           .           .           .           .           V
358          .          .           .           .           .           .      RT34N1
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
364          .          .           .           .           .           .           .          4N1
             .          .           .           .           .           .           .           .
             .          .           .           .           .           .           .           .
370          .          .           .           .           .           .      CP4N1............
             .          .           .           .           .           .           V
             .          .           .           .           .           .           V
374          .          .           .           .           .           .      RT4N14
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
380          .          .           .           .           .           .           .          2N
             .          .           .           .           .           .           .           V
             .          .           .           .           .           .           .           V
386          .          .           .           .           .           .           .      RT2N4N
             .          .           .           .           .           .           .           .
             .          .           .           .           .           .           .           .
392          .          .           .           .           .           .           .           .          4N
             .          .           .           .           .           .           .           .           .
             .          .           .           .           .           .           .           .           .
398          .          .           .           .           .        CP4N.................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUL   1997              *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   01JUL06  TIME  14:57:46  *
*                                      *
****************************************
```

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

Project ID: NS_6FN - Major Basin: 01 - Return Period: 100 Years
PROJECT: RIO VERDE AREA DRAINAGE MASTER PLAN FILE NAME: NS_6FN.DAT
MODE EVENT: 100-year, 6-hour Future Condition Model
DEVELOPER: Dibble & Associates, Inc. DATE: June 30, 2006

```
                    DESCRIPTION: This model assumes that Black Hills Tank is breached indicating
                                 that no storage routing analysis is made.
                    NOTES:       Combines CP9BA and CP8B2A were added to evaluate the flows
                                 from two distinct sub-areas prior to major combines (3/11/2004).

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           3  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        1557  ENDING TIME
                     ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL     .05 HOURS
                       TOTAL TIME BASE   39.95 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


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


            **************
            *            *
 266 KK     *      CP9B  *
            *            *
            **************

 268 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 285 KK     *      CP6B  *
            *            *
            **************

 287 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 289 KK     *        1N  *        BASIN
            *            *
            **************
```

```
291 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
296 KK     *        4A  *        BASIN
           *            *
           **************

298 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
303 KK     *        2A  *        BASIN
           *            *
           **************

305 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
370 KK     *     CP4N1  *
           *            *
           **************

372 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


           **************
           *            *
398 KK     *      CP4N  *
           *            *
           **************
```

```
400 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .050  TIME INTERVAL IN HOURS

1
                                   RUNOFF SUMMARY
                          FLOW IN CUBIC FEET PER SECOND
                        TIME IN HOURS,  AREA IN SQUARE MILES

                                    PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
        OPERATION        STATION    FLOW    PEAK                                           AREA     STAGE    MAX STAGE
+                                                        6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          1B1      631.   4.15          104.        26.         16.       .49
        ROUTED TO
+                        RT1112     510.   4.90          103.        26.         16.       .49
+                                                                                            80.98       4.90
        HYDROGRAPH AT
+                          1B2      156.   4.40           30.         7.          4.       .16
        2 COMBINED AT
+                        CP1B2      604.   4.85          131.        34.         20.       .65
        HYDROGRAPH AT
+                          1B3      181.   4.10           29.         7.          4.       .13
        DIVERSION TO
+                         1B3R      178.   4.10           29.         7.          4.       .13
        HYDROGRAPH AT
+                         1B3L        3.   4.10            0.         0.          0.       .13
        ROUTED TO
+                        RT1314        1.   5.55            0.         0.          0.       .13
+                                                                                            80.00       5.55
        HYDROGRAPH AT
+                          1B4      158.   4.25           28.         7.          4.       .14
        2 COMBINED AT
+                        CP1B4      158.   4.25           28.         7.          4.       .27
        2 COMBINED AT
+                       CP1214      677.   4.80          159.        41.         24.       .92
        ROUTED TO
+                        RT1452     660.   4.95          158.        41.         24.       .92
+                                                                                            81.05       4.95
        HYDROGRAPH AT
+                          5B2      158.   4.20           28.         7.          4.       .12
        2 COMBINED AT
+                        CP5B2      707.   4.95          185.        47.         29.      1.05
        ROUTED TO
+                       RT529B      674.   5.25          185.        47.         29.      1.05
+                                                                                            88.30       5.25
        HYDROGRAPH AT
+                          5B1      136.   4.15           23.         6.          3.       .10
        ROUTED TO
+                       RT519B      103.   4.70           23.         6.          3.       .10
+                                                                                            87.72       4.70
        HYDROGRAPH AT
+                           9B      208.   4.30           38.         9.          6.       .20
        3 COMBINED AT
+                        CP9BA      778.   5.20          244.        63.         38.      1.35
        HYDROGRAPH AT
+                          8B1       97.   4.10           14.         4.          2.       .08
        ROUTED TO
+                       RT819B       97.   4.15           14.         4.          2.       .08
```

```
+                                                                                                  59.67        4.15

          HYDROGRAPH AT
+                          4B1      370.   4.35        68.       17.       10.       .37

          ROUTED TO
+                       RT4142      349.   4.60        68.       17.       10.       .37
+                                                                                                  60.37        4.60

          HYDROGRAPH AT
+                          4B2      266.   4.25        45.       11.        7.       .24

          2 COMBINED AT
+                        CP4B2      545.   4.50       112.       28.       17.       .61

          ROUTED TO
+                       RT4282      535.   4.60       112.       28.       17.       .61
+                                                                                                  60.72        4.60

          HYDROGRAPH AT
+                          8B2       80.   4.15        12.        3.        2.       .06

          2 COMBINED AT
+                       CP8B2A      571.   4.60       124.       31.       19.       .67

          HYDROGRAPH AT
+                          2B1      609.   4.15        97.       24.       15.       .47

          ROUTED TO
+                       RT2122      551.   4.40        97.       24.       15.       .47
+                                                                                                2701.96        4.40

          HYDROGRAPH AT
+                          2B2      568.   4.30       103.       26.       16.       .53

          HYDROGRAPH AT
+                          2B3      301.   4.25        52.       13.        8.       .26

          3 COMBINED AT
+                       CP2223     1394.   4.35       252.       63.       38.      1.26

          ROUTED TO
+                       RT2226     1371.   4.50       251.       63.       38.      1.26
+                                                                                                2622.59        4.50

          HYDROGRAPH AT
+                          2B4      228.   4.30        42.       10.        6.       .21

          HYDROGRAPH AT
+                          2B5      184.   4.10        28.        7.        4.       .13

          2 COMBINED AT
+                       CP2425      386.   4.15        70.       18.       11.       .34

          ROUTED TO
+                       RT4526      347.   4.55        70.       18.       11.       .34
+                                                                                                2621.99        4.55

          HYDROGRAPH AT
+                          2B6      404.   4.15        71.       18.       11.       .31

          3 COMBINED AT
+                       CP2B6     2004.   4.45       391.       99.       59.      1.91

          ROUTED TO
+                       RT2632     1759.   4.90       389.       99.       59.      1.91
+                                                                                                  14.97        4.90

          HYDROGRAPH AT
+                          3B1      108.   4.25        18.        5.        3.       .10

          ROUTED TO
+                       RT3132       91.   4.65        18.        5.        3.       .10
+                                                                                                  48.42        4.65

          HYDROGRAPH AT
+                          3B2      367.   4.30        67.       17.       10.       .34

          3 COMBINED AT
+                       CP3B2     2011.   4.85       472.      120.       72.      2.35

          ROUTED TO
+                       RT3282     2009.   4.85       472.      120.       72.      2.35
+                                                                                                1483.55        4.85

          2 COMBINED AT
+                        CP8B2     2499.   4.85       596.      152.       91.      3.02
```

```
                ROUTED TO
+                          RT829B     2501.   4.85      596.      152.      91.     3.02
+                                                                                          2409.36      4.85

                3 COMBINED AT
+                            CP9B     3167.   4.85      853.      218.     131.     4.44

                HYDROGRAPH AT
+                           1B36B      178.   4.10       29.        7.       4.      .00

                ROUTED TO
+                         RT136B      153.   4.75       29.        7.       4.      .00
+                                                                                            84.17      4.75

                HYDROGRAPH AT
+                             6B      233.   4.30       44.       11.       7.      .20

                2 COMBINED AT
+                            CP6B      325.   4.60       72.       18.      11.      .20

                HYDROGRAPH AT
+                             1N      217.   4.00       33.        8.       5.      .13

                HYDROGRAPH AT
+                             4A      101.   4.20       17.        4.       3.      .08

                HYDROGRAPH AT
+                             2A       43.   4.10        6.        2.       1.      .03

                HYDROGRAPH AT
+                             1S      277.   4.10       46.       12.       7.      .19

                ROUTED TO
+                          RT1S2S      258.   4.30       46.       12.       7.      .19
+                                                                                            93.02      4.30

                HYDROGRAPH AT
+                             2S      118.   4.15       18.        5.       3.      .09

                2 COMBINED AT
+                            CP2S      367.   4.25       64.       16.      10.      .28

                ROUTED TO
+                          RT2S3S      360.   4.40       64.       16.      10.      .28
+                                                                                            25.09      4.40

                HYDROGRAPH AT
+                             3S      109.   4.15       17.        4.       3.      .09

                2 COMBINED AT
+                            CP3S      451.   4.35       81.       20.      12.      .37

                ROUTED TO
+                          RT3S4N      449.   4.40       81.       20.      12.      .37
+                                                                                          2469.94      4.40

                HYDROGRAPH AT
+                             3N      151.   4.15       27.        7.       4.      .11

                ROUTED TO
+                          RT34N1      150.   4.20       27.        7.       4.      .11
+                                                                                          2540.49      4.20

                HYDROGRAPH AT
+                            4N1       66.   4.10       10.        3.       2.      .05

                2 COMBINED AT
+                           CP4N1      215.   4.15       37.        9.       6.      .16

                ROUTED TO
+                          RT4N14      201.   4.35       37.        9.       6.      .16
+                                                                                            70.19      4.35

                HYDROGRAPH AT
+                             2N      278.   4.15       47.       12.       7.      .20

                ROUTED TO
+                          RT2N4N      262.   4.35       47.       12.       7.      .20
+                                                                                            70.27      4.35

                HYDROGRAPH AT
+                             4N      103.   4.10       16.        4.       2.      .07

                4 COMBINED AT
+                            CP4N      993.   4.35      180.       45.      27.      .81
```

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

D.6.3 NORTH-SOUTH BASIN, WITHOUT BLACK HILLS TANK

(C) 100-Year, 24-Hour Event, Existing Condition Model

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   01JUL06  TIME  15:05:23  *                                    *          (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   Project ID: NS_24EN - Major Basin: 01 - Return Period: 100 Years
        2           ID   PROJECT:     RIO VERDE AREA DRAINAGE MASTER PLAN       FILE NAME: NS_24EN.DAT
        3           ID   MODE EVENT:  100-year, 24-hour Existing Condition Model
        4           ID   DEVELOPER:   Dibble & Associates, Inc.                 DATE:June 30, 2006
        5           ID   DESCRIPTION: This model assumes that Black Hills Tank is breached indicating
        6           ID                that no storage routing analysis is made.
        7           ID   NOTES:       Combines CP9BA and CP8B2A were added to evaluate the flows
        8           ID                from two distinct sub-areas prior to major combines (3/11/2004).
        9           ID
                    *DIAGRAM
       10           IT       3                     800
       11           IO       5
       12           IN      15
                    *
                    *

       13           KK     1B1   BASIN
       14           BA   0.494
       15           PB   4.472
       16           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
       17           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
       18           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
       19           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
       20           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       21           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       22           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       23           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
       24           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
       25           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
       26           LG    0.15    0.40    6.00    0.18       4
       27           UI      76     120     286     453     560     709     798     514     429     383
       28           UI     330     279     228     191     169     142     112      95      83      69
       29           UI      58      50      37      37      37      16      15      14      15      15
                    *

       30           KK  RT1112   ROUTE   REACH
       31           KM   ROUTE FLOW FROM 1B1 TO CP1B2
       32           RS       9    FLOW      -1
       33           RC   0.060   0.045   0.060   10466  0.0220   82.30
       34           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
       35           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

       36           KK     1B2   BASIN
       37           BA   0.161
       38           LG    0.15    0.38    5.60    0.22       0
       39           UI      14      13      14      37      51      68      84      93     103     115
       40           UI     141     162     112      93      81      79      71      68      62      56
       41           UI      53      48      42      36      34      32      31      29      23      22
```

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                    *
1                                          HEC-1 INPUT                                                    PAGE  2

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

        42          KK   CP1B2
        43          KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
        44          HC       2
                    *

        45          KK     1B3   BASIN
        46          BA   0.129
        47          LG    0.15    0.40    6.00    0.18      11
        48          UI      24      56     123     171     225     233     151     125     108      88
        49          UI      67      58      47      36      29      26      18      17      12      12
        50          UI       8       5       4       5       5       4       5       0       0       0
                    *

        51          KK    1B3L
        52          KM   DIVERT FLOW FROM 1B3 TO CP6B
        53          DT    1B3R
        54          DI      25      75     150     300     400     600
        55          DQ      25      75     149     291     383     560
                    *

        56          KK  RT1314   ROUTE   REACH
        57          KM   ROUTE FLOW FROM 1B3 TO CP1B4
        58          RS       6    FLOW      -1
        59          RC   0.045   0.040   0.045    7191  0.0225   82.30
        60          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
        61          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

        62          KK     1B4   BASIN
        63          BA   0.141
        64          LG    0.15    0.39    5.80    0.19       0
        65          UI      16      15      37      63      89     108     122     147     187     126
        66          UI     101      91      83      76      68      60      52      44      40      36
        67          UI      33      28      24      20      19      17      15      12      12      10
                    *

        68          KK   CP1B4
        69          KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
        70          HC       2
                    *

        71          KK  CP1214
        72          KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
        73          HC       2
                    *

        74          KK  RT1452   ROUTE   REACH
        75          KM   ROUTE FLOW FROM CP1214 TO CP5B2
        76          RS       3    FLOW      -1
        77          RC   0.050   0.050   0.050    2610  0.0207   82.30
        78          RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
        79          RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *
1                                          HEC-1 INPUT                                                    PAGE  3

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

        80          KK     5B2   BASIN
        81          BA   0.124
        82          LG    0.15    0.35    7.00    0.12       0
        83          UI      17      19      55      85     112     131     169     172     112      97
        84          UI      87      78      67      58      47      41      38      32      26      22
        85          UI      19      19      13      13      10       9       8       8       6       3
        86          UI       3       3       3       4       3       3       3       3       0       0
        87          UI       0       0       0       0       0       0       0       0       0       0
                    *

        88          KK   CP5B2
        89          KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
        90          HC       2
                    *

        91          KK  RT529B   ROUTE   REACH
        92          KM   ROUTE FLOW FROM CP5B2 TO CP9B
        93          RS       6    FLOW      -1
        94          RC   0.045   0.040   0.045    5011  0.0216   92.00
        95          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
        96          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
                    *
```

```
 97          KK     5B1   BASIN
 98          BA   0.099
 99          LG    0.15    0.32    7.60    0.10       0
100          UI      15      24      57      91     113     141     161     103      85      77
101          UI      67      56      45      38      34      29      22      20      16      14
102          UI      11      11       7       7       7       4       3       3       3       3
             *

103          KK  RT519B   ROUTE   REACH
104          KM   ROUTE FLOW FROM CP5B2 TO CP9B
105          RS       3    FLOW      -1
106          RC   0.050   0.050   0.050    5346  0.0213   92.00
107          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
108          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

109          KK      9B   BASIN
110          BA   0.200
111          LG    0.14    0.36    5.00    0.27       2
112          UI      21      21      43      76     109     134     154     177     225     227
113          UI     152     129     120     110      97      90      81      70      60      53
114          UI      49      47      40      35      27      27      23      23      18      16
115          UI      17      13      10      10      11      10       7       4       4       4
             *

116          KK   CP9BA
117          KM   COMBINE HYDROGRAPHS FROM RT529B, RT519B, AND 9B
118          HC       3
             *
```

1 HEC-1 INPUT PAGE 4

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

119          KK     8B1   BASIN
120          BA   0.076
121          LG    0.14    0.36    5.00    0.27       3
122          UI      14      33      73     100     133     137      89      74      64      51
123          UI      40      34      28      21      17      15      11      10       7       6
124          UI       5       3       3       3       2       3       3       0       0       0
125          UI       0       0       0       0       0       0       0       0       0       0
             *

126          KK  RT819B   ROUTE   REACH
127          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
128          RS       3    FLOW      -1
129          RC   0.050   0.050   0.050     677  0.0177   64.70
130          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
131          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

132          KK     4B1   BASIN
133          BA   0.368
134          LG    0.15    0.38    5.40    0.23       0
135          UI      33      34      44     102     139     189     219     245     272     331
136          UI     402     284     228     205     189     175     160     149     136     122
137          UI     108      94      84      80      75      71      57      53      43      43
             *

138          KK  RT4142   ROUTE   REACH
139          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
140          RS       4    FLOW      -1
141          RC   0.050   0.050   0.050    6204  0.0213   64.70
142          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
143          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

144          KK     4B2   BASIN
145          BA   0.240
146          LG    0.15    0.36    5.00    0.28       0
147          UI      29      29      77     126     177     208     238     316     278     198
148          UI     170     153     139     124     110      94      78      70      65      57
149          UI      47      38      36      32      29      22      22      19      14      14
             *

150          KK   CP4B2
151          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
152          HC       2
             *

153          KK  RT4282   ROUTE   REACH
154          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
155          RS       3    FLOW      -1
156          RC   0.050   0.050   0.050    3773  0.0217   64.70
157          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
158          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *
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1                                        HEC-1 INPUT                                                    PAGE  5

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

   159          KK     8B2   BASIN
   160          BA   0.064
   161          LG    0.15    0.36    5.00    0.27       1
   162          UI      11      20      48      70      86     121      81      64      55      47
   163          UI      40      31      26      24      18      14      12      11       8       8
   164          UI       5       6       4       2       2       2       2       2       2       2
                *

   165          KK  CP8B2A
   166          KM   COMBINE HYDROGRAPHS FROM RT4282 AND 8B2
   167          HC       2
                *

   168          KK     2B1   BASIN
   169          BA   0.472
   170          LG    0.15    0.40    6.00    0.18       1
   171          UI      75     130     308     473     584     786     690     478     406     360
   172          UI     305     256     196     178     156     119      97      83      72      58
   173          UI      51      37      37      36      14      15      14      15      14      15
                *

   174          KK  RT2122   ROUTE   REACH
   175          KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
   176          RS       3    FLOW      -1
   177          RC   0.060   0.045   0.060    4909  0.0159 2708.00
   178          RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
   179          RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
                *

   180          KK     2B2   BASIN
   181          BA   0.533
   182          LG    0.15    0.39    5.70    0.20       1
   183          UI      54      55     101     186     273     340     391     438     539     639
   184          UI     424     350     319     294     265     244     221     196     171     144
   185          UI     132     125     116      97      87      69      68      60      59      44
                *

   186          KK     2B3   BASIN
   187          BA   0.259
   188          LG    0.15    0.40    6.00    0.18       0
   189          UI      32      32      95     149     202     239     281     374     267     205
   190          UI     186     163     149     130     113      95      80      76      69      54
   191          UI      45      40      36      33      25      25      21      16      16      16
                *

   192          KK  CP2223
   193          KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
   194          HC       3
                *
1                                        HEC-1 INPUT                                                    PAGE  6

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

   195          KK  RT2226   ROUTE   REACH
   196          KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
   197          RS       6    FLOW      -1
   198          RC   0.050   0.040   0.050    4244  0.0118 2628.00
   199          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
   200          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
                *

   201          KK     2B4   BASIN
   202          BA   0.212
   203          LG    0.15    0.40    6.00    0.18       0
   204          UI      21      21      36      70     100     127     148     164     198     249
   205          UI     182     146     125     118     107      97      89      82      70      61
   206          UI      54      50      48      44      35      31      27      25      23      23
                *

   207          KK     2B5   BASIN
   208          BA   0.125
   209          LG    0.15    0.37    6.60    0.14       7
   210          UI      28      88     174     239     278     171     140     114      85      66
   211          UI      55      39      32      24      19      14      14       6       5       5
   212          UI       6       5       5       0       0       0       0       0       0       0
                *

   213          KK  CP2425
   214          KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
   215          HC       2
                *
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216          KK  RT4526   ROUTE   REACH
217          KM   ROUTE FLOW FROM CP2425 TO CP2B6
218          RS       4    FLOW      -1
219          RC   0.060   0.045   0.060    4060  0.0113 2628.00
220          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
221          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
             *

222          KK     2B6   BASIN
223          BA   0.308
224          LG    0.15    0.38    6.40    0.16      13
225          UI      43      57     147     235     300     349     489     368     273     241
226          UI     213     189     161     134     111     101      90      71      56      52
227          UI      47      36      33      29      21      21      21      13       8       9
             *

228          KK   CP2B6
229          KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
230          HC       3
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

231          KK  RT2632   ROUTE   REACH
232          KM   ROUTE RS2B6 TO CP3B2
233          RS       4    FLOW      -1
234          RC   0.070   0.050   0.070    8967  0.0221   20.00
235          RX     0.0    68.2   216.8   370.2   450.7   491.4   528.9   590.1
236          RY    20.0    16.0    13.8    14.0    13.2    14.0    18.0    20.0
             *

237          KK     3B1   BASIN
238          BA   0.098
239          LG    0.15    0.36    5.00    0.28       0
240          UI      12      11      32      51      73      85      97     129     113      81
241          UI      70      63      56      51      45      38      32      28      27      23
242          UI      19      16      15      13      11       9       9       8       6       6
             *

243          KK  RT3132   ROUTE   REACH
244          KM   ROUTE FLOW FROM 3B1 TO CP3B2
245          RS       4    FLOW      -1
246          RC   0.060   0.045   0.060    3657  0.0202   52.00
247          RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
248          RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
             *

249          KK     3B2   BASIN
250          BA   0.342
251          LG    0.15    0.39    5.70    0.20       3
252          UI      35      34      66     119     175     218     252     280     346     410
253          UI     272     225     204     189     170     157     141     126     110      93
254          UI      84      80      75      62      56      45      43      38      38      28
             *

255          KK   CP3B2
256          KM   COMBINE FLOW FROM RT3132, RT2632, AND 3B2
257          HC       3
             *

258          KK  RT3282   ROUTE   REACH
259          KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
260          RS       9    FLOW      -1
261          RC   0.060   0.045   0.060     329  0.0213 2419.60
262          RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
263          RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
             *

264          KK   CP8B2
265          KM   COMBINE HYDROGRAPHS FROM RT3282 AND CP8B2A
266          HC       2
             *
1                                          HEC-1 INPUT                                          PAGE  8

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

267          KK  RT829B   ROUTE   REACH
268          KM   ROUTE FLOW FROM CP8B2 TO CP9B
269          RS       9    FLOW      -1
270          RC   0.060   0.045   0.060     507  0.0178 2410.00
271          RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
272          RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
             *
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```
273          KK    CP9B
274          KM   COMBINE HYDROGRAPHS FROM CP9BA, RT819B, AND RT829B
275          KO                                      21
276          HC       3
             *

277          KK   1B36B
278          KM   RETRIEVE FLOW FROM 1B3
279          DR    1B3R
             *

280          KK  RT136B   ROUTE   REACH
281          KM   ROUTE FLOW FROM 1B3 TO CP_6B
282          RS      12    FLOW      -1
283          RC   0.060   0.045   0.060    8533  0.0234   86.50
284          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
285          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
             *

286          KK      6B   BASIN
287          BA   0.204
288          LG    0.15    0.36    6.80    0.13       3
289          UI      21      21      38      72     104     130     150     168     205     245
290          UI     162     135     122     112     101      94      84      76      65      55
291          UI      51      47      45      37      34      26      26      23      22      17
             *

292          KK    CP6B
293          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
294          KO                                      21
295          HC       2
             *

296          KK      1N   BASIN
297          BA   0.131
298          KO                                      21
299          LG    0.15    0.39    6.20    0.17      25
300          UI      79     300     466     281     199     124      87      55      35      25
301          UI      13       9      10       0       0       0       0       0       0       0
302          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

303          KK      4A   BASIN
304          BA   0.082
305          KO                                      21
306          LG    0.15    0.39    5.80    0.19       6
307          UI      11      15      40      62      81      92     130      98      73      64
308          UI      57      50      43      36      29      27      24      19      15      14
309          UI      13       9       9       7       6       5       6       3       3       2
             *

310          KK      2A   BASIN
311          BA   0.031
312          KO                                      21
313          LG    0.15    0.39    6.20    0.17       0
314          UI       6      16      33      46      64      49      35      30      25      19
315          UI      15      14      10       7       7       5       4       3       3       2
316          UI       1       1       1       1       2       1       0       0       0       0
             *

317          KK      1S   BASIN
318          BA   0.188
319          LG    0.15    0.39    6.20    0.17      22
320          UI      38      94     203     275     393     293     216     184     148     117
321          UI      92      80      60      46      41      29      25      19      18      11
322          UI       7       7       8       7       7       7       0       0       0       0
             *

323          KK  RT1S2S   ROUTE   REACH
324          KM   ROUTE FLOW FROM 1S TO CP_2S
325          RS       3    FLOW      -1
326          RC   0.060   0.045   0.060    4833  0.0252  100.00
327          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
328          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
             *

329          KK      2S   BASIN
330          BA   0.092
331          LG    0.15    0.38    5.60    0.22       1
332          UI      16      28      69     101     124     174     115      92      79      70
333          UI      56      46      36      34      27      20      18      15      12      11
334          UI       7       8       7       2       3       3       3       3       3       3
```

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                 *

335              KK    CP2S
336              KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
337              HC       2
                 *

338              KK  RT2S3S   ROUTE   REACH
339              KM   ROUTE FLOW FROM 2S TO CP_3S
340              RS       5    FLOW      -1
341              RC   0.050   0.050   0.050    2774  0.0231   29.10
342              RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
343              RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
                 *
1                                          HEC-1 INPUT                                          PAGE 10

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

344              KK      3S   BASIN
345              BA   0.087
346              LG    0.14    0.37    5.30    0.24       2
347              UI      14      28      65      95     118     165     108      87      75      65
348              UI      54      43      35      32      26      18      17      15      11       9
349              UI       7       7       7       2       3       3       3       3       3       3
                 *

350              KK    CP3S
351              KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
352              HC       2
                 *

353              KK  RT3S4N   ROUTE   REACH
354              KM   ROUTE FLOW FROM CP3S TO CP4N
355              RS       4    FLOW      -1
356              RC   0.060   0.045   0.060    1040  0.0250 2472.00
357              RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
358              RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
                 *
                 *

359              KK      3N   BASIN
360              BA   0.110
361              LG    0.15    0.39    6.20    0.17      20
362              UI      17      31      72     110     136     183     161     111      95      84
363              UI      71      59      46      42      36      28      22      20      17      13
364              UI      12       8       9       8       4       3       4       3       3       4
                 *

365              KK  RT34N1   ROUTE   REACH
366              KM   ROUTE FLOW FROM 3N TO CP4N1
367              RS       5    FLOW      -1
368              RC   0.060   0.045   0.060     940  0.0277 2542.00
369              RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
370              RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
                 *

371              KK     4N1   BASIN
372              BA   0.050
373              LG    0.15    0.38    5.60    0.22       2
374              UI       9      18      42      60      78      94      59      50      43      35
375              UI      29      23      20      16      13      10      10       6       6       4
376              UI       4       4       1       2       2       1       2       2       2       0
                 *

377              KK   CP4N1
378              KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
379              KO                                      21
380              HC       2
                 *
1                                          HEC-1 INPUT                                          PAGE 11

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

381              KK  RT4N14   ROUTE   REACH
382              KM   ROUTE FLOW FROM CP4N1 TO CP4N
383              RS       3    FLOW      -1
384              RC   0.060   0.045   0.060    3010  0.0239   72.70
385              RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
386              RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
                 *

387              KK      2N   BASIN
388              BA   0.205
389              LG    0.15    0.40    6.00    0.18      14
390              UI      36      76     171     246     318     386     245     204     173     148
```

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391          UI     118      93      81      67      51      43      37      28      25      17
392          UI      18      14       7       7       7       7       7       7       7       0
             *

393          KK  RT2N4N   ROUTE   REACH
394          KM   ROUTE FLOW FROM 2N TO CP_4N
395          RS       4    FLOW      -1
396          RC   0.060   0.045   0.060    3992  0.0256   72.70
397          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
398          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

399          KK      4N   BASIN
400          BA   0.074
401          LG    0.13    0.36    6.80    0.12       6
402          UI      14      31      72      97     130     134      86      71      63      50
403          UI      38      33      28      21      16      15      11       9       7       6
404          UI       5       3       3       2       3       2       3       0       0       0
             *

405          KK    CP4N
406          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
407          KO                                      21
408          HC       4
409          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    13        1B1
               V
               V
    30      RT1112
               .
               .
    36           .         1B2
                 .           .
                 .           .
    42       CP1B2............
                 .
                 .
    45           .         1B3
                 .           .
                 .           .
    53           .           .------->    1B3R
    51           .        1B3L
                 .           V
                 .           V
    56           .      RT1314
                 .           .
                 .           .
    62           .           .         1B4
                 .           .           .
                 .           .           .
    68           .       CP1B4............
                 .           .
                 .           .
    71      CP1214............
               V
               V
    74      RT1452
               .
               .
    80           .         5B2
                 .           .
                 .           .
    88       CP5B2............
               V
               V
    91      RT529B
               .
               .
    97           .         5B1
                 .           V
                 .           V
   103           .      RT519B
                 .           .
                 .           .
   109           .           .          9B
                 .           .           .
                 .           .           .
   116       CP9BA........................
                 .
                 .
```

```
119          .        8B1
             .         V
             .         V
126          .     RT819B
             .         .
             .         .
132          .         .        4B1
             .         .         V
             .         .         V
138          .         .     RT4142
             .         .         .
             .         .         .
144          .         .         .        4B2
             .         .         .         .
             .         .         .         .
150          .         .     CP4B2............
             .         .         V
             .         .         V
153          .         .     RT4282
             .         .         .
             .         .         .
159          .         .         .        8B2
             .         .         .         .
             .         .         .         .
165          .         .     CP8B2A...........
             .         .         .
             .         .         .
168          .         .         .        2B1
             .         .         .         V
             .         .         .         V
174          .         .         .     RT2122
             .         .         .         .
             .         .         .         .
180          .         .         .         .        2B2
             .         .         .         .         .
             .         .         .         .         .
186          .         .         .         .         .        2B3
             .         .         .         .         .         .
             .         .         .         .         .         .
192          .         .         .     CP2223......................
             .         .         .         V
             .         .         .         V
195          .         .         .     RT2226
             .         .         .         .
             .         .         .         .
201          .         .         .         .        2B4
             .         .         .         .         .
             .         .         .         .         .
207          .         .         .         .         .        2B5
             .         .         .         .         .         .
             .         .         .         .         .         .
213          .         .         .         .     CP2425...........
             .         .         .         .         V
             .         .         .         .         V
216          .         .         .         .     RT4526
             .         .         .         .         .
             .         .         .         .         .
222          .         .         .         .         .        2B6
             .         .         .         .         .         .
             .         .         .         .         .         .
228          .         .         .      CP2B6......................
             .         .         .         V
             .         .         .         V
231          .         .         .     RT2632
             .         .         .         .
             .         .         .         .
237          .         .         .         .        3B1
             .         .         .         .         V
             .         .         .         .         V
243          .         .         .         .     RT3132
             .         .         .         .         .
             .         .         .         .         .
249          .         .         .         .         .        3B2
             .         .         .         .         .         .
             .         .         .         .         .         .
255          .         .         .      CP3B2......................
             .         .         .         V
             .         .         .         V
258          .         .         .     RT3282
             .         .         .         .
             .         .         .         .
264          .         .     CP8B2............
             .         .         V
             .         .         V
267          .         .     RT829B
             .         .         .
             .         .         .
```

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273        CP9B.......................
              .
              .
279           .          .<-------    1B3R
277           .      1B36B
              .          V
              .          V
280           .     RT136B
              .          .
              .          .
286           .          .          6B
              .          .           .
              .          .           .
292           .       CP6B............
              .          .
              .          .
296           .          .          1N
              .          .           .
              .          .           .
303           .          .           .          4A
              .          .           .           .
              .          .           .           .
310           .          .           .           .          2A
              .          .           .           .           .
              .          .           .           .           .
317           .          .           .           .           .         1S
              .          .           .           .           .          V
              .          .           .           .           .          V
323           .          .           .           .           .     RT1S2S
              .          .           .           .           .          .
              .          .           .           .           .          .
329           .          .           .           .           .          .          2S
              .          .           .           .           .          .           .
              .          .           .           .           .          .           .
335           .          .           .           .           .       CP2S............
              .          .           .           .           .          V
              .          .           .           .           .          V
338           .          .           .           .           .     RT2S3S
              .          .           .           .           .          .
              .          .           .           .           .          .
344           .          .           .           .           .          .          3S
              .          .           .           .           .          .           .
              .          .           .           .           .          .           .
350           .          .           .           .           .       CP3S............
              .          .           .           .           .          V
              .          .           .           .           .          V
353           .          .           .           .           .     RT3S4N
              .          .           .           .           .          .
              .          .           .           .           .          .
359           .          .           .           .           .          .          3N
              .          .           .           .           .          .           V
              .          .           .           .           .          .           V
365           .          .           .           .           .          .      RT34N1
              .          .           .           .           .          .           .
              .          .           .           .           .          .           .
371           .          .           .           .           .          .           .         4N1
              .          .           .           .           .          .           .          .
              .          .           .           .           .          .           .          .
377           .          .           .           .           .          .      CP4N1............
              .          .           .           .           .          .           V
              .          .           .           .           .          .           V
381           .          .           .           .           .          .      RT4N14
              .          .           .           .           .          .           .
              .          .           .           .           .          .           .
387           .          .           .           .           .          .           .          2N
              .          .           .           .           .          .           .           V
              .          .           .           .           .          .           .           V
393           .          .           .           .           .          .           .      RT2N4N
              .          .           .           .           .          .           .          .
              .          .           .           .           .          .           .          .
399           .          .           .           .           .          .           .          .          4N
              .          .           .           .           .          .           .          .           .
              .          .           .           .           .          .           .          .           .
405           .          .           .           .           .       CP4N.....................................
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUL   1997              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   01JUL06  TIME  15:05:23  *
 *                                      *
 ****************************************
```

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

```
                    Project ID: NS_24EN - Major Basin: 01 - Return Period: 100 Years
                    PROJECT:      RIO VERDE AREA DRAINAGE MASTER PLAN       FILE NAME: NS_24EN.DAT
                    MODE EVENT:   100-year, 24-hour Existing Condition Model
                    DEVELOPER:    Dibble & Associates, Inc.                 DATE:June 30, 2006
                    DESCRIPTION:  This model assumes that Black Hills Tank is breached indicating
                                  that no storage routing analysis is made.
                    NOTES:        Combines CP9BA and CP8B2A were added to evaluate the flows
                                  from two distinct sub-areas prior to major combines (3/11/2004).

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           3  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         800  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        1557  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .05 HOURS
                      TOTAL TIME BASE   39.95 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


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


            **************
            *            *
 273 KK     *     CP9B   *
            *            *
            **************

 275 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 292 KK     *     CP6B   *
            *            *
            **************

 294 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .050  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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                **************
                *            *
 296 KK         *     1N     *        BASIN
                *            *
                **************

 298 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT        .050  TIME INTERVAL IN HOURS


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

                **************
                *            *
 303 KK         *     4A     *        BASIN
                *            *
                **************

 305 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT        .050  TIME INTERVAL IN HOURS


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

                **************
                *            *
 310 KK         *     2A     *        BASIN
                *            *
                **************

 312 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT        .050  TIME INTERVAL IN HOURS


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

                **************
                *            *
 377 KK         *    CP4N1   *
                *            *
                **************

 379 KO              OUTPUT CONTROL VARIABLES
                           IPRNT           5  PRINT CONTROL
                           IPLOT           0  PLOT CONTROL
                           QSCAL          0.  HYDROGRAPH PLOT SCALE
                           IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                            IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                           ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                           ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                          TIMINT        .050  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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                **************
                *            *
405 KK          *     CP4N   *
                *            *
                **************

407 KO            OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                        IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       .050  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION        STATION   FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                        6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                            1B1     794.   12.15         84.         22.         13.       .49
          ROUTED TO
+                          RT1112    497.   12.90         83.         22.         13.       .49
+                                                                                            80.96      12.90
          HYDROGRAPH AT
+                            1B2     167.   12.40         23.          6.          3.       .16
          2 COMBINED AT
+                           CP1B2    569.   12.90        106.         27.         16.       .65
          HYDROGRAPH AT
+                            1B3     235.   12.10         24.          6.          4.       .13
          DIVERSION TO
+                           1B3R     230.   12.10         23.          6.          4.       .13
          HYDROGRAPH AT
+                           1B3L       6.   12.10          0.          0.          0.       .13
          ROUTED TO
+                          RT1314      1.   13.55          0.          0.          0.       .13
+                                                                                            80.01      13.55
          HYDROGRAPH AT
+                            1B4     183.   12.25         22.          6.          3.       .14
          2 COMBINED AT
+                           CP1B4    183.   12.25         22.          6.          3.       .27
          2 COMBINED AT
+                          CP1214    617.   12.85        128.         33.         20.       .92
          ROUTED TO
+                          RT1452    591.   13.05        128.         33.         20.       .92
+                                                                                            80.99      13.05
          HYDROGRAPH AT
+                            5B2     193.   12.20         23.          6.          3.       .12
          2 COMBINED AT
+                           CP5B2    617.   13.00        150.         39.         23.      1.05
          ROUTED TO
+                          RT529B    563.   13.40        150.         39.         23.      1.05
+                                                                                            88.25      13.40
          HYDROGRAPH AT
+                            5B1     170.   12.15         19.          5.          3.       .10
          ROUTED TO
+                          RT519B    100.   12.70         19.          5.          3.       .10
+                                                                                            87.71      12.70
          HYDROGRAPH AT
+                             9B     239.   12.30         31.          8.          5.       .20
          3 COMBINED AT
```

```
+                    CP9BA     630.  13.35     199.     51.     31.    1.35
        HYDROGRAPH AT
+                      8B1     132.  12.10      12.      3.      2.     .08
        ROUTED TO
+                   RT819B     132.  12.15      12.      3.      2.     .08
+                                                                   59.81    12.15
        HYDROGRAPH AT
+                      4B1     401.  12.35      53.     13.      8.     .37
        ROUTED TO
+                   RT4142     355.  12.60      53.     13.      8.     .37
+                                                                   60.38    12.60
        HYDROGRAPH AT
+                      4B2     310.  12.25      35.      9.      5.     .24
        2 COMBINED AT
+                    CP4B2     505.  12.55      88.     22.     13.     .61
        ROUTED TO
+                   RT4282     490.  12.70      88.     22.     13.     .61
+                                                                   60.64    12.70
        HYDROGRAPH AT
+                      8B2     104.  12.15      10.      2.      1.     .06
        2 COMBINED AT
+                   CP8B2A     510.  12.65      98.     25.     15.     .67
        HYDROGRAPH AT
+                      2B1     776.  12.15      78.     20.     12.     .47
        ROUTED TO
+                   RT2122     620.  12.40      78.     20.     12.     .47
+                                                                 2702.08    12.40
        HYDROGRAPH AT
+                      2B2     645.  12.30      82.     21.     12.     .53
        HYDROGRAPH AT
+                      2B3     361.  12.20      41.     10.      6.     .26
        3 COMBINED AT
+                   CP2223    1552.  12.35     201.     51.     30.    1.26
        ROUTED TO
+                   RT2226    1498.  12.50     201.     51.     30.    1.26
+                                                                 2622.65    12.50
        HYDROGRAPH AT
+                      2B4     253.  12.30      33.      8.      5.     .21
        HYDROGRAPH AT
+                      2B5     257.  12.10      23.      6.      4.     .13
        2 COMBINED AT
+                   CP2425     436.  12.15      56.     14.      9.     .34
        ROUTED TO
+                   RT4526     349.  12.55      56.     14.      9.     .34
+                                                                 2621.99    12.55
        HYDROGRAPH AT
+                      2B6     483.  12.20      58.     16.     10.     .31
        3 COMBINED AT
+                    CP2B6    2090.  12.50     315.     81.     49.    1.91
        ROUTED TO
+                   RT2632    1646.  12.95     315.     81.     49.    1.91
+                                                                   14.92    12.95
        HYDROGRAPH AT
+                      3B1     126.  12.25      14.      4.      2.     .10
        ROUTED TO
+                   RT3132      88.  12.65      14.      4.      2.     .10
+                                                                   48.42    12.65
        HYDROGRAPH AT
+                      3B2     416.  12.30      54.     14.      8.     .34
        3 COMBINED AT
+                    CP3B2    1838.  12.90     382.     98.     59.    2.35
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          ROUTED TO
+                    RT3282    1835.  12.90     382.     98.     59.    2.35
+                                                                          1481.42     12.90

          2 COMBINED AT
+                     CP8B2    2254.  12.90     480.    123.     74.    3.02

          ROUTED TO
+                    RT829B    2257.  12.90     480.    123.     74.    3.02
+                                                                          2409.18     12.90

          3 COMBINED AT
+                      CP9B    2819.  12.90     692.    177.    106.    4.44

          HYDROGRAPH AT
+                     1B36B     230.  12.10      23.      6.      4.     .00

          ROUTED TO
+                    RT136B     166.  12.75      23.      6.      4.     .00
+                                                                            84.20     12.75

          HYDROGRAPH AT
+                        6B     263.  12.30      36.      9.      5.     .20

          2 COMBINED AT
+                      CP6B     301.  12.65      59.     15.      9.     .20

          HYDROGRAPH AT
+                        1N     331.  12.05      27.      8.      5.     .13

          HYDROGRAPH AT
+                        4A     125.  12.20      14.      4.      2.     .08

          HYDROGRAPH AT
+                        2A      58.  12.10       5.      1.      1.     .03

          HYDROGRAPH AT
+                        1S     364.  12.10      38.     11.      7.     .19

          ROUTED TO
+                    RT1S2S     309.  12.30      38.     11.      7.     .19
+                                                                            93.17     12.30

          HYDROGRAPH AT
+                        2S     152.  12.15      15.      4.      2.     .09

          2 COMBINED AT
+                      CP2S     432.  12.25      53.     15.      9.     .28

          ROUTED TO
+                    RT2S3S     414.  12.35      53.     15.      9.     .28
+                                                                            25.16     12.35

          HYDROGRAPH AT
+                        3S     143.  12.15      14.      4.      2.     .09

          2 COMBINED AT
+                      CP3S     500.  12.35      67.     18.     11.     .37

          ROUTED TO
+                    RT3S4N     495.  12.40      67.     18.     11.     .37
+                                                                          2470.00     12.40

          HYDROGRAPH AT
+                        3N     189.  12.15      22.      6.      4.     .11

          ROUTED TO
+                    RT34N1     189.  12.20      22.      6.      4.     .11
+                                                                          2540.61     12.20

          HYDROGRAPH AT
+                       4N1      85.  12.15       8.      2.      1.     .05

          2 COMBINED AT
+                     CP4N1     269.  12.20      30.      8.      5.     .16

          ROUTED TO
+                    RT4N14     234.  12.35      30.      8.      5.     .16
+                                                                            70.24     12.35

          HYDROGRAPH AT
+                        2N     364.  12.15      39.     11.      6.     .20

          ROUTED TO
+                    RT2N4N     312.  12.35      39.     11.      6.     .20
+                                                                            70.34     12.35
```

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          HYDROGRAPH AT
+                          4N      140.   12.10          14.          4.          2.        .07

          4 COMBINED AT
+                        CP4N     1112.   12.35         150.         41.         25.        .81


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

D.6.3 NORTH-SOUTH BASIN, WITHOUT BLACK HILLS TANK

(D) 100-Year, 24-Hour Event, Future Condition Model

```
1**************************************                                    **************************************
 *                                    *                                    *                                    *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*                                    *   U.S. ARMY CORPS OF ENGINEERS     *
 *              JUL   1997            *                                    *   HYDROLOGIC ENGINEERING CENTER    *
 *           VERSION 4.1              *                                    *         609 SECOND STREET          *
 *                                    *                                    *      DAVIS, CALIFORNIA 95616       *
 * RUN DATE   01JUL06  TIME  14:49:39 *                                    *          (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   Project ID: NS_24FN - Major Basin: 01 - Return Period: 100 Years
          2           ID   PROJECT:     RIO VERDE AREA DRAINAGE MASTER PLAN       FILE NAME: NS_24FN.DAT
          3           ID   MODE EVENT:  100-year, 24-hour Future Condition Model
          4           ID   DEVELOPER:   Dibble & Associates, Inc.                 DATE: June 30, 2006
          5           ID   DESCRIPTION: This model assumes that Black Hills Tank is breached indicating
          6           ID                that no storage routing analysis is made.
          7           ID   NOTES:       Combines CP9BA and CP8B2A were added to evaluate the flows
          8           ID                from two distinct sub-areas prior to major combines (3/11/2004).
          9           ID
                      *DIAGRAM
         10           IT       3                     800
         11           IO       5
         12           IN      15
                      *
                      *

         13           KK     1B1   BASIN
         14           BA   0.494
         15           PB   4.472
         16           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
         17           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
         18           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
         19           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
         20           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
         21           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
         22           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
         23           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
         24           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
         25           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
         26           LG    0.10    0.40    6.00    0.15      19
         27           UI      83     157     368     540     669     934     617     494     426     370
         28           UI     304     244     200     181     143     108      95      82      64      56
         29           UI      40      41      35      16      16      16      16      16      16      16
                      *

         30           KK  RT1112   ROUTE   REACH
         31           KM   ROUTE FLOW FROM 1B1 TO CP1B2
         32           RS       9    FLOW      -1
         33           RC   0.060   0.045   0.060   10466  0.0220   82.30
         34           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
         35           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                      *

         36           KK     1B2   BASIN
         37           BA   0.161
         38           LG    0.10    0.38    5.60    0.18      15
         39           UI      15      15      22      47      64      88     101     112     129     159
         40           UI     172     115      98      89      82      76      71      62      59      52
         41           UI      44      39      37      35      32      28      24      20      20      17
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1                                          HEC-1 INPUT                                                    PAGE  2

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


       42           KK   CP1B2
       43           KM   COMBINE HYDROGRAPHS 1B11B2 AND 1B2
       44           HC       2
                    *

       45           KK     1B3   BASIN
       46           BA   0.129
       47           LG    0.10    0.40    6.00    0.15      26
       48           UI      27      76     159     213     291     181     147     123      97      73
       49           UI      61      47      36      30      22      19      13      14       7       5
       50           UI       5       5       6       5       0       0       0       0       0       0
                    *

       51           KK    1B3L
       52           KM   DIVERT FLOW FROM 1B3 TO CP6B
       53           DT    1B3R
       54           DI      25      75     150     300     400     600
       55           DQ      25      75     149     291     383     560
                    *

       56           KK  RT1314   ROUTE   REACH
       57           KM   ROUTE FLOW FROM 1B3 TO CP1B4
       58           RS       6    FLOW      -1
       59           RC   0.045   0.040   0.045    7191  0.0225   82.30
       60           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
       61           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *

       62           KK     1B4   BASIN
       63           BA   0.141
       64           LG    0.10    0.39    5.80    0.16      15
       65           UI      17      18      51      82     110     130     152     204     146     111
       66           UI     101      89      81      71      62      51      44      41      37      30
       67           UI      25      22      19      19      13      14      11       8       9       8
                    *

       68           KK   CP1B4
       69           KM   COMBINE HYDROGRAPHS FROM 1B31B4 AND 1B4
       70           HC       2
                    *

       71           KK  CP1214
       72           KM   COMBINE HYDROGRAPHS FROM 1B2 AND CP1B4
       73           HC       2
                    *

       74           KK  RT1452   ROUTE   REACH
       75           KM   ROUTE FLOW FROM CP1214 TO CP5B2
       76           RS       3    FLOW      -1
       77           RC   0.050   0.050   0.050    2610  0.0207   82.30
       78           RX     0.0    55.0   110.0   165.0   520.0   580.0   630.0   730.0
       79           RY    82.0    80.0    80.0    82.0    82.3    80.0    80.0    82.0
                    *
1                                          HEC-1 INPUT                                                    PAGE  3

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


       80           KK     5B2   BASIN
       81           BA   0.124
       82           LG    0.10    0.35    7.00    0.10      15
       83           UI      18      26      65     104     130     158     206     134     108      96
       84           UI      86      72      63      50      43      39      32      26      22      20
       85           UI      15      14      12       9       9       9       5       3       4       3
       86           UI       4       3       4       3       4       0       0       0       0       0
       87           UI       0       0       0       0       0       0       0       0       0       0
                    *

       88           KK   CP5B2
       89           KM   COMBINE HYDROGRAPHS FROM 5B2 AND B2B4B2
       90           HC       2
                    *

       91           KK  RT529B   ROUTE   REACH
       92           KM   ROUTE FLOW FROM CP5B2 TO CP9B
       93           RS       6    FLOW      -1
       94           RC   0.045   0.040   0.045    5011  0.0216   92.00
       95           RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
       96           RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
                    *
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 97          KK     5B1   BASIN
 98          BA   0.099
 99          LG    0.10    0.32    7.60    0.08      15
100          UI      17      31      74     108     134     187     124      99      85      75
101          UI      61      49      39      36      29      22      19      16      13      12
102          UI       8       8       7       3       3       3       4       3       3       3
             *

103          KK  RT519B   ROUTE   REACH
104          KM   ROUTE FLOW FROM CP5B2 TO CP9B
105          RS       3    FLOW      -1
106          RC   0.050   0.050   0.050    5346  0.0213   92.00
107          RX     0.0    60.0   330.0   355.0   390.0   430.0   550.0   720.0
108          RY    92.0    88.0    88.3    88.0    87.4    88.3    86.9    92.0
             *

109          KK      9B   BASIN
110          BA   0.200
111          LG    0.10    0.36    5.00    0.23      15
112          UI      23      24      56      98     136     162     184     236     256     167
113          UI     144     129     116     106      93      83      69      60      55      50
114          UI      44      37      30      28      25      22      18      18      14      12
115          UI      11      12      11       5       5       4       4       5       4       5
             *

116          KK   CP9BA
117          KM   COMBINE HYDROGRAPHS FROM RT529B, RT519B, AND 9B
118          HC       3
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

119          KK     8B1   BASIN
120          BA   0.076
121          LG    0.10    0.36    5.00    0.23      15
122          UI      15      38      82     111     159     119      87      75      59      48
123          UI      37      32      25      18      17      12      10       7       7       5
124          UI       3       3       3       3       3       2       0       0       0       0
125          UI       0       0       0       0       0       0       0       0       0       0
             *

126          KK  RT819B   ROUTE   REACH
127          KM   ROUTE FLOW FROM BASIN 8B1 TO CP9B
128          RS       3    FLOW      -1
129          RC   0.050   0.050   0.050     677  0.0177   64.70
130          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
131          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

132          KK     4B1   BASIN
133          BA   0.368
134          LG    0.10    0.38    5.40    0.19      15
135          UI      37      38      70     128     189     235     270     302     372     442
136          UI     292     242     220     203     183     169     152     135     119      99
137          UI      91      87      80      67      60      48      47      41      40      31
             *

138          KK  RT4142   ROUTE   REACH
139          KM   ROUTE FLOW FROM BASIN 4B1 TO CP4B2
140          RS       4    FLOW      -1
141          RC   0.050   0.050   0.050    6204  0.0213   64.70
142          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
143          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *

144          KK     4B2   BASIN
145          BA   0.240
146          LG    0.10    0.36    5.00    0.23      15
147          UI      32      38     106     165     217     253     327     334     217     188
148          UI     167     151     129     113      91      80      73      63      51      41
149          UI      38      35      26      25      21      15      16      16      11       6
             *

150          KK   CP4B2
151          KM   COMBINE HYDROGRAPHS FROM 4B14B2 AND 4B2
152          HC       2
             *

153          KK  RT4282   ROUTE   REACH
154          KM   ROUTE FLOW FROM CP4B2 TO CP8B2
155          RS       3    FLOW      -1
156          RC   0.050   0.050   0.050    3773  0.0217   64.70
157          RX     0.0    36.2    52.6    89.2   115.7   126.3   132.2   136.6
158          RY    64.7    60.7    59.1    58.8    61.3    61.5    62.3    62.9
             *
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1                                    HEC-1 INPUT                                                    PAGE  5

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

   159          KK     8B2   BASIN
   160          BA   0.064
   161          LG    0.10    0.36    5.00    0.23      15
   162          UI      12      28      61      85     111     116      75      62      53      43
   163          UI      34      28      24      18      15      12       9       9       6       6
   164          UI       4       2       3       2       2       2       2       0       0       0
                *

   165          KK  CP8B2A
   166          KM   COMBINE HYDROGRAPHS FROM RT4282 AND 8B2
   167          HC       2
                *

   168          KK     2B1   BASIN
   169          BA   0.472
   170          LG    0.10    0.40    6.00    0.15      16
   171          UI      84     173     393     568     731     890     562     472     398     340
   172          UI     272     214     189     154     116      99      85      64      57      41
   173          UI      41      32      17      16      16      16      16      16      16       0
                *

   174          KK  RT2122   ROUTE   REACH
   175          KM   ROUTE FLOW FROM BASIN 2B1 TO CP_2B2
   176          RS       3    FLOW      -1
   177          RC   0.060   0.045   0.060    4909  0.0159 2708.00
   178          RX     0.0    21.5    45.4   106.3   127.2   150.7   278.9   305.2
   179          RY  2708.0  2706.0  2704.0  2702.0  2700.0  2700.0  2704.0  2704.4
                *

   180          KK     2B2   BASIN
   181          BA   0.533
   182          LG    0.10    0.39    5.70    0.17      16
   183          UI      60      60     138     237     339     404     462     556     708     476
   184          UI     383     344     313     286     256     230     195     168     149     138
   185          UI     127     103      90      76      70      65      56      46      46      38
                *

   186          KK     2B3   BASIN
   187          BA   0.259
   188          LG    0.10    0.40    6.00    0.15      15
   189          UI      35      40     115     178     234     273     353     360     234     204
   190          UI     180     163     140     120      99      86      79      68      55      44
   191          UI      40      39      28      26      23      17      17      17      12       7
                *

   192          KK  CP2223
   193          KM   COMBINE ROUTED HYDROGRAPH FROM BASIN 2B1 WITH BASIN 2B2 AND BASIN 2B3
   194          HC       3
                *
1                                    HEC-1 INPUT                                                    PAGE  6

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

   195          KK  RT2226   ROUTE   REACH
   196          KM   ROUTE FLOW FROM CP_2B2 TO CP2B6
   197          RS       6    FLOW      -1
   198          RC   0.050   0.040   0.050    4244  0.0118 2628.00
   199          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
   200          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
                *

   201          KK     2B4   BASIN
   202          BA   0.212
   203          LG    0.10    0.40    6.00    0.15      15
   204          UI      24      24      54      95     134     162     183     222     281     189
   205          UI     153     136     125     114     102      92      77      67      58      56
   206          UI      50      41      36      30      28      26      22      19      18      15
                *

   207          KK     2B5   BASIN
   208          BA   0.125
   209          LG    0.10    0.37    6.60    0.12      22
   210          UI      30     106     201     284     250     171     136     107      76      64
   211          UI      45      35      27      20      15      14       6       6       5       6
   212          UI       6       0       0       0       0       0       0       0       0       0
                *

   213          KK  CP2425
   214          KM   COMBINE HYDROGRAPHS FROM 2B4 AND 2B5
   215          HC       2
                *
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216          KK  RT4526   ROUTE   REACH
217          KM   ROUTE FLOW FROM CP2425 TO CP2B6
218          RS       4    FLOW      -1
219          RC   0.060   0.045   0.060    4060  0.0113 2628.00
220          RX     0.0    87.2   131.2   144.4   173.8   435.1   470.9   555.8
221          RY  2628.0  2626.0  2624.0  2622.0  2621.0  2622.0  2624.0  2628.0
             *

222          KK     2B6   BASIN
223          BA   0.308
224          LG    0.10    0.38    6.40    0.13      28
225          UI      49      85     201     308     382     512     451     312     264     236
226          UI     198     167     129     116     101      78      63      55      47      37
227          UI      33      25      24      24       9       9      10       9      10       9
             *

228          KK   CP2B6
229          KM   COMBINE HYDROGRAPHS FROM 2B6, RT4526, AND RT2226
230          HC       3
             *
1                                        HEC-1 INPUT                                          PAGE  7

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

231          KK  RT2632   ROUTE   REACH
232          KM   ROUTE RS2B6 TO CP3B2
233          RS       4    FLOW      -1
234          RC   0.070   0.050   0.070    8967  0.0221   20.00
235          RX     0.0    68.2   216.8   370.2   450.7   491.4   528.9   590.1
236          RY    20.0    16.0    13.8    14.0    13.2    14.0    18.0    20.0
             *

237          KK     3B1   BASIN
238          BA   0.098
239          LG    0.10    0.36    5.00    0.23      15
240          UI      13      15      44      67      89     103     134     136      88      77
241          UI      69      61      53      46      37      32      31      25      21      17
242          UI      15      15      10      10       9       6       7       7       4       3
             *

243          KK  RT3132   ROUTE   REACH
244          KM   ROUTE FLOW FROM 3B1 TO CP3B2
245          RS       4    FLOW      -1
246          RC   0.060   0.045   0.060    3657  0.0202   52.00
247          RX     0.0    55.0   213.0   227.0   234.0   315.0   428.0   450.0
248          RY    50.0    48.4    48.0    47.7    48.0    51.1    50.0    52.0
             *

249          KK     3B2   BASIN
250          BA   0.342
251          LG    0.10    0.39    5.70    0.17      18
252          UI      38      39      89     152     217     260     296     357     454     305
253          UI     246     220     202     183     164     149     124     108      96      88
254          UI      81      67      58      48      45      42      36      29      29      24
             *

255          KK   CP3B2
256          KM   COMBINE FLOW FROM RT3132, RT2632, AND 3B2
257          HC       3
             *

258          KK  RT3282   ROUTE   REACH
259          KM   ROUTE FLOW FROM CP_3B2 TO CP_8B2
260          RS       9    FLOW      -1
261          RC   0.060   0.045   0.060     329  0.0213 2419.60
262          RX     0.0    71.1    89.5   106.2   122.1   195.9   208.1   245.1
263          RY  2417.0  2416.0  2414.0  2413.6  2414.0  1416.0  2418.0  2419.6
             *

264          KK   CP8B2
265          KM   COMBINE HYDROGRAPHS FROM RT3282 AND CP8B2A
266          HC       2
             *
1                                        HEC-1 INPUT                                          PAGE  8

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

267          KK  RT829B   ROUTE   REACH
268          KM   ROUTE FLOW FROM CP8B2 TO CP9B
269          RS       9    FLOW      -1
270          RC   0.060   0.045   0.060     507  0.0178 2410.00
271          RX     0.0    41.1    62.2    68.6    77.2   103.9   144.6   157.5
272          RY  2410.0  2408.0  2406.0  2405.4  2405.4  2406.0  2408.0  2408.8
             *
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273          KK    CP9B
274          KM   COMBINE HYDROGRAPHS FROM CP9BA, RT819B, AND RT829B
275          KO                                      21
276          HC       3
             *

277          KK   1B36B
278          KM   RETRIEVE FLOW FROM 1B3
279          DR    1B3R
             *

280          KK  RT136B   ROUTE   REACH
281          KM   ROUTE FLOW FROM 1B3 TO CP_6B
282          RS      12    FLOW      -1
283          RC   0.060   0.045   0.060    8533  0.0234   86.50
284          RX     0.0    50.0   100.0   130.0   155.0   185.0   230.0   295.0
285          RY    86.5    84.0    84.0    83.0    84.0    86.0    84.0    86.0
             *

286          KK      6B   BASIN
287          BA   0.204
288          LG    0.10    0.36    6.80    0.11      18
289          UI      23      23      53      91     129     155     177     213     270     182
290          UI     147     132     120     109      98      88      75      64      57      53
291          UI      48      40      35      28      27      25      22      18      17      15
             *

292          KK    CP6B
293          KM   COMBINE HYDROGRAPHS FROM 1B36B AND 6B
294          KO                                      21
295          HC       2
             *

296          KK      1N   BASIN
297          BA   0.131
298          KO                                      21
299          LG    0.10    0.39    6.20    0.14      40
300          UI     106     378     477     273     173     113      65      42      27      12
301          UI      11      11       0       0       0       0       0       0       0       0
302          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

303          KK      4A   BASIN
304          BA   0.082
305          KO                                      21
306          LG    0.10    0.39    5.80    0.16      21
307          UI      13      19      48      75      93     118     132      86      71      64
308          UI      54      47      38      31      28      24      19      15      14      11
309          UI      10       8       6       6       7       2       3       2       2       3
             *

310          KK      2A   BASIN
311          BA   0.031
312          KO                                      21
313          LG    0.10    0.39    6.20    0.14      15
314          UI       7      18      38      51      70      44      35      29      24      17
315          UI      15      11       9       7       5       5       3       3       2       1
316          UI       1       2       1       1       0       0       0       0       0       0
             *

317          KK      1S   BASIN
318          BA   0.188
319          LG    0.10    0.39    6.20    0.14      37
320          UI      42     132     263     359     417     257     213     170     128     100
321          UI      82      58      48      36      29      21      21       9       8       8
322          UI       8       8       8       0       0       0       0       0       0       0
             *

323          KK  RT1S2S   ROUTE   REACH
324          KM   ROUTE FLOW FROM 1S TO CP_2S
325          RS       3    FLOW      -1
326          RC   0.060   0.045   0.060    4833  0.0252  100.00
327          RX     0.0    88.0   100.0   115.0   131.0   152.0   163.0   200.0
328          RY   100.0    92.0    91.0    92.0    94.0    96.0    98.0   100.0
             *

329          KK      2S   BASIN
330          BA   0.092
331          LG    0.10    0.38    5.60    0.18      16
332          UI      17      39      88     122     161     167     107      90      77      61
333          UI      49      41      34      25      21      18      14      12       8       9
334          UI       6       3       3       3       3       4       3       0       0       0
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                *
335             KK    CP2S
336             KM   COMBINE HYDROGRAPHS FROM 1S2S AND 2S
337             HC       2
                *

338             KK  RT2S3S   ROUTE   REACH
339             KM   ROUTE FLOW FROM 2S TO CP_3S
340             RS       5    FLOW      -1
341             RC   0.050   0.050   0.050    2774  0.0231   29.10
342             RX     0.0    62.0    70.0   161.3   193.3   215.9   237.4   240.5
343             RY    28.8    26.0    24.8    23.7    25.9    27.2    28.9    29.1
                *
1                                          HEC-1 INPUT                                                    PAGE 10

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

344             KK      3S   BASIN
345             BA   0.087
346             LG    0.10    0.37    5.30    0.20      15
347             UI      15      32      73     105     134     165     103      87      73      63
348             UI      50      39      35      29      21      18      17      11      10       8
349             UI       7       6       3       3       3       3       3       3       3       0
                *

350             KK    CP3S
351             KM   COMBINE HYDROGRAPHS FROM 2S3S AND 3S
352             HC       2
                *

353             KK  RT3S4N   ROUTE   REACH
354             KM   ROUTE FLOW FROM CP3S TO CP4N
355             RS       4    FLOW      -1
356             RC   0.060   0.045   0.060    1040  0.0250 2472.00
357             RX     0.0    16.9    39.1    64.9    89.7   113.0   136.5   170.1
358             RY  2470.7  2470.0  2468.8  2468.7  2468.9  2469.5  2470.0  2472.0
                *
                *

359             KK      3N   BASIN
360             BA   0.110
361             LG    0.10    0.39    6.20    0.14      35
362             UI      19      41      91     133     170     207     132     110      93      79
363             UI      63      50      44      36      27      23      20      15      13       9
364             UI      10       7       4       4       4       4       3       4       4       0
                *

365             KK  RT34N1   ROUTE   REACH
366             KM   ROUTE FLOW FROM 3N TO CP4N1
367             RS       5    FLOW      -1
368             RC   0.060   0.045   0.060     940  0.0277 2542.00
369             RX     0.0    22.0    44.0    67.0    73.0   115.0   161.0   180.0
370             RY  2542.0  2541.0  2540.0  2539.0  2540.0  2541.5  2541.8  2542.0
                *

371             KK     4N1   BASIN
372             BA   0.050
373             LG    0.10    0.38    5.60    0.18      17
374             UI      10      25      54      73     105      77      58      49      39      31
375             UI      25      22      16      12      11       7       7       5       4       3
376             UI       2       2       2       2       2       2       0       0       0       0
                *

377             KK   CP4N1
378             KM   COMBINE HYDROGRAPHS FROM RT34N1 AND 4N1
379             KO                                      21
380             HC       2
                *
1                                          HEC-1 INPUT                                                    PAGE 11

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

381             KK  RT4N14   ROUTE   REACH
382             KM   ROUTE FLOW FROM CP4N1 TO CP4N
383             RS       3    FLOW      -1
384             RC   0.060   0.045   0.060    3010  0.0239   72.70
385             RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
386             RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
                *

387             KK      2N   BASIN
388             BA   0.205
389             LG    0.10    0.40    6.00    0.15      29
390             UI      38      89     196     271     359     370     239     199     172     138
```

```
391          UI     108      91      76      57      46      41      29      27      18      19
392          UI      14       7       7       8       7       7       8       0       0       0
             *

393          KK  RT2N4N   ROUTE   REACH
394          KM   ROUTE FLOW FROM 2N TO CP_4N
395          RS       4    FLOW      -1
396          RC   0.060   0.045   0.060    3992  0.0256   72.70
397          RX     0.0    72.7   118.0   159.8   163.3   190.8   200.4   230.0
398          RY    72.4    69.6    69.8    69.3    69.3    70.4    70.9    72.7
             *

399          KK      4N   BASIN
400          BA   0.074
401          LG    0.10    0.36    6.80    0.11      15
402          UI      15      36      81     108     155     115      85      73      58      46
403          UI      36      31      25      18      16      11      10       7       7       5
404          UI       3       2       3       3       3       2       0       0       0       0
             *

405          KK    CP4N
406          KM   COMBINE HYDROGRAPHS FROM RT2N4N, RT4N14, 4N, AND RT3S4N
407          KO                                      21
408          HC       4
409          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    13        1B1
               V
               V
    30     RT1112
               .
               .
    36         .         1B2
               .           .
               .           .
    42      CP1B2............
               .
               .
    45         .         1B3
               .           .
               .           .
    53         .           .------->    1B3R
    51         .        1B3L
               .           V
               .           V
    56         .      RT1314
               .           .
               .           .
    62         .           .         1B4
               .           .           .
               .           .           .
    68         .       CP1B4............
               .           .
               .           .
    71     CP1214............
               V
               V
    74     RT1452
               .
               .
    80         .         5B2
               .           .
               .           .
    88      CP5B2............
               V
               V
    91     RT529B
               .
               .
    97         .         5B1
               .           V
               .           V
   103         .      RT519B
               .           .
               .           .
   109         .           .          9B
               .           .           .
               .           .           .
   116      CP9BA........................
               .
               .
```

```
119          .        8B1
             .         V
             .         V
126          .     RT819B
             .         .
             .         .
132          .         .       4B1
             .         .        V
             .         .        V
138          .         .    RT4142
             .         .         .
             .         .         .
144          .         .         .        4B2
             .         .         .         .
             .         .         .         .
150          .         .    CP4B2............
             .         .        V
             .         .        V
153          .         .    RT4282
             .         .         .
             .         .         .
159          .         .         .        8B2
             .         .         .         .
             .         .         .         .
165          .         .    CP8B2A...........
             .         .         .
             .         .         .
168          .         .         .        2B1
             .         .         .         V
             .         .         .         V
174          .         .         .      RT2122
             .         .         .         .
             .         .         .         .
180          .         .         .         .        2B2
             .         .         .         .         .
             .         .         .         .         .
186          .         .         .         .         .        2B3
             .         .         .         .         .         .
             .         .         .         .         .         .
192          .         .         .      CP2223.......................
             .         .         .         V
             .         .         .         V
195          .         .         .      RT2226
             .         .         .         .
             .         .         .         .
201          .         .         .         .        2B4
             .         .         .         .         .
             .         .         .         .         .
207          .         .         .         .         .        2B5
             .         .         .         .         .         .
             .         .         .         .         .         .
213          .         .         .         .     CP2425...........
             .         .         .         .         V
             .         .         .         .         V
216          .         .         .         .     RT4526
             .         .         .         .         .
             .         .         .         .         .
222          .         .         .         .         .        2B6
             .         .         .         .         .         .
             .         .         .         .         .         .
228          .         .         .      CP2B6.......................
             .         .         .         V
             .         .         .         V
231          .         .         .      RT2632
             .         .         .         .
             .         .         .         .
237          .         .         .         .        3B1
             .         .         .         .         V
             .         .         .         .         V
243          .         .         .         .     RT3132
             .         .         .         .         .
             .         .         .         .         .
249          .         .         .         .         .        3B2
             .         .         .         .         .         .
             .         .         .         .         .         .
255          .         .         .      CP3B2.......................
             .         .         .         V
             .         .         .         V
258          .         .         .      RT3282
             .         .         .         .
             .         .         .         .
264          .         .    CP8B2............
             .         .        V
             .         .        V
267          .         .    RT829B
             .         .         .
             .         .         .
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273        CP9B.......................
             .
             .
279          .           .<-------    1B3R
277          .       1B36B
             .          V
             .          V
280          .      RT136B
             .          .
             .          .
286          .          .          6B
             .          .           .
             .          .           .
292          .        CP6B............
             .          .
             .          .
296          .          .          1N
             .          .           .
             .          .           .
303          .          .           .          4A
             .          .           .           .
             .          .           .           .
310          .          .           .           .          2A
             .          .           .           .           .
             .          .           .           .           .
317          .          .           .           .           .         1S
             .          .           .           .           .          V
             .          .           .           .           .          V
323          .          .           .           .           .     RT1S2S
             .          .           .           .           .           .
             .          .           .           .           .           .
329          .          .           .           .           .           .          2S
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
335          .          .           .           .           .       CP2S............
             .          .           .           .           .          V
             .          .           .           .           .          V
338          .          .           .           .           .     RT2S3S
             .          .           .           .           .           .
             .          .           .           .           .           .
344          .          .           .           .           .           .          3S
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
350          .          .           .           .           .       CP3S............
             .          .           .           .           .          V
             .          .           .           .           .          V
353          .          .           .           .           .     RT3S4N
             .          .           .           .           .           .
             .          .           .           .           .           .
359          .          .           .           .           .           .          3N
             .          .           .           .           .           .           V
             .          .           .           .           .           .           V
365          .          .           .           .           .           .      RT34N1
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
371          .          .           .           .           .           .           .         4N1
             .          .           .           .           .           .           .          .
             .          .           .           .           .           .           .          .
377          .          .           .           .           .           .       CP4N1............
             .          .           .           .           .           .           V
             .          .           .           .           .           .           V
381          .          .           .           .           .           .      RT4N14
             .          .           .           .           .           .           .
             .          .           .           .           .           .           .
387          .          .           .           .           .           .           .          2N
             .          .           .           .           .           .           .           V
             .          .           .           .           .           .           .           V
393          .          .           .           .           .           .           .     RT2N4N
             .          .           .           .           .           .           .          .
             .          .           .           .           .           .           .          .
399          .          .           .           .           .           .           .          .          4N
             .          .           .           .           .           .           .          .           .
             .          .           .           .           .           .           .          .           .
405          .          .           .           .           .       CP4N.......................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUL   1997               *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   01JUL06  TIME  14:49:39   *
 *                                       *
 *****************************************
```

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

```
                    Project ID: NS_24FN - Major Basin: 01 - Return Period: 100 Years
                    PROJECT:      RIO VERDE AREA DRAINAGE MASTER PLAN       FILE NAME: NS_24FN.DAT
                    MODE EVENT:   100-year, 24-hour Future Condition Model
                    DEVELOPER:    Dibble & Associates, Inc.                 DATE: June 30, 2006
                    DESCRIPTION:  This model assumes that Black Hills Tank is breached indicating
                                  that no storage routing analysis is made.
                    NOTES:        Combines CP9BA and CP8B2A were added to evaluate the flows
                                  from two distinct sub-areas prior to major combines (3/11/2004).

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

    IT        HYDROGRAPH TIME DATA
                     NMIN          3  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        800  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       1557  ENDING TIME
                    ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL     .05 HOURS
                     TOTAL TIME BASE   39.95 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


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


            **************
            *            *
 273 KK     *      CP9B  *
            *            *
            **************

 275 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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


            **************
            *            *
 292 KK     *      CP6B  *
            *            *
            **************

 294 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .050  TIME INTERVAL IN HOURS


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

```
              **************
              *            *
 296 KK       *     1N     *        BASIN
              *            *
              **************

 298 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 303 KK       *     4A     *        BASIN
              *            *
              **************

 305 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 310 KK       *     2A     *        BASIN
              *            *
              **************

 312 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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


              **************
              *            *
 377 KK       *    CP4N1   *
              *            *
              **************

 379 KO            OUTPUT CONTROL VARIABLES
                        IPRNT           5  PRINT CONTROL
                        IPLOT           0  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                        IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                         IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2         800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT        .050  TIME INTERVAL IN HOURS


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

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                **************
                *            *
405 KK          *     CP4N   *
                *            *
                **************

407 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        800  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       .050  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION        STATION   FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                        6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                             1B1     882.   12.15        101.        29.         17.       .49
          ROUTED TO
+                           RT1112    577.   12.85        101.        29.         17.       .49
+                                                                                            81.04       12.85
          HYDROGRAPH AT
+                             1B2     194.   12.35         29.         8.          5.       .16
          2 COMBINED AT
+                           CP1B2     664.   12.80        129.        36.         22.       .65
          HYDROGRAPH AT
+                             1B3     263.   12.10         28.         8.          5.       .13
          DIVERSION TO
+                            1B3R     256.   12.10         28.         8.          5.       .13
          HYDROGRAPH AT
+                            1B3L       7.   12.10          0.         0.          0.       .13
          ROUTED TO
+                           RT1314       1.   13.55          0.         0.          0.       .13
+                                                                                            80.01       13.55
          HYDROGRAPH AT
+                             1B4     208.   12.20         27.         8.          5.       .14
          2 COMBINED AT
+                           CP1B4     208.   12.20         28.         8.          5.       .27
          2 COMBINED AT
+                           CP1214    727.   12.80        156.        44.         27.       .92
          ROUTED TO
+                           RT1452    699.   12.95        156.        44.         27.       .92
+                                                                                            81.08       12.95
          HYDROGRAPH AT
+                             5B2     211.   12.15         27.         7.          4.       .12
          2 COMBINED AT
+                           CP5B2     735.   12.95        183.        51.         31.      1.05
          ROUTED TO
+                           RT529B    688.   13.25        183.        51.         31.      1.05
+                                                                                            88.30       13.25
          HYDROGRAPH AT
+                             5B1     185.   12.15         23.         6.          4.       .10
          ROUTED TO
+                           RT519B    112.   12.60         23.         6.          4.       .10
+                                                                                            87.73       12.60
          HYDROGRAPH AT
+                              9B     274.   12.25         37.        10.          6.       .20
          3 COMBINED AT
```

```
+                    CP9BA     777.  13.25     242.     68.     41.    1.35
        HYDROGRAPH AT
+                      8B1     144.  12.10      14.      4.      2.     .08
        ROUTED TO
+                   RT819B     143.  12.15      14.      4.      2.     .08
+                                                                   59.85     12.15
        HYDROGRAPH AT
+                      4B1     470.  12.30      67.     19.     11.     .37
        ROUTED TO
+                   RT4142     420.  12.55      67.     19.     11.     .37
+                                                                   60.51     12.55
        HYDROGRAPH AT
+                      4B2     362.  12.20      44.     12.      7.     .24
        2 COMBINED AT
+                    CP4B2     604.  12.50     111.     31.     19.     .61
        ROUTED TO
+                   RT4282     592.  12.60     111.     31.     19.     .61
+                                                                   60.82     12.60
        HYDROGRAPH AT
+                      8B2     117.  12.10      12.      3.      2.     .06
        2 COMBINED AT
+                   CP8B2A     617.  12.60     123.     34.     21.     .67
        HYDROGRAPH AT
+                      2B1     861.  12.15      95.     26.     16.     .47
        ROUTED TO
+                   RT2122     690.  12.40      95.     26.     16.     .47
+                                                                 2702.19     12.40
        HYDROGRAPH AT
+                      2B2     732.  12.25     101.     28.     17.     .53
        HYDROGRAPH AT
+                      2B3     403.  12.20      51.     14.      8.     .26
        3 COMBINED AT
+                   CP2223    1749.  12.30     247.     68.     41.    1.26
        ROUTED TO
+                   RT2226    1681.  12.45     246.     68.     41.    1.26
+                                                                 2622.73     12.45
        HYDROGRAPH AT
+                      2B4     293.  12.25      41.     11.      7.     .21
        HYDROGRAPH AT
+                      2B5     273.  12.10      27.      8.      5.     .13
        2 COMBINED AT
+                   CP2425     503.  12.15      68.     19.     11.     .34
        ROUTED TO
+                   RT4526     400.  12.55      68.     19.     11.     .34
+                                                                 2622.05     12.55
        HYDROGRAPH AT
+                      2B6     551.  12.15      69.     20.     12.     .31
        3 COMBINED AT
+                    CP2B6    2353.  12.45     383.    108.     65.    1.91
        ROUTED TO
+                   RT2632    1920.  12.85     382.    107.     65.    1.91
+                                                                   15.03     12.85
        HYDROGRAPH AT
+                      3B1     148.  12.20      18.      5.      3.     .10
        ROUTED TO
+                   RT3132     107.  12.60      18.      5.      3.     .10
+                                                                   48.45     12.60
        HYDROGRAPH AT
+                      3B2     472.  12.25      66.     19.     11.     .34
        3 COMBINED AT
+                    CP3B2    2156.  12.85     465.    131.     79.    2.35
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          ROUTED TO
+                      RT3282     2159.  12.85      465.      131.      79.     2.35
+                                                                                      1485.38     12.85

          2 COMBINED AT
+                       CP8B2     2665.  12.80      588.      165.     100.     3.02

          ROUTED TO
+                      RT829B     2658.  12.80      588.      165.     100.     3.02
+                                                                                      2409.46     12.80

          3 COMBINED AT
+                        CP9B     3329.  12.80      844.      237.     143.     4.44

          HYDROGRAPH AT
+                       1B36B      256.  12.10       28.        8.       5.      .00

          ROUTED TO
+                      RT136B      184.  12.70       28.        8.       5.      .00
+                                                                                        84.23     12.70

          HYDROGRAPH AT
+                          6B      293.  12.25       43.       12.       7.      .20

          2 COMBINED AT
+                        CP6B      333.  12.35       70.       20.      12.      .20

          HYDROGRAPH AT
+                          1N      352.  12.00       32.       10.       6.      .13

          HYDROGRAPH AT
+                          4A      139.  12.15       17.        5.       3.      .08

          HYDROGRAPH AT
+                          2A       63.  12.10        6.        2.       1.      .03

          HYDROGRAPH AT
+                          1S      403.  12.10       45.       14.       8.      .19

          ROUTED TO
+                      RT1S2S      339.  12.25       45.       14.       8.      .19
+                                                                                        93.26     12.25

          HYDROGRAPH AT
+                          2S      171.  12.10       18.        5.       3.      .09

          2 COMBINED AT
+                        CP2S      477.  12.20       63.       19.      11.      .28

          ROUTED TO
+                      RT2S3S      465.  12.35       63.       19.      11.      .28
+                                                                                        25.23     12.35

          HYDROGRAPH AT
+                          3S      156.  12.15       17.        5.       3.      .09

          2 COMBINED AT
+                        CP3S      563.  12.30       79.       23.      14.      .37

          ROUTED TO
+                      RT3S4N      562.  12.35       79.       23.      14.      .37
+                                                                                      2470.08     12.35

          HYDROGRAPH AT
+                          3N      208.  12.15       26.        8.       5.      .11

          ROUTED TO
+                      RT34N1      206.  12.20       26.        8.       5.      .11
+                                                                                      2540.66     12.15

          HYDROGRAPH AT
+                         4N1       97.  12.10       10.        3.       2.      .05

          2 COMBINED AT
+                       CP4N1      301.  12.15       36.       11.       6.      .16

          ROUTED TO
+                      RT4N14      262.  12.35       36.       11.       6.      .16
+                                                                                        70.28     12.35

          HYDROGRAPH AT
+                          2N      393.  12.10       46.       13.       8.      .20

          ROUTED TO
+                      RT2N4N      340.  12.35       46.       13.       8.      .20
+                                                                                        70.38     12.35
```

```
          HYDROGRAPH AT
+                          4N       148.   12.10         16.         4.         3.        .07
          4 COMBINED AT
+                         CP4N     1242.   12.35        176.        51.        31.        .81

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

D.6.4 SOUTH BASIN

(A) 100-Year, 6-Hour Event, Existing Condition Model

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUL   1997              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   30AUG06  TIME  13:22:34  *                                    *          (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   Project ID: S_6EX - Major Basin: 01 - Return Period: 100 Years
        2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_6EX.DAT
        3           ID   MODEL:      100-year, 6-hour Existing Condition Model
        4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003
        5           ID
        6           ID   *** Modified South Watershed Model: Subbasin Added: 509A6 ***
        7           ID                                                          DATE REVISED: 5/06/05
        8           ID   *** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
        9           ID   *** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
       10           ID                                                          LAST UPDATE:  8/30/06
       11           ID
                    *
                    *DIAGRAM
       12           IT       2                    1200
       13           IO       5
       14           IN      15
                    *
                    * ******************************************************************************
                    * ******************************     Major Basin 511    ************************
                    * ******************************************************************************
                    *

       15           KK   511A1   BASIN
       16           KM   Sub-Basin   511A1
       17           KM
       18           KM      The Phoenix Mountain S-Graph is used for this basin.
       19           KM
       20           BA   0.294
       21           KM   RAINFALL DEPTH OF 3.44 WAS SPATIALLY REDUCED AS SHOWN BY THE PB RECORD
       22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.952 WAS USED.
       23           PB   3.260
       24           PC   0.000   0.013   0.018   0.028   0.042   0.055   0.066   0.078   0.090   0.102
       25           PC   0.116   0.132   0.153   0.199   0.284   0.464   0.679   0.812   0.881   0.922
       26           PC   0.948   0.961   0.974   0.987   1.000
       27           LG    0.15    0.39    6.20    0.17       0
       28           UI      34      35      34      75     117     146     194     222     243     258
       29           UI     309     359     406     292     236     209     206     187     170     167
       30           UI     151     138     134     118     104      93      86      81      79      72
       31           UI      68      57      53      43      44      39      37      38      31      26
       32           UI      27      26      24      17      16      17      17      16      17      13
       33           UI       6       0       0       0       0       0       0       0       0       0
       34           UI       0       0       0       0       0       0       0       0       0       0
       35           UI       0       0       0       0       0       0       0       0       0       0
                    *

       36           KK   511A2   BASIN
       37           KM   Sub-Basin   511A2
       38           KM
       39           KM      The Phoenix Mountain S-Graph is used for this basin.
```

```
  40        KM
  41        BA   0.059
  42        LG    0.15    0.40    6.00    0.18       0
  43        UI      12      17      42      66      88     102     138     106      79      68
  44        UI      63      53      47      39      31      28      27      20      16      16
  45        UI      13      10      10       8       6       6       6       4       2       2
1                                        HEC-1 INPUT                                          PAGE  2

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

  46        UI       3       2       3       2       2       3       0       0       0       0
  47        UI       0       0       0       0       0       0       0       0       0       0
  48        UI       0       0       0       0       0       0       0       0       0       0
  49        UI       0       0       0       0       0       0       0       0       0       0
  50        UI       0       0       0       0       0       0       0       0       0       0
            *

  51        KK  RTA2A3   ROUTE   REACH
  52        KM   Normal depth channel route from 511A2 to 511A3
  53        RS       2    FLOW      -1
  54        RC   0.070   0.040   0.070    3286  0.0158 2664.50
  55        RX     0.0   100.1   119.0   129.4   137.7   156.2   367.9   409.0
  56        RY  2664.5  2658.0  2657.5  2657.0  2657.2  2658.0  2662.0  2662.5
            *

  57        KK   511A3   BASIN
  58        KM   Sub-Basin   511A3
  59        KM
  60        KM      The Phoenix Mountain S-Graph is used for this basin.
  61        KM
  62        BA   0.294
  63        LG    0.15    0.39    6.20    0.17       0
  64        UI      35      36      36      85     126     161     211     236     261     275
  65        UI     338     406     368     272     234     208     201     185     170     167
  66        UI     146     136     129     108      97      92      84      80      77      68
  67        UI      57      54      45      44      41      38      38      29      27      27
  68        UI      28      20      17      18      17      17      18      16       7       6
  69        UI       7       0       0       0       0       0       0       0       0       0
  70        UI       0       0       0       0       0       0       0       0       0       0
  71        UI       0       0       0       0       0       0       0       0       0       0
  72        UI       0       0       0       0       0       0       0       0       0       0
  73        UI       0       0       0       0       0       0       0       0       0       0
  74        UI       0       0       0       0       0       0       0       0       0       0
  75        UI       0       0       0       0       0       0       0       0       0       0
  76        UI       0       0       0       0       0       0       0       0       0       0
  77        UI       0       0       0       0       0       0       0       0       0       0
  78        UI       0       0       0       0       0       0       0       0       0       0
            *

  79        KK   CP11A
  80        KM     Combine routed hydrograph from 511A2 with runoff from 511A1 and 511A3
  81        HC       3
            *

  82        KK   RTA1D   ROUTE   REACH
  83        KM   Normal depth channel route from CP11A to 511D
  84        RS       4    FLOW      -1
  85        RC   0.070   0.040   0.070    5358  0.0186  151.20
  86        RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
  87        RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
            *
1                                        HEC-1 INPUT                                          PAGE  3

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

  88        KK    511D   BASIN
  89        KM   Sub-Basin   511D
  90        KM
  91        KM      The Phoenix Mountain S-Graph is used for this basin.
  92        KM
  93        BA   0.121
  94        LG    0.15    0.36    6.80    0.13       0
  95        UI      18      18      29      58      83     105     123     137     163     203
  96        UI     170     124     106     104      89      85      78      69      63      55
  97        UI      46      43      41      37      32      30      22      23      20      19
  98        UI      16      14      13      14       8       9       9       9       8       5
  99        UI       4       3       3       4       3       4       3       4       3       3
 100        UI       4       0       0       0       0       0       0       0       0       0
 101        UI       0       0       0       0       0       0       0       0       0       0
 102        UI       0       0       0       0       0       0       0       0       0       0
 103        UI       0       0       0       0       0       0       0       0       0       0
            *

 104        KK   CP11D
 105        KM     Combine routed hydrograph from CP11A with runoff from 511D
 106        HC       2
```

```
                *

107             KK   511B4   BASIN
108             KM   Sub-Basin   511B4
109             KM
110             KM      The Phoenix Mountain S-Graph is used for this basin.
111             KM
112             BA   0.194
113             LG    0.15    0.36    6.80    0.13      12
114             UI      32      33      76     128     188     219     250     308     386     258
115             UI     213     184     171     160     137     124     110      90      79      77
116             UI      68      56      51      41      37      37      30      25      26      20
117             UI      16      16      16      16       8       6       6       7       6       6
118             UI       7       6       6       6       7       6       0       0       0       0
119             UI       0       0       0       0       0       0       0       0       0       0
120             UI       0       0       0       0       0       0       0       0       0       0
121             UI       0       0       0       0       0       0       0       0       0       0
                *

122             KK   511B1   BASIN
123             KM   Sub-Basin   511B1
124             KM
125             KM      The Phoenix Mountain S-Graph is used for this basin.
126             KM
127             BA   0.583
128             LG    0.15    0.38    6.40    0.16       4
129             UI      49      50      49      48      88     138     176     216     256     293
130             UI     325     344     361     399     425     492     580     572     421     361
131             UI     330     296     294     282     258     256     238     224     218     201
132             UI     191     188     170     150     145     128     123     124     113     111
133             UI     107     102      88      82      79      66      64      62      61      55
134             UI      53       0       0       0       0       0       0       0       0       0
135             UI       0       0       0       0       0       0       0       0       0       0
1                                                HEC-1 INPUT                                          PAGE  4

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

136             UI       0       0       0       0       0       0       0       0       0       0
                *

137             KK   511B2   BASIN
138             KM   Sub-Basin   511B2
139             KM
140             KM      The Phoenix Mountain S-Graph is used for this basin.
141             KM
142             BA   0.222
143             LG    0.15    0.38    6.40    0.16       0
144             UI      23      24      23      36      71      91     113     140     153     166
145             UI     185     198     238     289     227     172     155     140     135     129
146             UI     118     110     105      96      91      86      75      69      62      57
147             UI      56      55      49      47      40      38      31      31      29      26
148             UI      26      25      21      18      18      18      18      12      12      11
149             UI      12       0       0       0       0       0       0       0       0       0
150             UI       0       0       0       0       0       0       0       0       0       0
151             UI       0       0       0       0       0       0       0       0       0       0
152             UI       0       0       0       0       0       0       0       0       0       0
153             UI       0       0       0       0       0       0       0       0       0       0
154             UI       0       0       0       0       0       0       0       0       0       0
155             UI       0       0       0       0       0       0       0       0       0       0
156             UI       0       0       0       0       0       0       0       0       0       0
157             UI       0       0       0       0       0       0       0       0       0       0
158             UI       0       0       0       0       0       0       0       0       0       0
                *

159             KK  CPB1B2
160             KM     Combine hydrograph from 511B1 and 511B2
161             HC       2
                *

162             KK  RT12B4   ROUTE   REACH
163             KM   Normal depth channel route from CPB1B2 to 511B4
164             RS       3    FLOW      -1
165             RC   0.070   0.040   0.070    3973  0.0186 2582.00
166             RX     0.0    36.4    62.6    86.9    98.0   114.8   303.0   378.7
167             RY  2582.0  2578.0  2576.0  2574.0  2573.4  2574.0  2578.0  2582.0
                *

168             KK   511B3   BASIN
169             KM   Sub-Basin   511B3
170             KM
171             KM      The Phoenix Mountain S-Graph is used for this basin.
172             KM
173             BA   0.080
174             LG    0.15    0.37    6.60    0.14       0
175             UI      15      15      44      68      97     109     130     176     120      96
176             UI      85      76      69      62      50      44      38      35      31      26
177             UI      21      18      17      16      11      12       9       8       7       7
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178          UI       7       3       2       3       3       3       3       3       3       2
179          UI       3       0       0       0       0       0       0       0       0       0
180          UI       0       0       0       0       0       0       0       0       0       0
181          UI       0       0       0       0       0       0       0       0       0       0
182          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

183          UI       0       0       0       0       0       0       0       0       0       0
184          UI       0       0       0       0       0       0       0       0       0       0
185          UI       0       0       0       0       0       0       0       0       0       0
186          UI       0       0       0       0       0       0       0       0       0       0
187          UI       0       0       0       0       0       0       0       0       0       0
188          UI       0       0       0       0       0       0       0       0       0       0
189          UI       0       0       0       0       0       0       0       0       0       0
             *

190          KK  RTB3B4   ROUTE   REACH
191          KM   Normal depth channel route from 511B3 to 511B4
192          RS       2    FLOW      -1
193          RC   0.070   0.040   0.070    3126  0.0205 2565.00
194          RX     0.0    16.6    28.0    34.2    39.7    63.8   108.6   198.6
195          RY  2563.0  2562.0  2560.8  2560.3  2560.6  2562.0  2564.3  2565.0
             *

196          KK   CP11B
197          KM     Combine routed hydrographs from CPB1B2 and 511B3 with 511B4
198          HC       3
             *

199          KK   RTB4D   ROUTE   REACH
200          KM   Normal depth channel route from CP11B to RTB4D
201          RS       1    FLOW      -1
202          RC   0.070   0.040   0.070     521  0.0179 2536.00
203          RX     0.0    89.0   118.0   165.0   222.0   363.0   411.0   516.0
204          RY  2536.0  2534.0  2532.0  2531.5  2532.0  2532.2  2532.8  2534.0
             *

205          KK  CP11DF
206          KM     Combine routed hydrographs from CP11D and RTB4D
207          HC       2
             * ---------------------------------------------------------------------------
             *

208          KK    RTDF   ROUTE   REACH
209          KM   Normal depth channel route from CP11DF to CP11F                          R
210          RS       3    FLOW      -1
211          RC   0.070   0.040   0.070    3664  0.0191  151.20
212          RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
213          RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
             *

214          KK    511F   BASIN
215          KM   Sub-Basin   511F
216          KM
217          KM      The Phoenix Mountain S-Graph is used for this basin.
218          KM
219          BA   0.157
220          LG    0.14    0.38    6.40    0.15       4
221          UI      26      27      62     103     152     177     202     250     312     209
222          UI     172     149     138     130     111     101      88      73      63      63
223          UI      55      46      41      33      30      30      24      21      20      17
224          UI      12      14      12      13       7       5       5       5       5       5
1                                          HEC-1 INPUT                                          PAGE  6

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

225          UI       6       5       5       5       5       5       0       0       0       0
             *

226          KK   CP11F
227          KM     Combine routed hydrograph from CP11DF with runoff from 511F
228          HC       2
             *

229          KK   511C1   BASIN
230          KM   Sub-Basin   511C1
231          KM
232          KM      The Phoenix Mountain S-Graph is used for this basin.
233          KM
234          BA   0.329
235          LG    0.15    0.40    6.00    0.18       0
236          UI      33      34      33      44      99     124     155     200     212     235
237          UI     256     276     317     389     386     271     235     210     197     193
238          UI     177     166     160     146     136     134     116     106      98      87
239          UI      81      81      77      71      72      54      55      47      43      42
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240          UI      39      37      36      34      26      25      27      25      23      17
241          UI      16       0       0       0       0       0       0       0       0       0
242          UI       0       0       0       0       0       0       0       0       0       0
243          UI       0       0       0       0       0       0       0       0       0       0
244          UI       0       0       0       0       0       0       0       0       0       0
245          UI       0       0       0       0       0       0       0       0       0       0
246          UI       0       0       0       0       0       0       0       0       0       0
247          UI       0       0       0       0       0       0       0       0       0       0
248          UI       0       0       0       0       0       0       0       0       0       0
             *

249          KK  DIC1E2
250          KM   DIVERT FLOW FROM 511C1 TO 511C4 AT NATURAL FLOW SPLIT
251          DT  DIC1C4
252          DI       0      75     150     225     300     480     650
253          DQ       0      38      77     117     155     250     340
             *

254          KK  RTC1E2   ROUTE   REACH
255          KM   Normal depth channel route from 511C1 to 511E2
256          RS       5    FLOW      -1
257          RC   0.070   0.040   0.070    7085  0.0209 2506.00
258          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
259          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

260          KK   511E1   BASIN
261          KM   Sub-Basin   511E1
262          KM
263          KM      The Phoenix Mountain S-Graph is used for this basin.
264          KM
265          BA   0.296
266          LG    0.15    0.40    6.00    0.18       0
267          UI      32      33      32      57     101     128     163     202     216     232
268          UI     261     291     350     392     261     222     206     185     179     170
269          UI     156     146     139     127     117     108      96      84      81      76
```



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

270          UI      72      71      65      51      53      42      40      41      36      35
271          UI      36      25      24      25      24      22      16      16      16      16
272          UI      15       0       0       0       0       0       0       0       0       0
273          UI       0       0       0       0       0       0       0       0       0       0
274          UI       0       0       0       0       0       0       0       0       0       0
275          UI       0       0       0       0       0       0       0       0       0       0
276          UI       0       0       0       0       0       0       0       0       0       0
277          UI       0       0       0       0       0       0       0       0       0       0
278          UI       0       0       0       0       0       0       0       0       0       0
279          UI       0       0       0       0       0       0       0       0       0       0
             *

280          KK  RTE1E2   ROUTE   REACH
281          KM   Normal depth channel route from 511E1 to 511E2
282          RS       3    FLOW      -1
283          RC   0.070   0.040   0.070    4907  0.0187 2506.00
284          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
285          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

286          KK   511E2   BASIN
287          KM   Sub-Basin   511E2
288          KM
289          KM      The Phoenix Mountain S-Graph is used for this basin.
290          KM
291          BA   0.276
292          LG    0.15    0.36    6.80    0.13       1
293          UI      28      28      28      38      82     104     129     168     179     197
294          UI     215     231     267     325     324     228     197     176     165     162
295          UI     149     138     134     123     115     112      97      89      83      73
296          UI      67      68      64      60      60      46      46      40      36      35
297          UI      33      31      30      29      21      22      22      21      19      14
298          UI      14       0       0       0       0       0       0       0       0       0
299          UI       0       0       0       0       0       0       0       0       0       0
300          UI       0       0       0       0       0       0       0       0       0       0
301          UI       0       0       0       0       0       0       0       0       0       0
302          UI       0       0       0       0       0       0       0       0       0       0
303          UI       0       0       0       0       0       0       0       0       0       0
304          UI       0       0       0       0       0       0       0       0       0       0
305          UI       0       0       0       0       0       0       0       0       0       0
             *

306          KK  CPE1E2
307          KM     Combine routed hydrographs from 511E1 with 511E2
308          HC       2
             *
```

```
 309          KK   511C4   BASIN
 310          KM   Sub-Basin   511C4
 311          KM
 312          KM      The Phoenix Mountain S-Graph is used for this basin.
 313          KM
 314          BA   0.020
 315          LG    0.15     0.40     6.00     0.18        0
 316          UI       7       21       42       57       67       40       34       27       21       16
1                                                HEC-1 INPUT                                                    PAGE  8

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

 317          UI      13        9        8        6        5        3        3        1        2        1
 318          UI       1        2        1        0        0        0        0        0        0        0
 319          UI       0        0        0        0        0        0        0        0        0        0
 320          UI       0        0        0        0        0        0        0        0        0        0
 321          UI       0        0        0        0        0        0        0        0        0        0
 322          UI       0        0        0        0        0        0        0        0        0        0
 323          UI       0        0        0        0        0        0        0        0        0        0
 324          UI       0        0        0        0        0        0        0        0        0        0
 325          UI       0        0        0        0        0        0        0        0        0        0
 326          UI       0        0        0        0        0        0        0        0        0        0
 327          UI       0        0        0        0        0        0        0        0        0        0
 328          UI       0        0        0        0        0        0        0        0        0        0
              *

 329          KK  DRC1C4
 330          KM        RETURN DIVERT FROM 511C1
 331          DR  DIC1C4
              *

 332          KK  RTC1C4   ROUTE   REACH
 333          KM   Normal depth channel route from 511C1 to 511C4
 334          RS       1    FLOW      -1
 335          RC   0.070   0.040   0.070    1058  0.0170 2605.30
 336          RX     0.0   104.0   140.0   187.0   243.0   273.0   302.0   324.0
 337          RY  2599.4  2599.6  2598.4  2598.3  2600.0  2602.0  2604.0  2605.3
              *

 338          KK  CP11C4
 339          KM     Combine routed hydrographs from 511C1 with 511C4
 340          HC       2
              *

 341          KK  DIC4E2
 342          KM   DIVERT FLOW FROM 511C4 TO 511C5 AT NATURAL FLOW SPLIT
 343          DT  DIC4C5
 344          DI       0      25     100     150     300     400     500
 345          DQ       0      20      73     106     203     264     325
              *

 346          KK  RTC4E2   ROUTE   REACH
 347          KM   Normal depth channel route from 511C4 to 511E2
 348          RS       4    FLOW      -1
 349          RC   0.070   0.040   0.070    6075  0.0214 2506.00
 350          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
 351          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
              *

 352          KK  CP11E2
 353          KM     Combine routed hydrographs from CPE1E2, RTC1E2,RTC4E2
 354          HC       3
              *
1                                                HEC-1 INPUT                                                    PAGE  9

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

 355          KK   511C5   BASIN
 356          KM   Sub-Basin   511C5
 357          KM
 358          KM      The Phoenix Mountain S-Graph is used for this basin.
 359          KM
 360          BA   0.110
 361          LG    0.15     0.35     7.00     0.12        0
 362          UI      19       20       51       80      120      136      156      213      198      136
 363          UI     119      106       94       87       76       66       57       48       44       43
 364          UI      33       28       25       22       21       16       15       15       10        9
 365          UI      10        9        7        4        4        3        4        4        4        3
 366          UI       4        4        4        0        0        0        0        0        0        0
 367          UI       0        0        0        0        0        0        0        0        0        0
 368          UI       0        0        0        0        0        0        0        0        0        0
 369          UI       0        0        0        0        0        0        0        0        0        0
 370          UI       0        0        0        0        0        0        0        0        0        0
 371          UI       0        0        0        0        0        0        0        0        0        0
 372          UI       0        0        0        0        0        0        0        0        0        0
 373          UI       0        0        0        0        0        0        0        0        0        0
```

```
374          UI       0       0       0       0       0       0       0       0       0       0
             *

375          KK  DRC4C5
376          KM        RETURN DIVERT FROM 511C4
377          DR  DIC4C5
             *

378          KK  RTC4C5   ROUTE   REACH
379          KM   Normal depth channel route from 511C4 to 511C5
380          RS       2    FLOW      -1
381          RC   0.070   0.040   0.070    3182  0.0236 2532.20
382          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
383          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
             *

384          KK   511C3   BASIN
385          KM   Sub-Basin   511C3
386          KM
387          KM      The Phoenix Mountain S-Graph is used for this basin.
388          KM
389          BA   0.141
390          LG    0.15    0.40    6.00    0.18       0
391          UI      22      22      40      73     109     134     156     176     212     250
392          UI     171     140     125     117     106      95      90      76      68      58
393          UI      53      49      47      37      34      28      27      23      24      18
394          UI      17      17      13      10      11      10      10       9       4       4
395          UI       4       4       4       5       4       4       4       4       4       5
396          UI       0       0       0       0       0       0       0       0       0       0
397          UI       0       0       0       0       0       0       0       0       0       0
398          UI       0       0       0       0       0       0       0       0       0       0
399          UI       0       0       0       0       0       0       0       0       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
402          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

403          UI       0       0       0       0       0       0       0       0       0       0
             *

404          KK  RTC3C5   ROUTE   REACH
405          KM   Normal depth channel route from 511C3 to 511C5
406          RS       2    FLOW      -1
407          RC   0.070   0.040   0.070    3234  0.0232 2532.20
408          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
409          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
             *

410          KK   511C2   BASIN
411          KM   Sub-Basin   511C2
412          KM
413          KM      The Phoenix Mountain S-Graph is used for this basin.
414          KM
415          BA   0.392
416          LG    0.15    0.40    6.00    0.18       0
417          UI      36      38      36      36      98     119     148     191     216     238
418          UI     266     275     296     349     403     442     338     270     241     227
419          UI     215     203     193     182     170     164     150     144     137     122
420          UI     114     100      93      90      88      84      77      78      62      59
421          UI      57      47      46      48      39      40      41      36      28      29
422          UI      28       0       0       0       0       0       0       0       0       0
423          UI       0       0       0       0       0       0       0       0       0       0
424          UI       0       0       0       0       0       0       0       0       0       0
425          UI       0       0       0       0       0       0       0       0       0       0
426          UI       0       0       0       0       0       0       0       0       0       0
427          UI       0       0       0       0       0       0       0       0       0       0
428          UI       0       0       0       0       0       0       0       0       0       0
429          UI       0       0       0       0       0       0       0       0       0       0
             *

430          KK  DIC2C5
431          KM   DIVERT FLOW FROM 511C2 TO 509A2 AT NATURAL FLOW SPLIT
432          DT  DIC2A2
433          DI       0      25      70     150     300     400     500
434          DQ       0       7    22.5      51     111     152     197
             *

435          KK  RTC2C5   ROUTE   REACH
436          KM   Normal depth channel route from 511C2 to 511C5
437          RS       2    FLOW      -1
438          RC   0.070   0.040   0.070    3086  0.0230 2554.50
439          RX     0.0     9.3    49.5   114.2   122.3   140.1   149.6   197.3
440          RY  2554.5  2554.0  2552.2  2552.0  2551.8  2551.6  2552.0  2553.8
             *
```

```
 441          KK  CP11C5
 442          KM     Combine routed hydrographs from 511C5, RTC4C5, RTC3C5, RTC2C5
 443          HC       4
              *
1                                          HEC-1 INPUT                                                    PAGE 11

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


 444          KK  DIC5E2
 445          KM   DIVERT FLOW FROM 511C5 TO 511C6 AT NATURAL FLOW SPLIT
 446          DT  DIC5C6
 447          DI       0     100     150     200     250     300     350     400     450     500
 448          DI     550     600     650     700     750
 449          DQ       0      60      97     136     174     218     257     290     332     375
 450          DQ     418     455     369     401     421
              *

 451          KK  RTC5E2   ROUTE   REACH
 452          KM   Normal depth channel route from 511C5 to 511E2
 453          RS       2    FLOW      -1
 454          RC   0.070   0.040   0.070    2668  0.0217 2506.00
 455          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
 456          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
              *

 457          KK  CP11EF
 458          KM     Combine hydrographs CP11E2 and RTC5E2
 459          HC       2
              *

 460          KK    CPEF
 461          KM     Combine hydrographs from CP11EF and CP11F2
 462          HC       2
              *

 463          KK  RTEFC8   ROUTE   REACH
 464          KM   Normal depth channel route from CPEF to CP11C8
 465          RS       1    FLOW      -1
 466          RC   0.070   0.040   0.070    1278  0.0141 2454.00
 467          RX     0.0    86.0    91.9   125.2   207.6   319.0   482.9   605.1
 468          RY  2454.0  2448.0  2447.0  2447.0  2448.0  2450.0  2451.0  2452.0
              *

 469          KK   511C8   BASIN
 470          KM   Sub-Basin   5118
 471          KM
 472          KM      The Phoenix Mountain S-Graph is used for this basin.
 473          KM
 474          BA   0.041
 475          LG    0.15    0.37    5.20    0.25       0
 476          UI      13      34      69      94     139      89      70      59      48      36
 477          UI      30      25      17      15      12      10       7       6       5       3
 478          UI       2       3       2       3       2       0       0       0       0       0
 479          UI       0       0       0       0       0       0       0       0       0       0
 480          UI       0       0       0       0       0       0       0       0       0       0
 481          UI       0       0       0       0       0       0       0       0       0       0
 482          UI       0       0       0       0       0       0       0       0       0       0
 483          UI       0       0       0       0       0       0       0       0       0       0
 484          UI       0       0       0       0       0       0       0       0       0       0
 485          UI       0       0       0       0       0       0       0       0       0       0
 486          UI       0       0       0       0       0       0       0       0       0       0
 487          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

 488          UI       0       0       0       0       0       0       0       0       0       0
 489          UI       0       0       0       0       0       0       0       0       0       0
 490          UI       0       0       0       0       0       0       0       0       0       0
 491          UI       0       0       0       0       0       0       0       0       0       0
              *

 492          KK  CP11C8
 493          KM     Combine routed hydrograph from CPEF with 511C8
 494          HC       2
              *

 495          KK  RTC8C7   ROUTE   REACH
 496          KM   Normal depth channel route from CP11C8 to 511C7
 497          RS       1    FLOW      -1
 498          RC   0.070   0.040   0.070     547  0.0146 2460.00
 499          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
 500          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
              *

 501          KK   511C7   BASIN
```

```
502          KM   Sub-Basin   511C7
503          KM
504          KM      The Phoenix Mountain S-Graph is used for this basin.
505          KM
506          BA   0.121
507          LG    0.14    0.39    6.20    0.16       7
508          UI      17      17      25      53      73      99     113     130     139     177
509          UI     201     127     110     102      91      84      82      71      65      59
510          UI      50      45      42      38      35      32      28      22      22      19
511          UI      19      18      13      13      13      10       8       9       8       8
512          UI       9       3       3       4       3       3       3       4       3       3
513          UI       4       0       0       0       0       0       0       0       0       0
514          UI       0       0       0       0       0       0       0       0       0       0
515          UI       0       0       0       0       0       0       0       0       0       0
516          UI       0       0       0       0       0       0       0       0       0       0
517          UI       0       0       0       0       0       0       0       0       0       0
518          UI       0       0       0       0       0       0       0       0       0       0
519          UI       0       0       0       0       0       0       0       0       0       0
520          UI       0       0       0       0       0       0       0       0       0       0
521          UI       0       0       0       0       0       0       0       0       0       0
522          UI       0       0       0       0       0       0       0       0       0       0
523          UI       0       0       0       0       0       0       0       0       0       0
             *

524          KK   511C6   BASIN
525          KM   Sub-Basin   511C6
526          KM
527          KM      The Phoenix Mountain S-Graph is used for this basin.
528          KM
529          BA   0.035
530          LG    0.15    0.35    7.00    0.12       0
531          UI       8      10      24      39      53      60      82      63      46      41
532          UI      37      32      28      23      18      17      16      12       9       9
533          UI       8       6       6       4       4       4       4       2       1       2
534          UI       1       2       1       2       1       2       0       0       0       0
```



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

535          UI       0       0       0       0       0       0       0       0       0       0
536          UI       0       0       0       0       0       0       0       0       0       0
537          UI       0       0       0       0       0       0       0       0       0       0
538          UI       0       0       0       0       0       0       0       0       0       0
539          UI       0       0       0       0       0       0       0       0       0       0
540          UI       0       0       0       0       0       0       0       0       0       0
541          UI       0       0       0       0       0       0       0       0       0       0
542          UI       0       0       0       0       0       0       0       0       0       0
543          UI       0       0       0       0       0       0       0       0       0       0
544          UI       0       0       0       0       0       0       0       0       0       0
545          UI       0       0       0       0       0       0       0       0       0       0
546          UI       0       0       0       0       0       0       0       0       0       0
             *

547          KK  DRC5C6
548          KM        RETURN DIVERT FROM 511C5
549          DR  DIC5C6
             *

550          KK  RTC5C6   ROUTE   REACH
551          KM   Normal depth channel route from 511C5 to 511C6
552          RS       2    FLOW      -1
553          RC   0.070   0.040   0.070    2644  0.0155 2490.80
554          RX     0.0    68.8   177.6   245.2   257.0   350.0   363.8   398.6
555          RY  2490.0  2489.3  2488.8  2490.0  2489.0  2489.0  2490.0  2490.8
             *

556          KK  CP11C6
557          KM     Combine routed hydrograph from 511C6 and RTC5C6
558          HC       2
             *
             *

559          KK  RTC6C7   ROUTE   REACH
560          KM   Normal depth channel route from 511C6 to 511C7
561          RS       1    FLOW      -1
562          RC   0.070   0.040   0.070    1801  0.0233 2450.10
563          RX     0.0    73.0    80.0    90.0    93.0    96.0   103.0   162.0
564          RY  2450.1  2448.0  2446.0  2444.0  2443.7  2444.0  2446.0  2448.0
             *

565          KK  CP11C7
566          KM     Combine routed hydrograph from CP11C8, 511C7, RTC6C7
567          HC       3
             *

568          KK   RTC7H   ROUTE   REACH
569          KM   Normal depth channel route from 511C7 to 511H
```

```
570          RS       4    FLOW      -1
571          RC   0.070   0.040   0.070    6348  0.0176 2460.00
572          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
573          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
574          RL                    0.62  2356.3
             *
1                                        HEC-1 INPUT                                                    PAGE 14

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

575          KK    511H   BASIN
576          KM   Sub-Basin   511H
577          KM
578          KM      The Phoenix Mountain S-Graph is used for this basin.
579          KM
580          BA   0.303
581          LG    0.15    0.35    4.40    0.38       1
582          UI      32      34      32      59     104     132     166     207     221     238
583          UI     267     297     358     402     267     227     211     189     183     174
584          UI     161     149     142     131     119     111      98      86      82      78
585          UI      74      73      66      53      54      43      41      43      35      36
586          UI      37      25      25      26      25      22      17      16      16      16
587          UI      16       0       0       0       0       0       0       0       0       0
588          UI       0       0       0       0       0       0       0       0       0       0
589          UI       0       0       0       0       0       0       0       0       0       0
590          UI       0       0       0       0       0       0       0       0       0       0
591          UI       0       0       0       0       0       0       0       0       0       0
592          UI       0       0       0       0       0       0       0       0       0       0
593          UI       0       0       0       0       0       0       0       0       0       0
594          UI       0       0       0       0       0       0       0       0       0       0
595          UI       0       0       0       0       0       0       0       0       0       0
596          UI       0       0       0       0       0       0       0       0       0       0
597          UI       0       0       0       0       0       0       0       0       0       0
             *

598          KK   CP11H
599          KM     Combine routed hydrographs from RTC7H with 511H
600          HC       2
             *

601          KK   RTHG4   ROUTE   REACH
602          KM   Normal depth channel route from CPC7H TO 511G4
603          RS       1    FLOW      -1
604          RC   0.070   0.040   0.070     933  0.0209 2336.00
605          RX     0.0    44.0    71.0    80.0    90.0   101.0   143.0   154.0
606          RY  2336.0  2330.0  2324.0  2323.3  2324.0  2330.0  2334.0  2335.0
             *

607          KK   511G1   BASIN
608          KM   Sub-Basin   511G1
609          KM
610          KM      The Phoenix Mountain S-Graph is used for this basin.
611          KM
612          BA   0.310
613          LG    0.15    0.38    5.60    0.22       8
614          UI      51      53     122     205     299     350     400     492     618     411
615          UI     340     294     274     255     220     198     174     144     126     124
616          UI     108      91      80      66      60      59      48      40      41      32
617          UI      25      26      25      26      13      10      10      10      10      10
618          UI      10      10      10      10      10      10       0       0       0       0
619          UI       0       0       0       0       0       0       0       0       0       0
620          UI       0       0       0       0       0       0       0       0       0       0
621          UI       0       0       0       0       0       0       0       0       0       0
622          UI       0       0       0       0       0       0       0       0       0       0
1                                        HEC-1 INPUT                                                    PAGE 15

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

623          UI       0       0       0       0       0       0       0       0       0       0
             *

624          KK  RTG1G2   ROUTE   REACH
625          KM   Normal depth channel route from 511G1 to 511G2
626          RS       3    FLOW      -1
627          RC   0.070   0.040   0.070    4246  0.0146 2472.00
628          RX    19.0    45.0    98.0   182.0   219.0   234.0   270.0   308.0
629          RY  2472.0  2470.0  2468.0  2466.0  2465.5  2466.0  2468.0  2472.0
             *

630          KK   511G2   BASIN
631          KM   Sub-Basin   511G2
632          KM
633          KM      The Phoenix Mountain S-Graph is used for this basin.
634          KM
635          BA   0.157
636          LG    0.15    0.37    5.30    0.24       0
```

```
637          UI      23      23      39      74     108     137     158     179     212     263
638          UI     221     161     137     134     117     110     100      90      83      70
639          UI      60      56      53      48      42      39      29      28      26      25
640          UI      21      18      18      17      11      11      12      11      11       7
641          UI       4       5       4       5       4       4       5       4       5       4
642          UI       5       0       0       0       0       0       0       0       0       0
643          UI       0       0       0       0       0       0       0       0       0       0
644          UI       0       0       0       0       0       0       0       0       0       0
645          UI       0       0       0       0       0       0       0       0       0       0
646          UI       0       0       0       0       0       0       0       0       0       0
             *

647          KK  CP11G2
648          KM     Combine routed hydrographs from 511G1, 511G2 and CPC7H
649          HC       2
             *

650          KK  RTG2G4   ROUTE   REACH
651          RS       4    FLOW      -1
652          RC   0.070   0.040   0.070    5908  0.0190 2472.00
653          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
654          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

655          KK   511G3   BASIN
656          KM   Sub-Basin   511G3
657          KM
658          KM      The Phoenix Mountain S-Graph is used for this basin.
659          KM
660          BA   0.097
661          LG    0.15    0.36    5.00    0.28       0
662          UI      14      15      23      46      67      84      99     110     130     163
663          UI     137     100      84      83      72      68      62      56      50      44
664          UI      37      34      33      30      26      24      18      18      16      15
665          UI      13      11      11      10       7       7       7       7       7       4
666          UI       3       2       3       3       3       2       3       3       3       2
667          UI       3       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 16

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

668          UI       0       0       0       0       0       0       0       0       0       0
669          UI       0       0       0       0       0       0       0       0       0       0
670          UI       0       0       0       0       0       0       0       0       0       0
671          UI       0       0       0       0       0       0       0       0       0       0
             *

672          KK  RTG3G4   ROUTE   REACH
673          KM   Normal depth channel route from 511G3 to 511G4
674          RS       4    FLOW      -1
675          RC   0.070   0.040   0.070    5322  0.0231 2380.30
676          RX    34.0    65.0    84.0    98.0   105.0   131.0   166.0   173.0
677          RY  2380.0  2378.0  2376.0  2374.0  2376.0  2378.0  2380.0  2380.3
             *

678          KK   511G4   BASIN
679          KM   Sub-Basin   511G4
680          KM
681          KM      The Phoenix Mountain S-Graph is used for this basin.
682          KM
683          BA   0.298
684          LG    0.15    0.35    4.65    0.32       1
685          UI      33      34      33      67     110     139     179     213     230     248
686          UI     285     321     402     343     248     217     204     189     176     171
687          UI     155     144     140     124     111     104      89      83      82      76
688          UI      71      68      54      53      44      42      40      37      37      33
689          UI      26      26      25      26      18      17      16      17      16      17
690          UI      16       0       0       0       0       0       0       0       0       0
691          UI       0       0       0       0       0       0       0       0       0       0
692          UI       0       0       0       0       0       0       0       0       0       0
693          UI       0       0       0       0       0       0       0       0       0       0
694          UI       0       0       0       0       0       0       0       0       0       0
             *

695          KK  CPG_G4
696          KM     Combine routed hydrographs from RTG2G4, RTG3G4 and 511G4
697          HC       3
             *

698          KK  CP11G4
699          KM     Combine routed hydrographs from RTHG4 and CPG_G4
700          HC       2
             *

701          KK   RTG4I   ROUTE   REACH
702          RS       3    FLOW      -1
703          RC   0.070   0.040   0.070    4438  0.0361 2460.00
```

```
 704          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
 705          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
              *
1                                        HEC-1 INPUT                                                    PAGE 17

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

 706          KK    511I   BASIN
 707          KM   Sub-Basin   511I
 708          KM
 709          KM      The Phoenix Mountain S-Graph is used for this basin.
 710          KM
 711          BA   0.198
 712          LG    0.14    0.35    4.10    0.44       2
 713          UI      28      28      40      86     121     162     184     213     228     290
 714          UI     328     209     179     166     151     137     133     117     107      96
 715          UI      82      72      69      63      58      52      46      36      36      32
 716          UI      30      28      22      21      22      16      14      14      13      14
 717          UI      14       5       5       6       5       5       6       5       5       5
 718          UI       6       0       0       0       0       0       0       0       0       0
 719          UI       0       0       0       0       0       0       0       0       0       0
              *

 720          KK   CP11I
 721          KM     Combine routed hydrograph from RTG2I with runoff from 511I
 722          KO                                      21
 723          HC       2
              *
              *
              * ******************************************************************************
              * ******************************     Major Basin 510     ************************
              * ******************************************************************************
              *

 724          KK    510A   BASIN
 725          KM   Sub-Basin   510A
 726          KM
 727          KM      The Phoenix Mountain S-Graph is used for this basin.
 728          KM
 729          BA   0.923
 730          KO                                      21
 731          LG    0.12    0.39    6.20    0.15      10
 732          UI      63      64      63      63      64     106     182     212     240     286
 733          UI     347     373     402     435     459     472     507     535     601     691
 734          UI     753     746     570     467     446     419     383     370     381     338
 735          UI     329     330     308     294     290     269     251     253     238     215
 736          UI     212     197     177     171     160     153     156     144     144     139
 737          UI     133       0       0       0       0       0       0       0       0       0
 738          UI       0       0       0       0       0       0       0       0       0       0
 739          UI       0       0       0       0       0       0       0       0       0       0
 740          UI       0       0       0       0       0       0       0       0       0       0
 741          UI       0       0       0       0       0       0       0       0       0       0
 742          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
              * ******************************************************************************
              * ******************************     Major Basin 509     ************************
              * ******************************************************************************
              *
1                                        HEC-1 INPUT                                                    PAGE 18

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

 743          KK   509A5   BASIN
 744          KM   Sub-Basin   509A5
 745          KM
 746          KM      The Phoenix Mountain S-Graph is used for this basin.
 747          KM
 748          BA   0.020
 749          LG    0.12    0.36    5.10    0.24       9
 750          UI       7      21      42      57      67      40      34      27      21      16
 751          UI      13       9       8       6       5       3       3       1       2       1
 752          UI       1       2       1       0       0       0       0       0       0       0
 753          UI       0       0       0       0       0       0       0       0       0       0
 754          UI       0       0       0       0       0       0       0       0       0       0
 755          UI       0       0       0       0       0       0       0       0       0       0
 756          UI       0       0       0       0       0       0       0       0       0       0
 757          UI       0       0       0       0       0       0       0       0       0       0
 758          UI       0       0       0       0       0       0       0       0       0       0
 759          UI       0       0       0       0       0       0       0       0       0       0
 760          UI       0       0       0       0       0       0       0       0       0       0
 761          UI       0       0       0       0       0       0       0       0       0       0
              *

 762          KK  DIA59B
```

```
763          KM   DIVERT FLOW FROM 509A5 TO 509A6 BY NATURAL FLOW SPLIT
764          DT   DIA5S
765          DI       0      75     150     225     308     480     650
766          DQ       0       2      15      30      50      95     140
             *

767          KK  RTA59B   ROUTE   REACH
768          KM   Normal depth channel route from 509A5 to 509B
769          RS      13    FLOW      -1
770          RC   0.070   0.040   0.070   18484  0.0233 2188.00
771          RX     0.0    61.0   150.0   160.0   164.0   174.0   266.0   290.0
772          RY  2184.6  2184.0  2182.0  2180.0  2179.8  2180.0  2186.0  2188.0
             *

773          KK    509B   BASIN
774          KM   Sub-Basin   509B
775          KM
776          KM      The Phoenix Mountain S-Graph is used for this basin.
777          KM
778          BA   0.654
779          LG    0.15    0.36    5.10    0.26       0
780          UI      39      40      39      39      40      38      80     116     125     150
781          UI     172     190     226     240     255     262     289     292     304     327
782          UI     348     381     433     481     463     377     304     281     268     245
783          UI     239     234     225     217     214     201     194     191     180     175
784          UI     172     159     156     154     140     133     129     121     110     107
785          UI     101       0       0       0       0       0       0       0       0       0
786          UI       0       0       0       0       0       0       0       0       0       0
787          UI       0       0       0       0       0       0       0       0       0       0
788          UI       0       0       0       0       0       0       0       0       0       0
789          UI       0       0       0       0       0       0       0       0       0       0
790          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 19

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

791          UI       0       0       0       0       0       0       0       0       0       0
             * ---------------------------------------------------------------------------

792          KK   CP09B
793          KM     Combine hydrographs from 509B and RTA59B
794          KO                                      21
795          HC       2
             *

796          KK   509A1   BASIN
797          KM   Sub-Basin   509A1
798          KM
799          KM      The Phoenix Mountain S-Graph is used for this basin.
800          KM
801          BA   0.193
802          LG    0.14    0.38    6.40    0.15       5
803          UI      23      24      23      56      82     107     137     156     171     181
804          UI     222     266     242     178     154     137     132     120     113     110
805          UI      95      90      83      72      64      60      55      52      51      45
806          UI      37      36      29      30      26      25      25      19      18      17
807          UI      19      13      11      12      11      11      12      11       4       4
808          UI       5       0       0       0       0       0       0       0       0       0
809          UI       0       0       0       0       0       0       0       0       0       0
810          UI       0       0       0       0       0       0       0       0       0       0
811          UI       0       0       0       0       0       0       0       0       0       0
812          UI       0       0       0       0       0       0       0       0       0       0
813          UI       0       0       0       0       0       0       0       0       0       0
814          UI       0       0       0       0       0       0       0       0       0       0
             *

815          KK  RTA1A2   ROUTE   REACH
816          KM   Normal depth channel route from 509A1 to 509A2
817          RS       1    FLOW      -1
818          RC   0.070   0.040   0.070    1427  0.0234 2464.80
819          RX     0.0    33.0    66.0    86.0   114.0   120.0   135.0   177.0
820          RY  2464.0  2463.7  2463.2  2462.8  2463.2  2463.8  2464.0  2464.8
             *

821          KK   509A2   BASIN
822          KM   Sub-Basin   509A2
823          KM
824          KM      The Phoenix Mountain S-Graph is used for this basin.
825          KM
826          BA   0.128
827          LG    0.13    0.36    6.80    0.12       6
828          UI      17      18      21      51      72      94     109     130     137     163
829          UI     210     155     119     107      98      93      84      78      70      66
830          UI      57      51      45      42      38      38      32      28      24      22
831          UI      20      19      19      14      13      13      13       9       8       9
832          UI       8       9       7       3       3       4       3       3       3       4
833          UI       3       0       0       0       0       0       0       0       0       0
```

```
 834          UI       0       0       0       0       0       0       0       0       0       0
 835          UI       0       0       0       0       0       0       0       0       0       0
 836          UI       0       0       0       0       0       0       0       0       0       0
 837          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 20

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

 838          UI       0       0       0       0       0       0       0       0       0       0
 839          UI       0       0       0       0       0       0       0       0       0       0
              *

 840          KK  DRC2A2
 841          KM        RETURN DIVERT FROM 511C2
 842          DR  DIC2A2
              *

 843          KK  RTC2A2   ROUTE   REACH
 844          KM   Normal depth channel route from 511C2 to 509A2
 845          RS       4    FLOW      -1
 846          RC   0.070   0.040   0.070    6045  0.0218 2520.00
 847          RX     0.0   147.0   228.3   252.5   257.8   262.8   282.7   348.4
 848          RY  2502.0  2500.6  2500.0  2498.0  2497.6  2498.0  2500.0  2520.0
              *

 849          KK  CP09A2
 850          KM     Combine routed hydrograph from 511E4 with runoff from 509A2
 851          HC       3
              *

 852          KK  RTA2A4   ROUTE   REACH
 853          KM   Normal depth channel route from 509A2 to 509A3
 854          RS       2    FLOW      -1
 855          RC   0.070   0.040   0.070    2604  0.0384 2426.00
 856          RX     0.0   103.0   187.0   344.0   439.0   505.0   563.0   596.0
 857          RY  2422.0  2418.0  2417.4  2417.3  2418.0  2416.4  2422.0  2426.0
              *

 858          KK   509A3   BASIN
 859          KM   Sub-Basin   509A3
 860          KM
 861          KM      The Phoenix Mountain S-Graph is used for this basin.
 862          KM
 863          BA   0.162
 864          LG    0.14    0.38    6.40    0.15       4
 865          UI      25      25      46      83     127     154     178     202     244     288
 866          UI     196     161     144     134     122     109     103      88      78      67
 867          UI      60      56      54      44      39      32      30      27      28      20
 868          UI      19      19      16      12      12      12      12      10       4       5
 869          UI       5       5       4       5       5       4       5       5       4       5
 870          UI       0       0       0       0       0       0       0       0       0       0
 871          UI       0       0       0       0       0       0       0       0       0       0
 872          UI       0       0       0       0       0       0       0       0       0       0
 873          UI       0       0       0       0       0       0       0       0       0       0
 874          UI       0       0       0       0       0       0       0       0       0       0
 875          UI       0       0       0       0       0       0       0       0       0       0
 876          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 21

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

 877          KK  RTA3A4   ROUTE   REACH
 878          KM   Normal depth channel route from 509A3 to 509A4
 879          RS       1    FLOW      -1
 880          RC   0.070   0.040   0.070     717  0.0167 2406.00
 881          RX     0.0    69.0   124.0   175.0   252.0   303.0   342.0   363.0
 882          RY  2404.8  2404.0  2403.5  2402.8  2403.6  2403.0  2404.0  2406.0
              *

 883          KK   509A4   BASIN
 884          KM   Sub-Basin   509A4
 885          KM
 886          KM      The Phoenix Mountain S-Graph is used for this basin.
 887          KM
 888          BA   0.062
 889          LG    0.15    0.36    6.80    0.13       1
 890          UI      16      32      72     106     139     175     111      95      79      67
 891          UI      56      44      37      33      24      20      18      14      12       9
 892          UI       7       8       4       3       3       4       3       3       3       3
 893          UI       0       0       0       0       0       0       0       0       0       0
 894          UI       0       0       0       0       0       0       0       0       0       0
 895          UI       0       0       0       0       0       0       0       0       0       0
 896          UI       0       0       0       0       0       0       0       0       0       0
 897          UI       0       0       0       0       0       0       0       0       0       0
 898          UI       0       0       0       0       0       0       0       0       0       0
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899          UI       0       0       0       0       0       0       0       0       0       0
900          UI       0       0       0       0       0       0       0       0       0       0
901          UI       0       0       0       0       0       0       0       0       0       0
             *

902          KK  CP09A4
903          KM     Combine hydrographs from 509A4, RTA2A4, RTA3A4
904          HC       3
             *
             * MODIFICATION STARTS
             *

905          KK  RTA4A6   ROUTE   REACH
906          KM   Normal depth channel route from CP509A4 to 509A6
907          RS       2    FLOW      -1
908          RC   0.070   0.040   0.070    1778  0.0185 2382.00
909          RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
910          RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
             *
             *

911          KK  DRA5A6
912          KM        RETURN DIVERT FROM 509A5
913          DR   DIA5S
             *
1                                        HEC-1 INPUT                                          PAGE 22

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

914          KK  RTA5A6   ROUTE   REACH
915          KM   Normal depth channel route from 509A5 to 509A6
916          RS       2    FLOW      -1
917          RC   0.070   0.040   0.070    1778  0.0185 2382.00
918          RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
919          RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
             *

920          KK   509A6   BASIN
921          KM   Sub-Basin   509A6
922          KM
923          KM      The Phoenix Mountain S-Graph is used for this basin.
924          KM
925          BA   0.032
926          KO                                      21
927          LG    0.15    0.32    7.60    0.10       0
928          UI       9      27      55      73     109      69      54      46      38      28
929          UI      24      19      14      11       9       8       6       4       4       2
930          UI       2       2       2       2       2       0       0       0       0       0
931          UI       0       0       0       0       0       0       0       0       0       0
932          UI       0       0       0       0       0       0       0       0       0       0
933          UI       0       0       0       0       0       0       0       0       0       0
934          UI       0       0       0       0       0       0       0       0       0       0
935          UI       0       0       0       0       0       0       0       0       0       0
936          UI       0       0       0       0       0       0       0       0       0       0
             *

937          KK  CP09A6
938          KM     Combine hydrographs from RTA4A6, RTA5A6, 509A6
939          HC       3
             *
             * END OF MODIFICATION
             *

940          KK    509D   BASIN
941          KM   Sub-Basin   509D
942          KM
943          KM      The Phoenix Mountain S-Graph is used for this basin.
944          KM
945          BA   0.382
946          KO                                      21
947          LG    0.14    0.40    6.00    0.17       4
948          UI      31      32      31      31      50      89     108     133     158     184
949          UI     201     216     229     245     263     292     348     391     308     250
950          UI     213     202     191     181     172     169     158     149     148     132
951          UI     126     125     113     105     101      88      81      80      76      72
952          UI      73      66      65      60      51      52      45      39      40      41
953          UI      34       0       0       0       0       0       0       0       0       0
954          UI       0       0       0       0       0       0       0       0       0       0
955          UI       0       0       0       0       0       0       0       0       0       0
956          UI       0       0       0       0       0       0       0       0       0       0
             *
             * ******************************************************************************
             * ******************************     Major Basin 500     ************************
             * ******************************************************************************
             *
1                                        HEC-1 INPUT                                          PAGE 23
```

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

 957          KK    500A   BASIN
 958          KM   Sub-Basin   500A
 959          KM
 960          KM      The Phoenix Mountain S-Graph is used for this basin.
 961          KM
 962          BA   0.204
 963          LG    0.15    0.37    5.20    0.25       1
 964          UI      28      30      41      89     124     167     189     221     235     298
 965          UI     338     215     184     172     155     142     137     120     110      99
 966          UI      85      75      70      65      59      54      46      38      37      33
 967          UI      31      30      21      22      22      17      14      15      13      14
 968          UI      15       5       6       5       6       5       6       5       6       5
 969          UI       6       0       0       0       0       0       0       0       0       0
              *

 970          KK    RTAB   ROUTE   REACH
 971          KM   Normal depth channel route from 500A to 500B
 972          RS       4    FLOW      -1
 973          RC   0.070   0.040   0.070    6187  0.0283 2261.00
 974          RX   822.0  1013.0  1035.0  1045.0  1049.0  1053.0  1076.0  1573.0
 975          RY  2261.0  2159.2  2158.9  2156.6  2156.8  2158.9  2159.0  2261.0
              *

 976          KK    500B   BASIN
 977          KM   Sub-Basin   500B
 978          KM
 979          KM      The Phoenix Mountain S-Graph is used for this basin.
 980          KM
 981          BA   0.192
 982          LG    0.12    0.37    5.30    0.22       8
 983          UI      20      20      20      32      62      77      98     121     133     143
 984          UI     161     171     206     250     196     149     133     122     116     112
 985          UI     102      95      91      84      79      73      66      59      54      49
 986          UI      48      48      42      41      34      33      27      26      26      22
 987          UI      23      21      18      16      15      16      15      11      10      10
 988          UI      10       0       0       0       0       0       0       0       0       0
 989          UI       0       0       0       0       0       0       0       0       0       0
 990          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 991          KK  CP500B
 992          KM     Combine routed hydrograph from 500A with runoff from 500B
 993          KO                                      21
 994          HC       2
              *
 995          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    15       511A1
                 .
                 .
    36           .       511A2
                 .           V
                 .           V
    51           .      RTA2A3
                 .           .
                 .           .
    57           .           .       511A3
                 .           .           .
                 .           .           .
    79       CP11A.......................
                 V
                 V
    82       RTA1D
                 .
                 .
    88           .        511D
                 .           .
                 .           .
   104       CP11D............
                 .
                 .
   107           .       511B4
                 .           .
                 .           .
   122           .           .       511B1
                 .           .           .
```

```
                .          .          .
137             .          .          .      511B2
                .          .          .          .
                .          .          .          .
159             .          .     CPB1B2............
                .          .          V
                .          .          V
162             .          .     RT12B4
                .          .          .
                .          .          .
168             .          .          .      511B3
                .          .          .          V
                .          .          .          V
190             .          .          .     RTB3B4
                .          .          .          .
                .          .          .          .
196             .      CP11B........................
                .          V
                .          V
199             .      RTB4D
                .          .
                .          .
205        CP11DF............
                V
                V
208         RTDF
                .
                .
214             .       511F
                .          .
                .          .
226        CP11F............
                .
                .
229             .      511C1
                .          .
                .          .
251             .          .-------> DIC1C4
249             .     DIC1E2
                .          V
                .          V
254             .     RTC1E2
                .          .
                .          .
260             .          .      511E1
                .          .          V
                .          .          V
280             .          .     RTE1E2
                .          .          .
                .          .          .
286             .          .          .      511E2
                .          .          .          .
                .          .          .          .
306             .          .     CPE1E2............
                .          .          .
                .          .          .
309             .          .          .      511C4
                .          .          .          .
                .          .          .          .
331             .          .          .          .          .<-------  DIC1C4
329             .          .          .          .     DRC1C4
                .          .          .          .          V
                .          .          .          .          V
332             .          .          .          .     RTC1C4
                .          .          .          .          .
                .          .          .          .          .
338             .          .          .     CP11C4............
                .          .          .          .
                .          .          .          .
343             .          .          .          .-------> DIC4C5
341             .          .          .     DIC4E2
                .          .          .          V
                .          .          .          V
346             .          .          .     RTC4E2
                .          .          .          .
                .          .          .          .
352             .     CP11E2........................
                .          .
                .          .
355             .          .      511C5
                .          .          .
                .          .          .
377             .          .          .          .<-------  DIC4C5
375             .          .          .     DRC4C5
                .          .          .          V
                .          .          .          V
378             .          .          .     RTC4C5
```

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                .          .          .          .
                .          .          .          .
384             .          .          .       511C3
                .          .          .          V
                .          .          .          V
404             .          .          .      RTC3C5
                .          .          .          .
                .          .          .          .
410             .          .          .          .       511C2
                .          .          .          .          .
                .          .          .          .          .
432             .          .          .          .          .-------> DIC2A2
430             .          .          .          .      DIC2C5
                .          .          .          .          V
                .          .          .          .          V
435             .          .          .          .      RTC2C5
                .          .          .          .          .
                .          .          .          .          .
441             .          .     CP11C5.................................
                .          .          .
                .          .          .
446             .          .          .-------> DIC5C6
444             .          .     DIC5E2
                .          .          V
                .          .          V
451             .          .     RTC5E2
                .          .          .
                .          .          .
457             .     CP11EF............
                .          .
                .          .
460        CPEF............
                V
                V
463      RTEFC8
                .
                .
469             .      511C8
                .          .
                .          .
492      CP11C8............
                V
                V
495      RTC8C7
                .
                .
501             .      511C7
                .          .
                .          .
524             .          .      511C6
                .          .          .
                .          .          .
549             .          .          .          .<-------  DIC5C6
547             .          .          .     DRC5C6
                .          .          .          V
                .          .          .          V
550             .          .          .     RTC5C6
                .          .          .          .
                .          .          .          .
556             .          .     CP11C6............
                .          .          V
                .          .          V
559             .          .     RTC6C7
                .          .          .
                .          .          .
565      CP11C7........................
                V
                V
568       RTC7H
                .
                .
575             .       511H
                .          .
                .          .
598       CP11H............
                V
                V
601       RTHG4
                .
                .
607             .      511G1
                .          V
                .          V
624             .     RTG1G2
                .          .
                .          .
630             .          .      511G2
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                .          .          .
                .          .          .
647             .      CP11G2...........
                .          V
                .          V
650             .      RTG2G4
                .          .
                .          .
655             .          .      511G3
                .          .          V
                .          .          V
672             .          .     RTG3G4
                .          .          .
                .          .          .
678             .          .          .      511G4
                .          .          .          .
                .          .          .          .
695             .      CPG_G4........................
                .          .
                .          .
698       CP11G4...........
                V
                V
701        RTG4I
                .
                .
706             .        511I
                .          .
                .          .
720        CP11I...........
                .
                .
724             .        510A
                .          .
                .          .
743             .          .      509A5
                .          .          .
                .          .          .
764             .          .          .-------->   DIA5S
762             .          .     DIA59B
                .          .          V
                .          .          V
767             .          .     RTA59B
                .          .          .
                .          .          .
773             .          .          .       509B
                .          .          .          .
                .          .          .          .
792             .          .      CP09B...........
                .          .          .
                .          .          .
796             .          .          .      509A1
                .          .          .          V
                .          .          .          V
815             .          .          .     RTA1A2
                .          .          .          .
                .          .          .          .
821             .          .          .          .      509A2
                .          .          .          .          .
                .          .          .          .          .
842             .          .          .          .          .          .<-------  DIC2A2
840             .          .          .          .          .     DRC2A2
                .          .          .          .          .          V
                .          .          .          .          .          V
843             .          .          .          .          .     RTC2A2
                .          .          .          .          .          .
                .          .          .          .          .          .
849             .          .          .     CP09A2........................
                .          .          .          V
                .          .          .          V
852             .          .          .     RTA2A4
                .          .          .          .
                .          .          .          .
858             .          .          .          .      509A3
                .          .          .          .          V
                .          .          .          .          V
877             .          .          .          .     RTA3A4
                .          .          .          .          .
                .          .          .          .          .
883             .          .          .          .          .      509A4
                .          .          .          .          .          .
                .          .          .          .          .          .
902             .          .          .     CP09A4........................
                .          .          .          V
                .          .          .          V
905             .          .          .     RTA4A6
                .          .          .          .
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                .          .          .          .
  913           .          .          .          .<-------   DIA5S
  911           .          .          .      DRA5A6
                .          .          .          V
                .          .          .          V
  914           .          .          .      RTA5A6
                .          .          .          .
                .          .          .          .
  920           .          .          .          .       509A6
                .          .          .          .          .
                .          .          .          .          .
  937           .          .      CP09A6.......................
                .          .          .
                .          .          .
  940           .          .          .        509D
                .          .          .          .
                .          .          .          .
  957           .          .          .          .        500A
                .          .          .          .          V
                .          .          .          .          V
  970           .          .          .          .        RTAB
                .          .          .          .          .
                .          .          .          .          .
  976           .          .          .          .          .        500B
                .          .          .          .          .          .
                .          .          .          .          .          .
  991           .          .          .          .      CP500B............
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                        *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997                *                                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.1                 *                                    *         609 SECOND STREET            *
*                                        *                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   30AUG06  TIME  13:22:34    *                                    *          (916) 756-1104              *
*                                        *                                    *                                      *
****************************************                                    ****************************************
```

```
Project ID: S_6EX - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_6EX.DAT
MODEL:      100-year, 6-hour Existing Condition Model
DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003

*** Modified South Watershed Model: Subbasin Added: 509A6 ***
                                                       DATE REVISED: 5/06/05
*** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
*** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
                                                       LAST UPDATE:  8/30/06


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

     IT          HYDROGRAPH TIME DATA
                        NMIN          2  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ       1200  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2    0  ENDING DATE
                      NDTIME       1558  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .03 HOURS
                      TOTAL TIME BASE   39.97 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


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

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            *            *
720 KK      *     CP11I  *
            *            *
            **************

722 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
724 KK      *      510A  *        BASIN
            *            *
            **************

730 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
792 KK      *     CP09B  *
            *            *
            **************

794 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
920 KK      *     509A6  *        BASIN
            *            *
            **************

926 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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                **************
                *            *
940 KK          *     509D   *        BASIN
                *            *
                **************

946 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .033  TIME INTERVAL IN HOURS


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


                **************
                *            *
991 KK          *    CP500B  *
                *            *
                **************

993 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .033  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
        OPERATION        STATION      FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                         511A1       272.   4.30          45.         11.          7.       .29

        HYDROGRAPH AT
+                         511A2        68.   4.10           9.          2.          1.       .06

        ROUTED TO
+                        RTA2A3        57.   4.37           9.          2.          1.       .06
+                                                                                                     2657.85        4.37

        HYDROGRAPH AT
+                         511A3       276.   4.27          45.         11.          7.       .29

        3 COMBINED AT
+                         CP11A       605.   4.30          98.         25.         15.       .65

        ROUTED TO
+                         RTA1D       564.   4.57          98.         25.         15.       .65
+                                                                                                      100.05        4.57

        HYDROGRAPH AT
+                          511D       132.   4.20          21.          5.          3.       .12

        2 COMBINED AT
+                         CP11D       656.   4.53         119.         30.         18.       .77

        HYDROGRAPH AT
+                         511B4       230.   4.17          38.          9.          6.       .19

        HYDROGRAPH AT
+                         511B1       476.   4.43          90.         23.         14.       .58

        HYDROGRAPH AT
+                         511B2       199.   4.33          34.          9.          5.       .22

        2 COMBINED AT
+                        CPB1B2       671.   4.40         125.         31.         19.       .81

        ROUTED TO
+                        RT12B4       642.   4.60         124.         31.         19.       .81
```

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+                                                                                    2575.67        4.60

          HYDROGRAPH AT
+                        511B3      94.   4.13        13.        3.        2.      .08

          ROUTED TO
+                        RTB3B4     86.   4.30        13.        3.        2.      .08
+                                                                                    2561.53        4.30

          3 COMBINED AT
+                        CP11B     855.   4.50       175.       44.       26.     1.08

          ROUTED TO
+                        RTB4D     854.   4.53       175.       44.       26.     1.08
+                                                                                    2532.74        4.53

          2 COMBINED AT
+                        CP11DF   1510.   4.53       294.       74.       44.     1.85

          ROUTED TO
+                        RTDF     1462.   4.73       294.       74.       44.     1.85
+                                                                                     101.70        4.73

          HYDROGRAPH AT
+                        511F      177.   4.17        27.        7.        4.      .16

          2 COMBINED AT
+                        CP11F    1536.   4.70       321.       80.       48.     2.00

          HYDROGRAPH AT
+                        511C1     282.   4.37        48.       12.        7.      .33

          DIVERSION TO
+                        DIC1C4    146.   4.37        25.        6.        4.      .33

          HYDROGRAPH AT
+                        DIC1E2    136.   4.37        23.        6.        3.      .33

          ROUTED TO
+                        RTC1E2    117.   4.83        23.        6.        3.      .33
+                                                                                    2496.49        4.83

          HYDROGRAPH AT
+                        511E1     262.   4.33        44.       11.        7.      .30

          ROUTED TO
+                        RTE1E2    236.   4.60        44.       11.        7.      .30
+                                                                                    2496.82        4.60

          HYDROGRAPH AT
+                        511E2     259.   4.37        46.       12.        7.      .28

          2 COMBINED AT
+                        CPE1E2    460.   4.53        90.       23.       14.      .57

          HYDROGRAPH AT
+                        511C4      26.   4.03         3.        1.        0.      .02

          HYDROGRAPH AT
+                        DRC1C4    146.   4.37        25.        6.        4.      .00

          ROUTED TO
+                        RTC1C4    143.   4.43        25.        6.        4.      .00
+                                                                                    2599.02        4.43

          2 COMBINED AT
+                        CP11C4    155.   4.37        28.        7.        4.      .02

          DIVERSION TO
+                        DIC4C5    109.   4.37        20.        5.        3.      .02

          HYDROGRAPH AT
+                        DIC4E2     46.   4.37         8.        2.        1.      .02

          ROUTED TO
+                        RTC4E2     33.   5.03         8.        2.        1.      .02
+                                                                                    2496.23        5.03

          3 COMBINED AT
+                        CP11E2    568.   4.63       121.       30.       18.      .92

          HYDROGRAPH AT
+                        511C5     131.   4.13        19.        5.        3.      .11

          HYDROGRAPH AT
+                        DRC4C5    109.   4.37        20.        5.        3.      .00
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          ROUTED TO
+                    RTC4C5     106.   4.53      20.      5.      3.     .00
+                                                                        2526.57     4.53

          HYDROGRAPH AT
+                     511C3     144.   4.20      21.      5.      3.     .14

          ROUTED TO
+                    RTC3C5     138.   4.33      21.      5.      3.     .14
+                                                                        2526.70     4.33

          HYDROGRAPH AT
+                     511C2     322.   4.40      56.     14.      8.     .39

          DIVERSION TO
+                    DIC2A2     120.   4.40      20.      5.      3.     .39

          HYDROGRAPH AT
+                    DIC2C5     202.   4.40      36.      9.      5.     .39

          ROUTED TO
+                    RTC2C5     191.   4.57      36.      9.      5.     .39
+                                                                        2552.52     4.57

          4 COMBINED AT
+                    CP11C5     510.   4.43      97.     24.     15.     .64

          DIVERSION TO
+                    DIC5C6     384.   4.43      69.     17.     10.     .64

          HYDROGRAPH AT
+                    DIC5E2     126.   4.43      28.      7.      4.     .64

          ROUTED TO
+                    RTC5E2     123.   4.63      28.      7.      4.     .64
+                                                                        2496.49     4.63

          2 COMBINED AT
+                    CP11EF     691.   4.63     149.     37.     22.    1.56

          2 COMBINED AT
+                      CPEF    2221.   4.67     470.    118.     71.    3.57

          ROUTED TO
+                    RTEFC8    2209.   4.70     470.    118.     71.    3.57
+                                                                        2449.66     4.70

          HYDROGRAPH AT
+                     511C8      50.   4.07       6.      1.      1.     .04

          2 COMBINED AT
+                    CP11C8    2215.   4.70     476.    119.     72.    3.61

          ROUTED TO
+                    RTC8C7    2213.   4.73     476.    119.     72.    3.61
+                                                                        2357.41     4.73

          HYDROGRAPH AT
+                     511C7     127.   4.23      21.      5.      3.     .12

          HYDROGRAPH AT
+                     511C6      44.   4.10       6.      2.      1.     .04

          HYDROGRAPH AT
+                    DRC5C6     384.   4.43      69.     17.     10.     .00

          ROUTED TO
+                    RTC5C6     351.   4.67      69.     17.     10.     .00
+                                                                        2489.62     4.67

          2 COMBINED AT
+                    CP11C6     368.   4.63      75.     19.     11.     .04

          ROUTED TO
+                    RTC6C7     362.   4.73      75.     19.     11.     .04
+                                                                        2446.68     4.70

          3 COMBINED AT
+                    CP11C7    2639.   4.70     571.    143.     86.    3.76

          ROUTED TO
+                     RTC7H    2577.   4.87     556.    139.     84.    3.76
+                                                                        2357.48     4.87

          HYDROGRAPH AT
+                      511H     223.   4.33      35.      9.      5.     .30
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          2 COMBINED AT
+                      CP11H    2673.   4.87      591.      148.      89.     4.07
          ROUTED TO
+                      RTHG4    2670.   4.87      591.      148.      89.     4.07
+                                                                          2329.74      4.87
          HYDROGRAPH AT
+                      511G1     329.   4.17       49.       12.       7.      .31
          ROUTED TO
+                     RTG1G2     298.   4.43       49.       12.       7.      .31
+                                                                          2466.85      4.43
          HYDROGRAPH AT
+                      511G2     151.   4.20       22.        5.       3.      .16
          2 COMBINED AT
+                     CP11G2     429.   4.37       71.       18.      11.      .47
          ROUTED TO
+                     RTG2G4     422.   4.50       71.       18.      11.      .47
+                                                                          2356.47      4.50
          HYDROGRAPH AT
+                      511G3      90.   4.20       13.        3.       2.      .10
          ROUTED TO
+                     RTG3G4      85.   4.43       13.        3.       2.      .10
+                                                                          2375.76      4.43
          HYDROGRAPH AT
+                      511G4     238.   4.33       38.        9.       6.      .30
          3 COMBINED AT
+                     CPG_G4     720.   4.43      121.       30.      18.      .86
          2 COMBINED AT
+                     CP11G4    3129.   4.80      712.      178.     107.     4.93
          ROUTED TO
+                      RTG4I    3115.   4.90      712.      178.     107.     4.93
+                                                                          2357.29      4.87
          HYDROGRAPH AT
+                       511I     158.   4.23       22.        6.       3.      .20
          2 COMBINED AT
+                      CP11I    3155.   4.87      734.      184.     110.     5.13
          HYDROGRAPH AT
+                       510A     707.   4.57      148.       37.      22.      .92
          HYDROGRAPH AT
+                      509A5      26.   4.03        3.        1.       0.      .02
          DIVERSION TO
+                      DIA5S       1.   4.03        0.        0.       0.      .02
          HYDROGRAPH AT
+                     DIA59B      25.   4.03        3.        1.       0.      .02
          ROUTED TO
+                     RTA59B      11.   5.87        3.        1.       0.      .02
+                                                                          2180.18      5.87
          HYDROGRAPH AT
+                       509B     384.   4.63       73.       18.      11.      .65
          2 COMBINED AT
+                      CP09B     385.   4.63       77.       19.      11.      .67
          HYDROGRAPH AT
+                      509A1     192.   4.27       33.        8.       5.      .19
          ROUTED TO
+                     RTA1A2     187.   4.37       33.        8.       5.      .19
+                                                                          2463.76      4.37
          HYDROGRAPH AT
+                      509A2     140.   4.23       24.        6.       4.      .13
          HYDROGRAPH AT
+                     DRC2A2     120.   4.40       20.        5.       3.      .00
          ROUTED TO
+                     RTC2A2     111.   4.67       20.        5.       3.      .00
```

```
+                                                                                                  2498.96        4.67

        3 COMBINED AT
+                       CP09A2      386.    4.47        77.        19.        12.        .32

        ROUTED TO
+                       RTA2A4      377.    4.60        77.        19.        12.        .32
+                                                                                                  2417.61        4.60

        HYDROGRAPH AT
+                        509A3      176.    4.20        28.         7.         4.        .16

        ROUTED TO
+                       RTA3A4      174.    4.27        28.         7.         4.        .16
+                                                                                                  2403.57        4.27

        HYDROGRAPH AT
+                        509A4       81.    4.07        11.         3.         2.        .06

        3 COMBINED AT
+                       CP09A4      554.    4.40       115.        29.        17.        .55

        ROUTED TO
+                       RTA4A6      547.    4.53       115.        29.        17.        .55
+                                                                                                  2380.83        4.53

        HYDROGRAPH AT
+                       DRA5A6        1.    4.03         0.         0.         0.        .00

        ROUTED TO
+                       RTA5A6        1.    4.37         0.         0.         0.        .00
+                                                                                                  2377.95        4.37

        HYDROGRAPH AT
+                        509A6       45.    4.03         6.         2.         1.        .03

        3 COMBINED AT
+                       CP09A6      565.    4.50       121.        30.        18.        .58

        HYDROGRAPH AT
+                         509D      304.    4.47        58.        14.         9.        .38

        HYDROGRAPH AT
+                         500A      191.    4.23        28.         7.         4.        .20

        ROUTED TO
+                         RTAB      185.    4.40        28.         7.         4.        .20
+                                                                                                  2157.00        4.40

        HYDROGRAPH AT
+                         500B      171.    4.33        30.         8.         5.        .19

        2 COMBINED AT
+                       CP500B      355.    4.37        59.        15.         9.        .40


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

D.6.4 SOUTH BASIN

(B) 100-Year, 6-Hour Event, Future Condition Model

```
1*************************************                                    *************************************
 *                                   *                                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                *    U.S. ARMY CORPS OF ENGINEERS   *
 *              JUL   1997             *                                *    HYDROLOGIC ENGINEERING CENTER  *
 *           VERSION 4.1               *                                *          609 SECOND STREET        *
 *                                     *                                *       DAVIS, CALIFORNIA 95616     *
 *  RUN DATE   30AUG06  TIME  13:22:51 *                                *          (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   Project ID: S_6FC - Major Basin: 01 - Return Period: 100 Years
        2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_6FC.DAT
        3           ID   MODEL:      100-year, 6-hour Future Condition Model
        4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003
        5           ID
        6           ID   *** Modified South Watershed Model: Subbasin Added: 509A6 ***
        7           ID                                                          DATE REVISED: 5/06/05
        8           ID   *** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
        9           ID   *** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
       10           ID                                                          LAST UPDATE:  8/30/06
       11           ID
                    *
                    *DIAGRAM
       12           IT       2                    1200
       13           IO       5
       14           IN      15
                    *
                    * ******************************************************************************
                    * ******************************     Major Basin 511    ************************
                    * ******************************************************************************
                    *

       15           KK   511A1   BASIN
       16           KM   Sub-Basin   511A1
       17           KM
       18           KM      The Phoenix Mountain S-Graph is used for this basin.
       19           KM
       20           BA   0.294
       21           KM   RAINFALL DEPTH OF 4.58 WAS SPATIALLY REDUCED AS SHOWN BY THE PB RECORD
       22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.952 WAS USED.
       23           PB   3.260
       24           PC   0.000   0.013   0.018   0.028   0.042   0.055   0.066   0.078   0.090   0.102
       25           PC   0.116   0.132   0.153   0.199   0.284   0.464   0.679   0.812   0.881   0.922
       26           PC   0.948   0.961   0.974   0.987   1.000
       27           LG    0.10    0.39    6.20    0.14      15
       28           UI      38      38      38     111     153     198     236     274     290     332
       29           UI     427     426     285     249     226     208     200     182     167     156
       30           UI     139     124     110      96      91      90      80      72      64      53
       31           UI      48      48      41      41      36      29      29      29      22      19
       32           UI      19      18      19      19      12       7       8       7       7       8
       33           UI       7       0       0       0       0       0       0       0       0       0
       34           UI       0       0       0       0       0       0       0       0       0       0
       35           UI       0       0       0       0       0       0       0       0       0       0
                    *

       36           KK   511A2   BASIN
       37           KM   Sub-Basin   511A2
       38           KM
       39           KM      The Phoenix Mountain S-Graph is used for this basin.
```

```
  40        KM
  41        BA   0.059
  42        LG    0.10    0.40    6.00    0.15      15
  43        UI      14      26      56      87     111     146     131      89      77      67
  44        UI      57      49      36      34      29      22      19      16      13      11
  45        UI       9       7       7       6       3       3       2       3       3       3
1                                          HEC-1 INPUT                                          PAGE  2

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

  46        UI       2       3       0       0       0       0       0       0       0       0
  47        UI       0       0       0       0       0       0       0       0       0       0
  48        UI       0       0       0       0       0       0       0       0       0       0
  49        UI       0       0       0       0       0       0       0       0       0       0
  50        UI       0       0       0       0       0       0       0       0       0       0
            *

  51        KK  RTA2A3   ROUTE   REACH
  52        KM   Normal depth channel route from 511A2 to 511A3
  53        RS       2    FLOW      -1
  54        RC   0.070   0.040   0.070    3286  0.0158 2664.50
  55        RX     0.0   100.1   119.0   129.4   137.7   156.2   367.9   409.0
  56        RY  2664.5  2658.0  2657.5  2657.0  2657.2  2658.0  2662.0  2662.5
            *

  57        KK   511A3   BASIN
  58        KM   Sub-Basin   511A3
  59        KM
  60        KM      The Phoenix Mountain S-Graph is used for this basin.
  61        KM
  62        BA   0.294
  63        LG    0.10    0.39    6.20    0.14      15
  64        UI      39      41      48     118     166     214     252     298     314     374
  65        UI     484     356     271     248     226     211     193     181     159     153
  66        UI     132     115     103      96      89      87      74      64      55      49
  67        UI      47      45      43      31      31      31      28      20      19      19
  68        UI      20      19      17       8       7       8       7       8       7       8
  69        UI       8       0       0       0       0       0       0       0       0       0
  70        UI       0       0       0       0       0       0       0       0       0       0
  71        UI       0       0       0       0       0       0       0       0       0       0
  72        UI       0       0       0       0       0       0       0       0       0       0
  73        UI       0       0       0       0       0       0       0       0       0       0
  74        UI       0       0       0       0       0       0       0       0       0       0
  75        UI       0       0       0       0       0       0       0       0       0       0
  76        UI       0       0       0       0       0       0       0       0       0       0
  77        UI       0       0       0       0       0       0       0       0       0       0
  78        UI       0       0       0       0       0       0       0       0       0       0
            *

  79        KK   CP11A
  80        KM     Combine routed hydrograph from 511A2 with runoff from 511A1 and 511A3
  81        HC       3
            *

  82        KK   RTA1D   ROUTE   REACH
  83        KM   Normal depth channel route from CP11A to 511D
  84        RS       4    FLOW      -1
  85        RC   0.070   0.040   0.070    5358  0.0186  151.20
  86        RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
  87        RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
            *
1                                          HEC-1 INPUT                                          PAGE  3

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

  88        KK    511D   BASIN
  89        KM   Sub-Basin   511D
  90        KM
  91        KM      The Phoenix Mountain S-Graph is used for this basin.
  92        KM
  93        BA   0.121
  94        LG    0.10    0.36    6.80    0.11      15
  95        UI      19      20      40      70     107     123     145     169     213     193
  96        UI     137     119     106     100      89      78      74      63      51      49
  97        UI      45      40      35      30      24      24      21      20      15      15
  98        UI      15      10       9      10       9       9       4       4       4       3
  99        UI       4       4       3       4       4       4       3       4       0       0
 100        UI       0       0       0       0       0       0       0       0       0       0
 101        UI       0       0       0       0       0       0       0       0       0       0
 102        UI       0       0       0       0       0       0       0       0       0       0
 103        UI       0       0       0       0       0       0       0       0       0       0
            *

 104        KK   CP11D
 105        KM     Combine routed hydrograph from CP11A with runoff from 511D
 106        HC       2
```

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                *

107             KK   511B4   BASIN
108             KM   Sub-Basin   511B4
109             KM
110             KM      The Phoenix Mountain S-Graph is used for this basin.
111             KM
112             BA   0.194
113             LG    0.10    0.36    6.80    0.11      27
114             UI      36      37     106     165     235     264     316     429     290     231
115             UI     208     183     167     150     123     105      94      84      75      62
116             UI      51      45      41      37      28      29      23      18      18      17
117             UI      15       8       6       7       7       7       7       7       7       7
118             UI       7       0       0       0       0       0       0       0       0       0
119             UI       0       0       0       0       0       0       0       0       0       0
120             UI       0       0       0       0       0       0       0       0       0       0
121             UI       0       0       0       0       0       0       0       0       0       0
                *

122             KK   511B1   BASIN
123             KM   Sub-Basin   511B1
124             KM
125             KM      The Phoenix Mountain S-Graph is used for this basin.
126             KM
127             BA   0.583
128             LG    0.10    0.38    6.40    0.13      19
129             UI      54      56      54      54     144     177     221     284     321     355
130             UI     395     408     442     518     599     658     502     401     360     338
131             UI     318     303     287     270     254     244     223     212     205     183
132             UI     169     148     138     134     131     124     115     116      92      89
133             UI      85      69      69      70      60      59      61      54      41      42
134             UI      42       0       0       0       0       0       0       0       0       0
135             UI       0       0       0       0       0       0       0       0       0       0
1                                                HEC-1 INPUT                                          PAGE  4

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

136             UI       0       0       0       0       0       0       0       0       0       0
                *

137             KK   511B2   BASIN
138             KM   Sub-Basin   511B2
139             KM
140             KM      The Phoenix Mountain S-Graph is used for this basin.
141             KM
142             BA   0.222
143             LG    0.10    0.38    6.40    0.13      15
144             UI      26      26      25      58      87     111     147     168     183     194
145             UI     233     272     306     221     178     158     156     141     128     127
146             UI     113     104     101      89      79      70      65      62      59      54
147             UI      51      44      40      33      33      30      28      28      23      20
148             UI      20      20      18      13      12      13      12      13      12      10
149             UI       5       0       0       0       0       0       0       0       0       0
150             UI       0       0       0       0       0       0       0       0       0       0
151             UI       0       0       0       0       0       0       0       0       0       0
152             UI       0       0       0       0       0       0       0       0       0       0
153             UI       0       0       0       0       0       0       0       0       0       0
154             UI       0       0       0       0       0       0       0       0       0       0
155             UI       0       0       0       0       0       0       0       0       0       0
156             UI       0       0       0       0       0       0       0       0       0       0
157             UI       0       0       0       0       0       0       0       0       0       0
158             UI       0       0       0       0       0       0       0       0       0       0
                *

159             KK  CPB1B2
160             KM    Combine hydrograph from 511B1 and 511B2
161             HC      2
                *

162             KK  RT12B4   ROUTE   REACH
163             KM   Normal depth channel route from CPB1B2 to 511B4
164             RS       3    FLOW      -1
165             RC   0.070   0.040   0.070    3973  0.0186 2582.00
166             RX     0.0    36.4    62.6    86.9    98.0   114.8   303.0   378.7
167             RY  2582.0  2578.0  2576.0  2574.0  2573.4  2574.0  2578.0  2582.0
                *

168             KK   511B3   BASIN
169             KM   Sub-Basin   511B3
170             KM
171             KM      The Phoenix Mountain S-Graph is used for this basin.
172             KM
173             BA   0.080
174             LG    0.10    0.37    6.60    0.12      15
175             UI      17      22      56      91     120     137     187     144     107      93
176             UI      84      74      62      53      43      39      36      27      21      21
177             UI      18      14      13      11       8       9       8       5       3       4
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 178          UI       3       3       3       3       4       3       0       0       0       0
 179          UI       0       0       0       0       0       0       0       0       0       0
 180          UI       0       0       0       0       0       0       0       0       0       0
 181          UI       0       0       0       0       0       0       0       0       0       0
 182          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

 183          UI       0       0       0       0       0       0       0       0       0       0
 184          UI       0       0       0       0       0       0       0       0       0       0
 185          UI       0       0       0       0       0       0       0       0       0       0
 186          UI       0       0       0       0       0       0       0       0       0       0
 187          UI       0       0       0       0       0       0       0       0       0       0
 188          UI       0       0       0       0       0       0       0       0       0       0
 189          UI       0       0       0       0       0       0       0       0       0       0
              *

 190          KK  RTB3B4   ROUTE   REACH
 191          KM   Normal depth channel route from 511B3 to 511B4
 192          RS       2    FLOW      -1
 193          RC   0.070   0.040   0.070    3126  0.0205 2565.00
 194          RX     0.0    16.6    28.0    34.2    39.7    63.8   108.6   198.6
 195          RY  2563.0  2562.0  2560.8  2560.3  2560.6  2562.0  2564.3  2565.0
              *

 196          KK   CP11B
 197          KM     Combine routed hydrographs from CPB1B2 and 511B3 with 511B4
 198          HC       3
              *

 199          KK   RTB4D   ROUTE   REACH
 200          KM   Normal depth channel route from CP11B to RTB4D
 201          RS       1    FLOW      -1
 202          RC   0.070   0.040   0.070     521  0.0179 2536.00
 203          RX     0.0    89.0   118.0   165.0   222.0   363.0   411.0   516.0
 204          RY  2536.0  2534.0  2532.0  2531.5  2532.0  2532.2  2532.8  2534.0
              *

 205          KK  CP11DF
 206          KM     Combine routed hydrographs from CP11D and RTB4D
 207          HC       2
              * ---------------------------------------------------------------------------
              *

 208          KK    RTDF   ROUTE   REACH
 209          KM   Normal depth channel route from CP11DF to CP11F                            R
 210          RS       3    FLOW      -1
 211          RC   0.070   0.040   0.070    3664  0.0191  151.20
 212          RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
 213          RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
              *

 214          KK    511F   BASIN
 215          KM   Sub-Basin   511F
 216          KM
 217          KM      The Phoenix Mountain S-Graph is used for this basin.
 218          KM
 219          BA   0.157
 220          LG    0.10    0.38    6.40    0.13      15
 221          UI      29      30      86     134     189     214     256     348     234     187
 222          UI     168     148     135     122      99      85      76      68      61      51
 223          UI      40      37      33      30      23      23      18      15      14      15
 224          UI      12       6       6       5       6       5       6       6       5       6
1                                          HEC-1 INPUT                                          PAGE  6

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

 225          UI       6       0       0       0       0       0       0       0       0       0
              *

 226          KK   CP11F
 227          KM     Combine routed hydrograph from CP11DF with runoff from 511F
 228          HC       2
              *

 229          KK   511C1   BASIN
 230          KM   Sub-Basin   511C1
 231          KM
 232          KM      The Phoenix Mountain S-Graph is used for this basin.
 233          KM
 234          BA   0.329
 235          LG    0.10    0.40    6.00    0.15      15
 236          UI      38      39      37      85     130     165     217     248     272     289
 237          UI     344     404     454     327     263     235     230     208     191     187
 238          UI     169     154     151     131     117     105      95      91      89      80
 239          UI      75      65      59      48      50      44      41      43      34      29
```

```
240        UI      30      29      27      19      18      19      19      18      19      14
241        UI       7       0       0       0       0       0       0       0       0       0
242        UI       0       0       0       0       0       0       0       0       0       0
243        UI       0       0       0       0       0       0       0       0       0       0
244        UI       0       0       0       0       0       0       0       0       0       0
245        UI       0       0       0       0       0       0       0       0       0       0
246        UI       0       0       0       0       0       0       0       0       0       0
247        UI       0       0       0       0       0       0       0       0       0       0
248        UI       0       0       0       0       0       0       0       0       0       0
           *

249        KK  DIC1E2
250        KM   DIVERT FLOW FROM 511C1 TO 511C4 AT NATURAL FLOW SPLIT
251        DT  DIC1C4
252        DI       0      75     150     225     300     480     650
253        DQ       0      38      77     117     155     250     340
           *

254        KK  RTC1E2   ROUTE   REACH
255        KM   Normal depth channel route from 511C1 to 511E2
256        RS       5    FLOW      -1
257        RC   0.070   0.040   0.070    7085  0.0209 2506.00
258        RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
259        RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
           *

260        KK   511E1   BASIN
261        KM   Sub-Basin   511E1
262        KM
263        KM      The Phoenix Mountain S-Graph is used for this basin.
264        KM
265        BA   0.296
266        LG    0.10    0.40    6.00    0.15      15
267        UI      35      37      35      86     126     163     213     237     263     277
268        UI     341     408     371     273     235     211     202     186     172     168
269        UI     147     136     129     110      98      92      85      80      77      69
```



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

270        UI      57      54      46      45      41      39      38      29      27      27
271        UI      28      20      17      18      18      17      18      16       7       7
272        UI       6       0       0       0       0       0       0       0       0       0
273        UI       0       0       0       0       0       0       0       0       0       0
274        UI       0       0       0       0       0       0       0       0       0       0
275        UI       0       0       0       0       0       0       0       0       0       0
276        UI       0       0       0       0       0       0       0       0       0       0
277        UI       0       0       0       0       0       0       0       0       0       0
278        UI       0       0       0       0       0       0       0       0       0       0
279        UI       0       0       0       0       0       0       0       0       0       0
           *

280        KK  RTE1E2   ROUTE   REACH
281        KM   Normal depth channel route from 511E1 to 511E2
282        RS       3    FLOW      -1
283        RC   0.070   0.040   0.070    4907  0.0187 2506.00
284        RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
285        RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
           *

286        KK   511E2   BASIN
287        KM   Sub-Basin   511E2
288        KM
289        KM      The Phoenix Mountain S-Graph is used for this basin.
290        KM
291        BA   0.276
292        LG    0.10    0.36    6.80    0.11      15
293        UI      31      31      31      62     102     128     166     197     214     229
294        UI     264     298     371     319     229     201     189     175     164     157
295        UI     143     134     130     115     102      98      82      76      76      70
296        UI      65      64      50      50      40      39      37      35      34      31
297        UI      24      24      23      24      17      15      15      15      15      16
298        UI      14       0       0       0       0       0       0       0       0       0
299        UI       0       0       0       0       0       0       0       0       0       0
300        UI       0       0       0       0       0       0       0       0       0       0
301        UI       0       0       0       0       0       0       0       0       0       0
302        UI       0       0       0       0       0       0       0       0       0       0
303        UI       0       0       0       0       0       0       0       0       0       0
304        UI       0       0       0       0       0       0       0       0       0       0
305        UI       0       0       0       0       0       0       0       0       0       0
           *

306        KK  CPE1E2
307        KM     Combine routed hydrographs from 511E1 with 511E2
308        HC       2
           *
```

```
 309          KK   511C4   BASIN
 310          KM   Sub-Basin   511C4
 311          KM
 312          KM      The Phoenix Mountain S-Graph is used for this basin.
 313          KM
 314          BA   0.020
 315          LG    0.10    0.40    6.00    0.15      15
 316          UI       8      28      51      76      55      40      32      25      17      14
1                                              HEC-1 INPUT                                          PAGE  8

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

 317          UI      10       8       6       4       4       2       1       2       1       2
 318          UI       0       0       0       0       0       0       0       0       0       0
 319          UI       0       0       0       0       0       0       0       0       0       0
 320          UI       0       0       0       0       0       0       0       0       0       0
 321          UI       0       0       0       0       0       0       0       0       0       0
 322          UI       0       0       0       0       0       0       0       0       0       0
 323          UI       0       0       0       0       0       0       0       0       0       0
 324          UI       0       0       0       0       0       0       0       0       0       0
 325          UI       0       0       0       0       0       0       0       0       0       0
 326          UI       0       0       0       0       0       0       0       0       0       0
 327          UI       0       0       0       0       0       0       0       0       0       0
 328          UI       0       0       0       0       0       0       0       0       0       0
              *

 329          KK  DRC1C4
 330          KM        RETURN DIVERT FROM 511C1
 331          DR  DIC1C4
              *

 332          KK  RTC1C4   ROUTE   REACH
 333          KM   Normal depth channel route from 511C1 to 511C4
 334          RS       1    FLOW      -1
 335          RC   0.070   0.040   0.070    1058  0.0170 2605.30
 336          RX     0.0   104.0   140.0   187.0   243.0   273.0   302.0   324.0
 337          RY  2599.4  2599.6  2598.4  2598.3  2600.0  2602.0  2604.0  2605.3
              *

 338          KK  CP11C4
 339          KM     Combine routed hydrographs from 511C1 with 511C4
 340          HC       2
              *

 341          KK  DIC4E2
 342          KM   DIVERT FLOW FROM 511C4 TO 511C5 AT NATURAL FLOW SPLIT
 343          DT  DIC4C5
 344          DI       0      25     100     150     300     400     500
 345          DQ       0      20      73     106     203     264     325
              *

 346          KK  RTC4E2   ROUTE   REACH
 347          KM   Normal depth channel route from 511C4 to 511E2
 348          RS       4    FLOW      -1
 349          RC   0.070   0.040   0.070    6075  0.0214 2506.00
 350          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
 351          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
              *

 352          KK  CP11E2
 353          KM     Combine routed hydrographs from CPE1E2, RTC1E2,RTC4E2
 354          HC       3
              *
1                                              HEC-1 INPUT                                          PAGE  9

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

 355          KK   511C5   BASIN
 356          KM   Sub-Basin   511C5
 357          KM
 358          KM      The Phoenix Mountain S-Graph is used for this basin.
 359          KM
 360          BA   0.110
 361          LG    0.10    0.35    7.00    0.10      15
 362          UI      22      25      68     110     144     167     210     239     152     129
 363          UI     117     105      88      80      65      55      51      46      36      30
 364          UI      26      24      21      16      17      11      11      10      11       5
 365          UI       4       4       5       4       4       4       4       5       4       0
 366          UI       0       0       0       0       0       0       0       0       0       0
 367          UI       0       0       0       0       0       0       0       0       0       0
 368          UI       0       0       0       0       0       0       0       0       0       0
 369          UI       0       0       0       0       0       0       0       0       0       0
 370          UI       0       0       0       0       0       0       0       0       0       0
 371          UI       0       0       0       0       0       0       0       0       0       0
 372          UI       0       0       0       0       0       0       0       0       0       0
 373          UI       0       0       0       0       0       0       0       0       0       0
```

```
374          UI       0       0       0       0       0       0       0       0       0       0
             *

375          KK  DRC4C5
376          KM        RETURN DIVERT FROM 511C4
377          DR  DIC4C5
             *

378          KK  RTC4C5   ROUTE   REACH
379          KM   Normal depth channel route from 511C4 to 511C5
380          RS       2    FLOW      -1
381          RC   0.070   0.040   0.070    3182  0.0236 2532.20
382          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
383          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
             *

384          KK   511C3   BASIN
385          KM   Sub-Basin   511C3
386          KM
387          KM      The Phoenix Mountain S-Graph is used for this basin.
388          KM
389          BA   0.141
390          LG    0.10    0.40    6.00    0.15      15
391          UI      24      24      55      93     137     158     182     224     280     188
392          UI     155     133     125     116     100      90      79      66      57      57
393          UI      49      41      37      29      28      26      22      19      18      15
394          UI      11      12      11      12       6       4       5       4       5       5
395          UI       4       5       4       5       5       4       0       0       0       0
396          UI       0       0       0       0       0       0       0       0       0       0
397          UI       0       0       0       0       0       0       0       0       0       0
398          UI       0       0       0       0       0       0       0       0       0       0
399          UI       0       0       0       0       0       0       0       0       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
402          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

403          UI       0       0       0       0       0       0       0       0       0       0
             *

404          KK  RTC3C5   ROUTE   REACH
405          KM   Normal depth channel route from 511C3 to 511C5
406          RS       2    FLOW      -1
407          RC   0.070   0.040   0.070    3234  0.0232 2532.20
408          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
409          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
             *

410          KK   511C2   BASIN
411          KM   Sub-Basin   511C2
412          KM
413          KM      The Phoenix Mountain S-Graph is used for this basin.
414          KM
415          BA   0.392
416          LG    0.10    0.40    6.00    0.15      15
417          UI      39      41      40      53     117     147     184     239     253     280
418          UI     305     329     379     463     458     324     279     252     234     230
419          UI     211     197     191     173     164     158     138     126     118     104
420          UI      96      97      91      85      85      65      65      57      51      50
421          UI      47      43      43      41      31      30      31      31      27      20
422          UI      19       0       0       0       0       0       0       0       0       0
423          UI       0       0       0       0       0       0       0       0       0       0
424          UI       0       0       0       0       0       0       0       0       0       0
425          UI       0       0       0       0       0       0       0       0       0       0
426          UI       0       0       0       0       0       0       0       0       0       0
427          UI       0       0       0       0       0       0       0       0       0       0
428          UI       0       0       0       0       0       0       0       0       0       0
429          UI       0       0       0       0       0       0       0       0       0       0
             *

430          KK  DIC2C5
431          KM   DIVERT FLOW FROM 511C2 TO 509A2 AT NATURAL FLOW SPLIT
432          DT  DIC2A2
433          DI       0      25      70     150     300     400     500
434          DQ       0       7    22.5      51     111     152     197
             *

435          KK  RTC2C5   ROUTE   REACH
436          KM   Normal depth channel route from 511C2 to 511C5
437          RS       2    FLOW      -1
438          RC   0.070   0.040   0.070    3086  0.0230 2554.50
439          RX     0.0     9.3    49.5   114.2   122.3   140.1   149.6   197.3
440          RY  2554.5  2554.0  2552.2  2552.0  2551.8  2551.6  2552.0  2553.8
             *
```

```
441          KK  CP11C5
442          KM     Combine routed hydrographs from 511C5, RTC4C5, RTC3C5, RTC2C5
443          HC       4
             *
1                                          HEC-1 INPUT                                                    PAGE 11

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

444          KK  DIC5E2
445          KM   DIVERT FLOW FROM 511C5 TO 511C6 AT NATURAL FLOW SPLIT
446          DT  DIC5C6
447          DI       0     100     150     200     250     300     350     400     450     500
448          DI     550     600     650     700     750
449          DQ       0      60      97     136     174     218     257     290     332     375
450          DQ     418     455     369     401     421
             *

451          KK  RTC5E2   ROUTE   REACH
452          KM   Normal depth channel route from 511C5 to 511E2
453          RS       2    FLOW      -1
454          RC   0.070   0.040   0.070    2668  0.0217 2506.00
455          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
456          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

457          KK  CP11EF
458          KM     Combine hydrographs CP11E2 and RTC5E2
459          HC       2
             *

460          KK    CPEF
461          KM     Combine hydrographs from CP11EF and CP11F2
462          HC       2
             *

463          KK  RTEFC8   ROUTE   REACH
464          KM   Normal depth channel route from CPEF to CP11C8
465          RS       1    FLOW      -1
466          RC   0.070   0.040   0.070    1278  0.0141 2454.00
467          RX     0.0    86.0    91.9   125.2   207.6   319.0   482.9   605.1
468          RY  2454.0  2448.0  2447.0  2447.0  2448.0  2450.0  2451.0  2452.0
             *

469          KK   511C8   BASIN
470          KM   Sub-Basin   5118
471          KM
472          KM      The Phoenix Mountain S-Graph is used for this basin.
473          KM
474          BA   0.041
475          LG    0.10    0.37    5.20    0.21      15
476          UI      14      44      85     116     138      84      69      56      42      33
477          UI      27      18      16      12      10       6       7       3       3       3
478          UI       2       3       3       0       0       0       0       0       0       0
479          UI       0       0       0       0       0       0       0       0       0       0
480          UI       0       0       0       0       0       0       0       0       0       0
481          UI       0       0       0       0       0       0       0       0       0       0
482          UI       0       0       0       0       0       0       0       0       0       0
483          UI       0       0       0       0       0       0       0       0       0       0
484          UI       0       0       0       0       0       0       0       0       0       0
485          UI       0       0       0       0       0       0       0       0       0       0
486          UI       0       0       0       0       0       0       0       0       0       0
487          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

488          UI       0       0       0       0       0       0       0       0       0       0
489          UI       0       0       0       0       0       0       0       0       0       0
490          UI       0       0       0       0       0       0       0       0       0       0
491          UI       0       0       0       0       0       0       0       0       0       0
             *

492          KK  CP11C8
493          KM     Combine routed hydrograph from CPEF with 511C8
494          HC       2
             *

495          KK  RTC8C7   ROUTE   REACH
496          KM   Normal depth channel route from CP11C8 to 511C7
497          RS       1    FLOW      -1
498          RC   0.070   0.040   0.070     547  0.0146 2460.00
499          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
500          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

501          KK   511C7   BASIN
```

```
502          KM   Sub-Basin   511C7
503          KM
504          KM      The Phoenix Mountain S-Graph is used for this basin.
505          KM
506          BA   0.121
507          LG    0.10    0.39    6.20    0.14      17
508          UI      18      19      35      63      93     116     133     151     181     216
509          UI     146     121     107     100      91      82      76      66      58      50
510          UI      46      42      40      32      29      24      23      20      21      15
511          UI      14      15      11       9       9       9       9       7       4       3
512          UI       4       4       3       4       3       4       3       4       3       4
513          UI       0       0       0       0       0       0       0       0       0       0
514          UI       0       0       0       0       0       0       0       0       0       0
515          UI       0       0       0       0       0       0       0       0       0       0
516          UI       0       0       0       0       0       0       0       0       0       0
517          UI       0       0       0       0       0       0       0       0       0       0
518          UI       0       0       0       0       0       0       0       0       0       0
519          UI       0       0       0       0       0       0       0       0       0       0
520          UI       0       0       0       0       0       0       0       0       0       0
521          UI       0       0       0       0       0       0       0       0       0       0
522          UI       0       0       0       0       0       0       0       0       0       0
523          UI       0       0       0       0       0       0       0       0       0       0
             *

524          KK   511C6   BASIN
525          KM   Sub-Basin   511C6
526          KM
527          KM      The Phoenix Mountain S-Graph is used for this basin.
528          KM
529          BA   0.035
530          LG    0.10    0.35    7.00    0.10      15
531          UI       9      14      34      51      66      87      78      52      47      38
532          UI      35      29      21      21      16      14      10      10       8       6
533          UI       6       4       4       4       2       1       2       2       1       2
534          UI       2       1       0       0       0       0       0       0       0       0
```



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

535          UI       0       0       0       0       0       0       0       0       0       0
536          UI       0       0       0       0       0       0       0       0       0       0
537          UI       0       0       0       0       0       0       0       0       0       0
538          UI       0       0       0       0       0       0       0       0       0       0
539          UI       0       0       0       0       0       0       0       0       0       0
540          UI       0       0       0       0       0       0       0       0       0       0
541          UI       0       0       0       0       0       0       0       0       0       0
542          UI       0       0       0       0       0       0       0       0       0       0
543          UI       0       0       0       0       0       0       0       0       0       0
544          UI       0       0       0       0       0       0       0       0       0       0
545          UI       0       0       0       0       0       0       0       0       0       0
546          UI       0       0       0       0       0       0       0       0       0       0
             *

547          KK  DRC5C6
548          KM        RETURN DIVERT FROM 511C5
549          DR  DIC5C6
             *

550          KK  RTC5C6   ROUTE   REACH
551          KM   Normal depth channel route from 511C5 to 511C6
552          RS       2    FLOW      -1
553          RC   0.070   0.040   0.070    2644  0.0155 2490.80
554          RX     0.0    68.8   177.6   245.2   257.0   350.0   363.8   398.6
555          RY  2490.0  2489.3  2488.8  2490.0  2489.0  2489.0  2490.0  2490.8
             *

556          KK  CP11C6
557          KM     Combine routed hydrograph from 511C6 and RTC5C6
558          HC       2
             *
             *

559          KK  RTC6C7   ROUTE   REACH
560          KM   Normal depth channel route from 511C6 to 511C7
561          RS       1    FLOW      -1
562          RC   0.070   0.040   0.070    1801  0.0233 2450.10
563          RX     0.0    73.0    80.0    90.0    93.0    96.0   103.0   162.0
564          RY  2450.1  2448.0  2446.0  2444.0  2443.7  2444.0  2446.0  2448.0
             *

565          KK  CP11C7
566          KM     Combine routed hydrograph from CP11C8, 511C7, RTC6C7
567          HC       3
             *

568          KK   RTC7H   ROUTE   REACH
569          KM   Normal depth channel route from 511C7 to 511H
```

```
570          RS        4    FLOW      -1
571          RC    0.070   0.040   0.070    6348  0.0176 2460.00
572          RX    950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
573          RY   2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
574          RL                     0.62  2356.3
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


575          KK    511H   BASIN
576          KM   Sub-Basin   511H
577          KM
578          KM      The Phoenix Mountain S-Graph is used for this basin.
579          KM
580          BA   0.303
581          LG    0.10    0.35    4.40    0.32      15
582          UI      37      38      38      99     140     189     229     261     285     307
583          UI     397     444     327     273     228     221     206     186     176     166
584          UI     146     136     125     105      95      91      87      80      74      61
585          UI      55      50      47      41      42      38      29      29      29      27
586          UI      19      18      19      19      18      19       9       7       7       8
587          UI       7       0       0       0       0       0       0       0       0       0
588          UI       0       0       0       0       0       0       0       0       0       0
589          UI       0       0       0       0       0       0       0       0       0       0
590          UI       0       0       0       0       0       0       0       0       0       0
591          UI       0       0       0       0       0       0       0       0       0       0
592          UI       0       0       0       0       0       0       0       0       0       0
593          UI       0       0       0       0       0       0       0       0       0       0
594          UI       0       0       0       0       0       0       0       0       0       0
595          UI       0       0       0       0       0       0       0       0       0       0
596          UI       0       0       0       0       0       0       0       0       0       0
597          UI       0       0       0       0       0       0       0       0       0       0
             *

598          KK   CP11H
599          KM     Combine routed hydrographs from RTC7H with 511H
600          HC       2
             *

601          KK   RTHG4   ROUTE   REACH
602          KM   Normal depth channel route from CPC7H TO 511G4
603          RS       1    FLOW      -1
604          RC   0.070   0.040   0.070     933  0.0209 2336.00
605          RX     0.0    44.0    71.0    80.0    90.0   101.0   143.0   154.0
606          RY  2336.0  2330.0  2324.0  2323.3  2324.0  2330.0  2334.0  2335.0
             *

607          KK   511G1   BASIN
608          KM   Sub-Basin   511G1
609          KM
610          KM      The Phoenix Mountain S-Graph is used for this basin.
611          KM
612          BA   0.310
613          LG    0.10    0.38    5.60    0.18      23
614          UI      57      60     170     263     374     423     505     686     463     370
615          UI     332     292     266     240     196     169     149     134     121     100
616          UI      80      73      65      60      44      46      37      28      29      28
617          UI      24      12      11      11      11      11      11      11      11      11
618          UI      12       0       0       0       0       0       0       0       0       0
619          UI       0       0       0       0       0       0       0       0       0       0
620          UI       0       0       0       0       0       0       0       0       0       0
621          UI       0       0       0       0       0       0       0       0       0       0
622          UI       0       0       0       0       0       0       0       0       0       0
1                                        HEC-1 INPUT                                                    PAGE 15

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

623          UI       0       0       0       0       0       0       0       0       0       0
             *

624          KK  RTG1G2   ROUTE   REACH
625          KM   Normal depth channel route from 511G1 to 511G2
626          RS       3    FLOW      -1
627          RC   0.070   0.040   0.070    4246  0.0146 2472.00
628          RX    19.0    45.0    98.0   182.0   219.0   234.0   270.0   308.0
629          RY  2472.0  2470.0  2468.0  2466.0  2465.5  2466.0  2468.0  2472.0
             *

630          KK   511G2   BASIN
631          KM   Sub-Basin   511G2
632          KM
633          KM      The Phoenix Mountain S-Graph is used for this basin.
634          KM
635          BA   0.157
636          LG    0.10    0.37    5.30    0.20      15
```

```
637          UI      25      25      52      91     139     160     188     218     277     251
638          UI     178     154     137     130     116     102      96      81      66      63
639          UI      58      54      45      39      31      31      27      26      20      19
640          UI      19      13      12      12      13      11       5       5       5       5
641          UI       5       4       5       5       5       5       5       5       0       0
642          UI       0       0       0       0       0       0       0       0       0       0
643          UI       0       0       0       0       0       0       0       0       0       0
644          UI       0       0       0       0       0       0       0       0       0       0
645          UI       0       0       0       0       0       0       0       0       0       0
646          UI       0       0       0       0       0       0       0       0       0       0
             *

647          KK  CP11G2
648          KM     Combine routed hydrographs from 511G1, 511G2 and CPC7H
649          HC       2
             *

650          KK  RTG2G4   ROUTE   REACH
651          RS       4    FLOW      -1
652          RC   0.070   0.040   0.070    5908  0.0190 2472.00
653          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
654          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

655          KK   511G3   BASIN
656          KM   Sub-Basin   511G3
657          KM
658          KM      The Phoenix Mountain S-Graph is used for this basin.
659          KM
660          BA   0.097
661          LG    0.10    0.36    5.00    0.23      15
662          UI      16      17      38      64      93     110     125     154     193     129
663          UI     107      92      85      80      69      62      54      45      39      40
664          UI      34      28      25      21      19      18      14      13      13      10
665          UI       8       8       8       7       5       3       3       3       3       3
666          UI       4       3       3       3       3       3       0       0       0       0
667          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 16

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

668          UI       0       0       0       0       0       0       0       0       0       0
669          UI       0       0       0       0       0       0       0       0       0       0
670          UI       0       0       0       0       0       0       0       0       0       0
671          UI       0       0       0       0       0       0       0       0       0       0
             *

672          KK  RTG3G4   ROUTE   REACH
673          KM   Normal depth channel route from 511G3 to 511G4
674          RS       4    FLOW      -1
675          RC   0.070   0.040   0.070    5322  0.0231 2380.30
676          RX    34.0    65.0    84.0    98.0   105.0   131.0   166.0   173.0
677          RY  2380.0  2378.0  2376.0  2374.0  2376.0  2378.0  2380.0  2380.3
             *

678          KK   511G4   BASIN
679          KM   Sub-Basin   511G4
680          KM
681          KM      The Phoenix Mountain S-Graph is used for this basin.
682          KM
683          BA   0.298
684          LG    0.10    0.35    4.65    0.27      15
685          UI      36      38      37      97     138     186     225     256     281     302
686          UI     392     435     321     270     224     218     202     183     172     163
687          UI     145     133     123     103      94      90      85      79      73      60
688          UI      54      49      46      40      42      37      28      29      28      27
689          UI      18      19      18      18      19      18       9       7       7       7
690          UI       7       0       0       0       0       0       0       0       0       0
691          UI       0       0       0       0       0       0       0       0       0       0
692          UI       0       0       0       0       0       0       0       0       0       0
693          UI       0       0       0       0       0       0       0       0       0       0
694          UI       0       0       0       0       0       0       0       0       0       0
             *

695          KK  CPG_G4
696          KM     Combine routed hydrographs from RTG2G4, RTG3G4 and 511G4
697          HC       3
             *

698          KK  CP11G4
699          KM     Combine routed hydrographs from RTHG4 and CPG_G4
700          HC       2
             *

701          KK   RTG4I   ROUTE   REACH
702          RS       3    FLOW      -1
703          RC   0.070   0.040   0.070    4438  0.0361 2460.00
```

```
 704          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
 705          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
              *
1                                        HEC-1 INPUT                                                    PAGE 17

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


 706          KK    511I   BASIN
 707          KM   Sub-Basin   511I
 708          KM
 709          KM      The Phoenix Mountain S-Graph is used for this basin.
 710          KM
 711          BA   0.198
 712          LG    0.10    0.35    4.10    0.38      15
 713          UI      30      31      57     102     153     189     219     246     298     352
 714          UI     240     197     175     164     149     134     125     107      96      81
 715          UI      75      69      65      53      48      39      38      33      33      25
 716          UI      23      24      18      15      15      15      15      11       6       6
 717          UI       6       5       6       6       5       6       6       6       5       6
 718          UI       0       0       0       0       0       0       0       0       0       0
 719          UI       0       0       0       0       0       0       0       0       0       0
              *

 720          KK   CP11I
 721          KM     Combine routed hydrograph from RTG2I with runoff from 511I
 722          KO                                      21
 723          HC       2
              *
              *
              * ******************************************************************************
              * ******************************      Major Basin 510     ************************
              * ******************************************************************************
              *

 724          KK    510A   BASIN
 725          KM   Sub-Basin   510A
 726          KM
 727          KM      The Phoenix Mountain S-Graph is used for this basin.
 728          KM
 729          BA   0.923
 730          KO                                      21
 731          LG    0.10    0.39    6.20    0.14      15
 732          UI      65      68      65      66      67     140     187     239     267     312
 733          UI     394     402     428     473     490     501     567     592     686     781
 734          UI     799     598     519     454     425     410     391     368     367     345
 735          UI     328     319     303     288     281     261     251     242     224     203
 736          UI     196     172     168     166     160     150     154     140     137     136
 737          UI     108       0       0       0       0       0       0       0       0       0
 738          UI       0       0       0       0       0       0       0       0       0       0
 739          UI       0       0       0       0       0       0       0       0       0       0
 740          UI       0       0       0       0       0       0       0       0       0       0
 741          UI       0       0       0       0       0       0       0       0       0       0
 742          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
              * ******************************************************************************
              * ******************************      Major Basin 509     ************************
              * ******************************************************************************
              *
1                                        HEC-1 INPUT                                                    PAGE 18

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


 743          KK   509A5   BASIN
 744          KM   Sub-Basin   509A5
 745          KM
 746          KM      The Phoenix Mountain S-Graph is used for this basin.
 747          KM
 748          BA   0.020
 749          LG    0.10    0.36    5.10    0.22      15
 750          UI       7      21      42      57      67      40      34      27      21      16
 751          UI      13       9       8       6       5       3       3       1       2       1
 752          UI       1       2       1       0       0       0       0       0       0       0
 753          UI       0       0       0       0       0       0       0       0       0       0
 754          UI       0       0       0       0       0       0       0       0       0       0
 755          UI       0       0       0       0       0       0       0       0       0       0
 756          UI       0       0       0       0       0       0       0       0       0       0
 757          UI       0       0       0       0       0       0       0       0       0       0
 758          UI       0       0       0       0       0       0       0       0       0       0
 759          UI       0       0       0       0       0       0       0       0       0       0
 760          UI       0       0       0       0       0       0       0       0       0       0
 761          UI       0       0       0       0       0       0       0       0       0       0
              *

 762          KK  DIA59B
```

```
763          KM   DIVERT FLOW FROM 509A5 TO 509A6 BY NATURAL FLOW SPLIT
764          DT   DIA5S
765          DI       0      75     150     225     308     480     650
766          DQ       0       2      15      30      50      95     140
             *

767          KK  RTA59B   ROUTE   REACH
768          KM   Normal depth channel route from 509A5 to 509B
769          RS      13    FLOW      -1
770          RC   0.070   0.040   0.070   18484  0.0233 2188.00
771          RX     0.0    61.0   150.0   160.0   164.0   174.0   266.0   290.0
772          RY  2184.6  2184.0  2182.0  2180.0  2179.8  2180.0  2186.0  2188.0
             *

773          KK    509B   BASIN
774          KM   Sub-Basin   509B
775          KM
776          KM      The Phoenix Mountain S-Graph is used for this basin.
777          KM
778          BA   0.654
779          LG    0.10    0.36    5.10    0.22      15
780          UI      43      45      44      43      45      64     126     142     167     192
781          UI     232     257     271     301     307     324     352     360     394     455
782          UI     505     545     452     340     325     295     276     265     261     249
783          UI     235     231     220     209     207     191     184     183     169     162
784          UI     154     140     134     124     116     110     110     104     101     104
785          UI      93       0       0       0       0       0       0       0       0       0
786          UI       0       0       0       0       0       0       0       0       0       0
787          UI       0       0       0       0       0       0       0       0       0       0
788          UI       0       0       0       0       0       0       0       0       0       0
789          UI       0       0       0       0       0       0       0       0       0       0
790          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 19

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

791          UI       0       0       0       0       0       0       0       0       0       0
             * ---------------------------------------------------------------------------

792          KK   CP09B
793          KM     Combine hydrographs from 509B and RTA59B
794          KO                                      21
795          HC       2
             *

796          KK   509A1   BASIN
797          KM   Sub-Basin   509A1
798          KM
799          KM      The Phoenix Mountain S-Graph is used for this basin.
800          KM
801          BA   0.193
802          LG    0.10    0.38    6.40    0.13      15
803          UI      25      25      25      72     101     130     155     180     190     218
804          UI     280     281     186     164     148     137     130     121     109     102
805          UI      92      81      73      63      60      58      52      48      42      35
806          UI      32      31      27      27      23      19      19      20      14      12
807          UI      13      12      12      12       9       4       5       5       4       5
808          UI       5       0       0       0       0       0       0       0       0       0
809          UI       0       0       0       0       0       0       0       0       0       0
810          UI       0       0       0       0       0       0       0       0       0       0
811          UI       0       0       0       0       0       0       0       0       0       0
812          UI       0       0       0       0       0       0       0       0       0       0
813          UI       0       0       0       0       0       0       0       0       0       0
814          UI       0       0       0       0       0       0       0       0       0       0
             *

815          KK  RTA1A2   ROUTE   REACH
816          KM   Normal depth channel route from 509A1 to 509A2
817          RS       1    FLOW      -1
818          RC   0.070   0.040   0.070    1427  0.0234 2464.80
819          RX     0.0    33.0    66.0    86.0   114.0   120.0   135.0   177.0
820          RY  2464.0  2463.7  2463.2  2462.8  2463.2  2463.8  2464.0  2464.8
             *

821          KK   509A2   BASIN
822          KM   Sub-Basin   509A2
823          KM
824          KM      The Phoenix Mountain S-Graph is used for this basin.
825          KM
826          BA   0.128
827          LG    0.10    0.36    6.80    0.11      15
828          UI      18      18      26      56      78     104     119     139     147     187
829          UI     212     135     116     107      98      89      86      75      69      62
830          UI      53      47      45      40      38      34      29      23      24      20
831          UI      19      19      14      13      15      10       9       9       9       9
832          UI       9       3       4       3       3       4       3       4       3       4
833          UI       3       0       0       0       0       0       0       0       0       0
```

```
 834          UI       0       0       0       0       0       0       0       0       0       0
 835          UI       0       0       0       0       0       0       0       0       0       0
 836          UI       0       0       0       0       0       0       0       0       0       0
 837          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 20

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

 838          UI       0       0       0       0       0       0       0       0       0       0
 839          UI       0       0       0       0       0       0       0       0       0       0
              *

 840          KK  DRC2A2
 841          KM        RETURN DIVERT FROM 511C2
 842          DR  DIC2A2
              *

 843          KK  RTC2A2   ROUTE   REACH
 844          KM   Normal depth channel route from 511C2 to 509A2
 845          RS       4    FLOW      -1
 846          RC   0.070   0.040   0.070    6045  0.0218 2520.00
 847          RX     0.0   147.0   228.3   252.5   257.8   262.8   282.7   348.4
 848          RY  2502.0  2500.6  2500.0  2498.0  2497.6  2498.0  2500.0  2520.0
              *

 849          KK  CP09A2
 850          KM     Combine routed hydrograph from 511E4 with runoff from 509A2
 851          HC       3
              *

 852          KK  RTA2A4   ROUTE   REACH
 853          KM   Normal depth channel route from 509A2 to 509A3
 854          RS       2    FLOW      -1
 855          RC   0.070   0.040   0.070    2604  0.0384 2426.00
 856          RX     0.0   103.0   187.0   344.0   439.0   505.0   563.0   596.0
 857          RY  2422.0  2418.0  2417.4  2417.3  2418.0  2416.4  2422.0  2426.0
              *

 858          KK   509A3   BASIN
 859          KM   Sub-Basin   509A3
 860          KM
 861          KM      The Phoenix Mountain S-Graph is used for this basin.
 862          KM
 863          BA   0.162
 864          LG    0.10    0.38    6.40    0.13      15
 865          UI      27      28      63     107     156     184     209     257     322     215
 866          UI     178     154     142     134     115     104      90      76      65      65
 867          UI      57      48      41      35      31      31      25      21      21      17
 868          UI      13      14      13      13       7       5       5       6       5       5
 869          UI       5       5       5       6       5       5       0       0       0       0
 870          UI       0       0       0       0       0       0       0       0       0       0
 871          UI       0       0       0       0       0       0       0       0       0       0
 872          UI       0       0       0       0       0       0       0       0       0       0
 873          UI       0       0       0       0       0       0       0       0       0       0
 874          UI       0       0       0       0       0       0       0       0       0       0
 875          UI       0       0       0       0       0       0       0       0       0       0
 876          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 21

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

 877          KK  RTA3A4   ROUTE   REACH
 878          KM   Normal depth channel route from 509A3 to 509A4
 879          RS       1    FLOW      -1
 880          RC   0.070   0.040   0.070     717  0.0167 2406.00
 881          RX     0.0    69.0   124.0   175.0   252.0   303.0   342.0   363.0
 882          RY  2404.8  2404.0  2403.5  2402.8  2403.6  2403.0  2404.0  2406.0
              *

 883          KK   509A4   BASIN
 884          KM   Sub-Basin   509A4
 885          KM
 886          KM      The Phoenix Mountain S-Graph is used for this basin.
 887          KM
 888          BA   0.062
 889          LG    0.10    0.36    6.80    0.11      15
 890          UI      17      41      86     124     170     162     108      92      76      63
 891          UI      50      41      34      26      21      18      14      12       8       9
 892          UI       6       3       3       4       3       3       4       0       0       0
 893          UI       0       0       0       0       0       0       0       0       0       0
 894          UI       0       0       0       0       0       0       0       0       0       0
 895          UI       0       0       0       0       0       0       0       0       0       0
 896          UI       0       0       0       0       0       0       0       0       0       0
 897          UI       0       0       0       0       0       0       0       0       0       0
 898          UI       0       0       0       0       0       0       0       0       0       0
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899          UI       0       0       0       0       0       0       0       0       0       0
900          UI       0       0       0       0       0       0       0       0       0       0
901          UI       0       0       0       0       0       0       0       0       0       0
             *

902          KK  CP09A4
903          KM     Combine hydrographs from 509A4, RTA2A4, RTA3A4
904          HC       3
             *
             * MODIFICATION STARTS
             *

905          KK  RTA4A6   ROUTE   REACH
906          KM   Normal depth channel route from CP509A4 to 509A6
907          RS       2    FLOW      -1
908          RC   0.070   0.040   0.070    1778  0.0185 2382.00
909          RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
910          RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
             *
             *

911          KK  DRA5A6
912          KM        RETURN DIVERT FROM 509A5
913          DR   DIA5S
             *
1                                        HEC-1 INPUT                                          PAGE 22

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

914          KK  RTA5A6   ROUTE   REACH
915          KM   Normal depth channel route from 509A5 to 509A6
916          RS       2    FLOW      -1
917          RC   0.070   0.040   0.070    1778  0.0185 2382.00
918          RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
919          RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
             *

920          KK   509A6   BASIN
921          KM   Sub-Basin   509A6
922          KM
923          KM      The Phoenix Mountain S-Graph is used for this basin.
924          KM
925          BA   0.032
926          KO                                   21
927          LG    0.10    0.32    7.60    0.08    15
928          UI      10      35      67      90   108      65      54      44      33      25
929          UI      22      14      12      10     7       5       6       2       2       2
930          UI       2       3       2       0     0       0       0       0       0       0
931          UI       0       0       0       0     0       0       0       0       0       0
932          UI       0       0       0       0     0       0       0       0       0       0
933          UI       0       0       0       0     0       0       0       0       0       0
934          UI       0       0       0       0     0       0       0       0       0       0
935          UI       0       0       0       0     0       0       0       0       0       0
936          UI       0       0       0       0     0       0       0       0       0       0
             *

937          KK  CP09A6
938          KM     Combine hydrographs from RTA4A6, RTA5A6, 509A6
939          HC       3
             *
             * END OF MODIFICATION
             *

940          KK    509D   BASIN
941          KM   Sub-Basin   509D
942          KM
943          KM      The Phoenix Mountain S-Graph is used for this basin.
944          KM
945          BA   0.382
946          KO                                   21
947          LG    0.10    0.40    6.00    0.15    15
948          UI      33      35      33      34    75     102     128     158     197     208
949          UI     232     244     263     292   323     379     423     290     249     225
950          UI     206     200     193     179   170     163     156     139     140     129
951          UI     118     112     101      89    88      81      79      80      71      70
952          UI      61      56      55      44    43      42      40      37      37      38
953          UI      29       0       0       0     0       0       0       0       0       0
954          UI       0       0       0       0     0       0       0       0       0       0
955          UI       0       0       0       0     0       0       0       0       0       0
956          UI       0       0       0       0     0       0       0       0       0       0
             *
             * ******************************************************************************
             * ******************************     Major Basin 500     ************************
             * ******************************************************************************
             *
1                                        HEC-1 INPUT                                          PAGE 23
```

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

 957          KK    500A   BASIN
 958          KM   Sub-Basin   500A
 959          KM
 960          KM      The Phoenix Mountain S-Graph is used for this basin.
 961          KM
 962          BA   0.204
 963          LG    0.10    0.37    5.20    0.21      15
 964          UI      32      33      68     118     180     208     244     284     360     326
 965          UI     231     201     179     168     150     133     125     105      86      82
 966          UI      75      69      58      50      42      40      35      34      25      25
 967          UI      25      16      16      16      17      15       6       6       6       7
 968          UI       6       6       6       7       6       6       7       6       0       0
 969          UI       0       0       0       0       0       0       0       0       0       0
              *

 970          KK    RTAB   ROUTE   REACH
 971          KM   Normal depth channel route from 500A to 500B
 972          RS       4    FLOW      -1
 973          RC   0.070   0.040   0.070    6187  0.0283 2261.00
 974          RX   822.0  1013.0  1035.0  1045.0  1049.0  1053.0  1076.0  1573.0
 975          RY  2261.0  2159.2  2158.9  2156.6  2156.8  2158.9  2159.0  2261.0
              *

 976          KK    500B   BASIN
 977          KM   Sub-Basin   500B
 978          KM
 979          KM      The Phoenix Mountain S-Graph is used for this basin.
 980          KM
 981          BA   0.192
 982          LG    0.10    0.37    5.30    0.20      15
 983          UI      21      21      20      38      66      83     105     131     140     151
 984          UI     169     189     226     256     168     145     133     120     116     110
 985          UI     102      95      89      83      75      71      63      54      52      49
 986          UI      47      46      42      34      34      27      26      27      23      22
 987          UI      24      16      16      16      16      14      10      10      11      10
 988          UI      10       0       0       0       0       0       0       0       0       0
 989          UI       0       0       0       0       0       0       0       0       0       0
 990          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 991          KK  CP500B
 992          KM     Combine routed hydrograph from 500A with runoff from 500B
 993          KO                                      21
 994          HC       2
              *
 995          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    15      511A1
              .
              .
    36        .       511A2
              .           V
              .           V
    51        .      RTA2A3
              .           .
              .           .
    57        .           .       511A3
              .           .           .
              .           .           .
    79      CP11A.......................
              V
              V
    82      RTA1D
              .
              .
    88        .        511D
              .           .
              .           .
   104      CP11D............
              .
              .
   107        .       511B4
              .           .
              .           .
   122        .           .       511B1
              .           .           .
```

```
137                                511B2
159                         CPB1B2............
                                 V
                                 V
162                         RT12B4
168                                511B3
                                     V
                                     V
190                                RTB3B4
196                   CP11B........................
                          V
                          V
199                   RTB4D
205            CP11DF............
                   V
                   V
208              RTDF
214                  511F
226             CP11F............
229                  511C1
251                  .-------> DIC1C4
249                DIC1E2
                       V
                       V
254                RTC1E2
260                       511E1
                                 V
                                 V
280                         RTE1E2
286                                511E2
306                         CPE1E2............
309                                511C4
331                                          .<-------  DIC1C4
329                                      DRC1C4
                                             V
                                             V
332                                      RTC1C4
338                                CP11C4............
343                                          .-------> DIC4C5
341                                DIC4E2
                                     V
                                     V
346                                RTC4E2
352                CP11E2........................
355                       511C5
377                                          .<-------  DIC4C5
375                                DRC4C5
                                     V
                                     V
378                                RTC4C5
```

```
                .          .          .          .
                .          .          .          .
384             .          .          .          .      511C3
                .          .          .          .          V
                .          .          .          .          V
404             .          .          .          .     RTC3C5
                .          .          .          .          .
                .          .          .          .          .
410             .          .          .          .          .       511C2
                .          .          .          .          .          .
                .          .          .          .          .          .
432             .          .          .          .          .          .-------> DIC2A2
430             .          .          .          .          .     DIC2C5
                .          .          .          .          .          V
                .          .          .          .          .          V
435             .          .          .          .          .     RTC2C5
                .          .          .          .          .          .
                .          .          .          .          .          .
441             .          .     CP11C5.................................
                .          .          .
                .          .          .
446             .          .          .-------> DIC5C6
444             .          .     DIC5E2
                .          .          V
                .          .          V
451             .          .     RTC5E2
                .          .          .
                .          .          .
457             .     CP11EF............
                .          .
                .          .
460        CPEF............
                V
                V
463       RTEFC8
                .
                .
469             .      511C8
                .          .
                .          .
492       CP11C8............
                V
                V
495       RTC8C7
                .
                .
501             .      511C7
                .          .
                .          .
524             .          .      511C6
                .          .          .
                .          .          .
549             .          .          .          .<-------  DIC5C6
547             .          .          .     DRC5C6
                .          .          .          V
                .          .          .          V
550             .          .          .     RTC5C6
                .          .          .          .
                .          .          .          .
556             .          .     CP11C6............
                .          .          V
                .          .          V
559             .          .     RTC6C7
                .          .          .
                .          .          .
565       CP11C7........................
                V
                V
568        RTC7H
                .
                .
575             .       511H
                .          .
                .          .
598        CP11H............
                V
                V
601        RTHG4
                .
                .
607             .      511G1
                .          V
                .          V
624             .     RTG1G2
                .          .
                .          .
630             .          .      511G2
```

```
                .          .          .
                .          .          .
647             .     CP11G2...........
                .          V
                .          V
650             .     RTG2G4
                .          .
                .          .
655             .          .      511G3
                .          .          V
                .          .          V
672             .          .     RTG3G4
                .          .          .
                .          .          .
678             .          .          .      511G4
                .          .          .          .
                .          .          .          .
695             .     CPG_G4......................
                .          .
                .          .
698       CP11G4...........
               V
               V
701        RTG4I
                .
                .
706             .       511I
                .          .
                .          .
720        CP11I...........
                .
                .
724             .       510A
                .          .
                .          .
743             .          .      509A5
                .          .          .
                .          .          .
764             .          .          .-------->   DIA5S
762             .          .     DIA59B
                .          .          V
                .          .          V
767             .          .     RTA59B
                .          .          .
                .          .          .
773             .          .          .       509B
                .          .          .          .
                .          .          .          .
792             .          .      CP09B...........
                .          .          .
                .          .          .
796             .          .          .      509A1
                .          .          .          V
                .          .          .          V
815             .          .          .     RTA1A2
                .          .          .          .
                .          .          .          .
821             .          .          .          .      509A2
                .          .          .          .          .
                .          .          .          .          .
842             .          .          .          .          .          .<-------  DIC2A2
840             .          .          .          .          .     DRC2A2
                .          .          .          .          .          V
                .          .          .          .          .          V
843             .          .          .          .          .     RTC2A2
                .          .          .          .          .          .
                .          .          .          .          .          .
849             .          .          .     CP09A2......................
                .          .          .          V
                .          .          .          V
852             .          .          .     RTA2A4
                .          .          .          .
                .          .          .          .
858             .          .          .          .      509A3
                .          .          .          .          V
                .          .          .          .          V
877             .          .          .          .     RTA3A4
                .          .          .          .          .
                .          .          .          .          .
883             .          .          .          .          .      509A4
                .          .          .          .          .          .
                .          .          .          .          .          .
902             .          .          .     CP09A4......................
                .          .          .          V
                .          .          .          V
905             .          .          .     RTA4A6
                .          .          .          .
```

```
                .          .          .          .
913             .          .          .          .          .<-------   DIA5S
911             .          .          .          .      DRA5A6
                .          .          .          .          V
                .          .          .          .          V
914             .          .          .          .      RTA5A6
                .          .          .          .          -
                .          .          .          .          -
920             .          .          .          .          .       509A6
                .          .          .          .          -           .
                .          .          .          .          .           .
937             .          .          .     CP09A6.......................
                .          .          .          .
                .          .          .          .
940             .          .          .          .       509D
                .          .          .          .          -
                .          .          .          .          .
957             .          .          .          .          .        500A
                .          .          .          .          .           V
                .          .          .          .          .           V
970             .          .          .          .          .        RTAB
                .          .          .          .          .           .
                .          .          .          .          .           .
976             .          .          .          .          .           .        500B
                .          .          .          .          .           .           -
                .          .          .          .          .           .           .
991             .          .          .          .          .     CP500B............
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
*                                       *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997               *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                 *                                    *          609 SECOND STREET           *
*                                       *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   30AUG06  TIME  13:22:51   *                                    *           (916) 756-1104             *
*                                       *                                    *                                      *
****************************************                                    ****************************************
```

```
Project ID: S_6FC - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_6FC.DAT
MODEL:      100-year, 6-hour Future Condition Model
DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003

*** Modified South Watershed Model: Subbasin Added: 509A6 ***
                                                       DATE REVISED: 5/06/05
*** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
*** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
                                                       LAST UPDATE:  8/30/06


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

   IT          HYDROGRAPH TIME DATA
                      NMIN          2  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       1200  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME       1558  ENDING TIME
                     ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL     .03 HOURS
                     TOTAL TIME BASE   39.97 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


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

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```
            *            *
720 KK      *     CP11I  *
            *            *
            **************

722 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS

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

            **************
            *            *
724 KK      *      510A  *        BASIN
            *            *
            **************

730 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS

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

            **************
            *            *
792 KK      *     CP09B  *
            *            *
            **************

794 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS

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

            **************
            *            *
920 KK      *     509A6  *        BASIN
            *            *
            **************

926 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS

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

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                 *************
                 *           *
940 KK           *    509D   *        BASIN
                 *           *
                 *************

946 KO              OUTPUT CONTROL VARIABLES
                          IPRNT          5  PRINT CONTROL
                          IPLOT          0  PLOT CONTROL
                          QSCAL         0.  HYDROGRAPH PLOT SCALE
                          IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                           IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT       .033  TIME INTERVAL IN HOURS


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


                 *************
                 *           *
991 KK           *   CP500B  *
                 *           *
                 *************

993 KO              OUTPUT CONTROL VARIABLES
                          IPRNT          5  PRINT CONTROL
                          IPLOT          0  PLOT CONTROL
                          QSCAL         0.  HYDROGRAPH PLOT SCALE
                          IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                           IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT       .033  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION     FLOW    PEAK                                          AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                         511A1      318.    4.23          57.         14.          9.       .29

        HYDROGRAPH AT
+                         511A2       78.    4.07          11.          3.          2.       .06

        ROUTED TO
+                        RTA2A3       67.    4.30          11.          3.          2.       .06
+                                                                                            2657.89        4.30

        HYDROGRAPH AT
+                         511A3      324.    4.23          58.         14.          9.       .29

        3 COMBINED AT
+                         CP11A      707.    4.23         126.         32.         19.       .65

        ROUTED TO
+                         RTA1D      661.    4.53         126.         32.         19.       .65
+                                                                                             100.24        4.53

        HYDROGRAPH AT
+                          511D      147.    4.17          25.          6.          4.       .12

        2 COMBINED AT
+                         CP11D      767.    4.47         152.         38.         23.       .77

        HYDROGRAPH AT
+                         511B4      256.    4.13          44.         11.          7.       .19

        HYDROGRAPH AT
+                         511B1      562.    4.40         115.         29.         17.       .58

        HYDROGRAPH AT
+                         511B2      233.    4.30          44.         11.          7.       .22

        2 COMBINED AT
+                        CPB1B2      790.    4.37         159.         40.         24.       .81

        ROUTED TO
+                        RT12B4      764.    4.53         159.         40.         24.       .81
```

```
+                                                                                                  2575.81        4.53

          HYDROGRAPH AT
+                          511B3      105.    4.10        16.        4.        2.       .08

          ROUTED TO
+                         RTB3B4       97.    4.27        16.        4.        2.       .08
+                                                                                                  2561.59        4.27

          3 COMBINED AT
+                          CP11B     1013.    4.47       219.       55.       33.      1.08

          ROUTED TO
+                          RTB4D     1012.    4.47       219.       55.       33.      1.08
+                                                                                                  2532.82        4.47

          2 COMBINED AT
+                         CP11DF     1779.    4.47       371.       93.       56.      1.85

          ROUTED TO
+                           RTDF     1764.    4.57       371.       93.       56.      1.85
+                                                                                                   101.92        4.57

          HYDROGRAPH AT
+                           511F      196.    4.13        32.        8.        5.       .16

          2 COMBINED AT
+                          CP11F     1869.    4.57       402.      101.       61.      2.00

          HYDROGRAPH AT
+                          511C1      336.    4.30        63.       16.        9.       .33

          DIVERSION TO
+                         DIC1C4      174.    4.30        32.        8.        5.       .33

          HYDROGRAPH AT
+                         DIC1E2      162.    4.30        30.        8.        5.       .33

          ROUTED TO
+                         RTC1E2      142.    4.77        30.        8.        5.       .33
+                                                                                                  2496.56        4.77

          HYDROGRAPH AT
+                          511E1      307.    4.27        56.       14.        8.       .30

          ROUTED TO
+                         RTE1E2      284.    4.53        56.       14.        8.       .30
+                                                                                                  2496.88        4.53

          HYDROGRAPH AT
+                          511E2      293.    4.30        57.       14.        9.       .28

          2 COMBINED AT
+                         CPE1E2      548.    4.43       113.       28.       17.       .57

          HYDROGRAPH AT
+                          511C4       29.    4.03         4.        1.        1.       .02

          HYDROGRAPH AT
+                         DRC1C4      174.    4.30        32.        8.        5.       .00

          ROUTED TO
+                         RTC1C4      172.    4.37        32.        8.        5.       .00
+                                                                                                  2599.09        4.37

          2 COMBINED AT
+                         CP11C4      188.    4.33        36.        9.        5.       .02

          DIVERSION TO
+                         DIC4C5      131.    4.33        26.        7.        4.       .02

          HYDROGRAPH AT
+                         DIC4E2       57.    4.33        10.        2.        1.       .02

          ROUTED TO
+                         RTC4E2       46.    4.83        10.        2.        1.       .02
+                                                                                                  2496.28        4.83

          3 COMBINED AT
+                         CP11E2      683.    4.57       153.       38.       23.       .92

          HYDROGRAPH AT
+                          511C5      145.    4.10        24.        6.        4.       .11

          HYDROGRAPH AT
+                         DRC4C5      131.    4.33        26.        7.        4.       .00
```

	ROUTED TO									
+		RTC4C5	127.	4.43	26.	7.	4.	.00		
+									2526.65	4.43
	HYDROGRAPH AT									
+		511C3	166.	4.17	27.	7.	4.	.14		
	ROUTED TO									
+		RTC3C5	160.	4.30	27.	7.	4.	.14		
+									2526.78	4.30
	HYDROGRAPH AT									
+		511C2	379.	4.37	73.	18.	11.	.39		
	DIVERSION TO									
+		DIC2A2	143.	4.37	26.	7.	4.	.39		
	HYDROGRAPH AT									
+		DIC2C5	235.	4.37	47.	12.	7.	.39		
	ROUTED TO									
+		RTC2C5	226.	4.50	47.	12.	7.	.39		
+									2552.57	4.50
	4 COMBINED AT									
+		CP11C5	604.	4.37	124.	31.	19.	.64		
	DIVERSION TO									
+		DIC5C6	454.	4.37	88.	22.	13.	.64		
	HYDROGRAPH AT									
+		DIC5E2	157.	4.37	35.	9.	5.	.64		
	ROUTED TO									
+		RTC5E2	142.	4.53	35.	9.	5.	.64		
+									2496.55	4.53
	2 COMBINED AT									
+		CP11EF	825.	4.53	188.	47.	28.	1.56		
	2 COMBINED AT									
+		CPEF	2694.	4.57	590.	149.	89.	3.57		
	ROUTED TO									
+		RTEFC8	2677.	4.60	590.	149.	89.	3.57		
+									2449.89	4.60
	HYDROGRAPH AT									
+		511C8	56.	4.03	7.	2.	1.	.04		
	2 COMBINED AT									
+		CP11C8	2690.	4.60	597.	150.	90.	3.61		
	ROUTED TO									
+		RTC8C7	2686.	4.60	597.	150.	90.	3.61		
+									2357.65	4.60
	HYDROGRAPH AT									
+		511C7	140.	4.20	24.	6.	4.	.12		
	HYDROGRAPH AT									
+		511C6	49.	4.07	8.	2.	1.	.04		
	HYDROGRAPH AT									
+		DRC5C6	454.	4.43	88.	22.	13.	.00		
	ROUTED TO									
+		RTC5C6	426.	4.60	88.	22.	13.	.00		
+									2489.69	4.60
	2 COMBINED AT									
+		CP11C6	446.	4.57	95.	24.	14.	.04		
	ROUTED TO									
+		RTC6C7	439.	4.67	95.	24.	14.	.04		
+									2446.89	4.67
	3 COMBINED AT									
+		CP11C7	3207.	4.60	716.	181.	108.	3.76		
	ROUTED TO									
+		RTC7H	3119.	4.80	698.	175.	105.	3.76		
+									2357.73	4.80
	HYDROGRAPH AT									
+		511H	283.	4.27	49.	12.	7.	.30		

	2 COMBINED AT								
+		CP11H	3257.	4.77	746.	187.	112.	4.07	
	ROUTED TO								
+		RTHG4	3254.	4.80	746.	187.	112.	4.07	
+									2330.36 4.80
	HYDROGRAPH AT								
+		511G1	381.	4.13	63.	16.	9.	.31	
	ROUTED TO								
+		RTG1G2	350.	4.37	63.	16.	9.	.31	
+									2466.94 4.37
	HYDROGRAPH AT								
+		511G2	176.	4.17	29.	7.	4.	.16	
	2 COMBINED AT								
+		CP11G2	508.	4.30	91.	23.	14.	.47	
	ROUTED TO								
+		RTG2G4	499.	4.47	91.	23.	14.	.47	
+									2356.50 4.47
	HYDROGRAPH AT								
+		511G3	109.	4.17	17.	4.	3.	.10	
	ROUTED TO								
+		RTG3G4	103.	4.37	17.	4.	3.	.10	
+									2375.90 4.37
	HYDROGRAPH AT								
+		511G4	290.	4.27	51.	13.	8.	.30	
	3 COMBINED AT								
+		CPG_G4	866.	4.37	159.	40.	24.	.86	
	2 COMBINED AT								
+		CP11G4	3851.	4.73	905.	227.	136.	4.93	
	ROUTED TO								
+		RTG4I	3828.	4.80	905.	227.	136.	4.93	
+									2357.52 4.80
	HYDROGRAPH AT								
+		511I	192.	4.20	31.	8.	5.	.20	
	2 COMBINED AT								
+		CP11I	3891.	4.80	935.	235.	141.	5.13	
	HYDROGRAPH AT								
+		510A	754.	4.53	162.	41.	24.	.92	
	HYDROGRAPH AT								
+		509A5	27.	4.03	4.	1.	1.	.02	
	DIVERSION TO								
+		DIA5S	1.	4.03	0.	0.	0.	.02	
	HYDROGRAPH AT								
+		DIA59B	27.	4.03	4.	1.	1.	.02	
	ROUTED TO								
+		RTA59B	12.	5.80	4.	1.	1.	.02	
+									2180.21 5.80
	HYDROGRAPH AT								
+		509B	482.	4.57	103.	26.	15.	.65	
	2 COMBINED AT								
+		CP09B	483.	4.57	106.	27.	16.	.67	
	HYDROGRAPH AT								
+		509A1	212.	4.23	38.	10.	6.	.19	
	ROUTED TO								
+		RTA1A2	207.	4.33	38.	10.	6.	.19	
+									2463.80 4.33
	HYDROGRAPH AT								
+		509A2	149.	4.23	27.	7.	4.	.13	
	HYDROGRAPH AT								
+		DRC2A2	143.	4.37	26.	7.	4.	.00	
	ROUTED TO								
+		RTC2A2	134.	4.63	26.	7.	4.	.00	

```
+                                                                                                  2499.06        4.63

        3 COMBINED AT
+                       CP09A2      445.    4.40          91.         23.         14.        .32

        ROUTED TO
+                       RTA2A4      432.    4.57          91.         23.         14.        .32
+                                                                                                  2417.64        4.53

        HYDROGRAPH AT
+                        509A3      195.    4.17          33.          8.          5.        .16

        ROUTED TO
+                       RTA3A4      192.    4.23          33.          8.          5.        .16
+                                                                                                  2403.60        4.23

        HYDROGRAPH AT
+                        509A4       88.    4.07          13.          3.          2.        .06

        3 COMBINED AT
+                       CP09A4      628.    4.40         136.         34.         21.        .55

        ROUTED TO
+                       RTA4A6      620.    4.50         136.         34.         21.        .55
+                                                                                                  2380.96        4.50

        HYDROGRAPH AT
+                       DRA5A6        1.    4.03           0.          0.          0.        .00

        ROUTED TO
+                       RTA5A6        1.    4.37           0.          0.          0.        .00
+                                                                                                  2377.96        4.37

        HYDROGRAPH AT
+                        509A6       49.    4.03           7.          2.          1.        .03

        3 COMBINED AT
+                       CP09A6      640.    4.50         144.         36.         22.        .58

        HYDROGRAPH AT
+                         509D      345.    4.40          70.         17.         11.        .38

        HYDROGRAPH AT
+                         500A      227.    4.17          37.          9.          6.        .20

        ROUTED TO
+                         RTAB      220.    4.37          37.          9.          6.        .20
+                                                                                                  2157.08        4.37

        HYDROGRAPH AT
+                         500B      184.    4.33          35.          9.          5.        .19

        2 COMBINED AT
+                       CP500B      404.    4.33          72.         18.         11.        .40


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

D.6.4 SOUTH BASIN

(C) 100-Year, 24-Hour Event, Existing Condition Model

```
1*************************************                    *************************************
 *                                   *                    *                                   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS     *
 *              JUL   1997           *                    *    HYDROLOGIC ENGINEERING CENTER    *
 *           VERSION 4.1             *                    *          609 SECOND STREET          *
 *                                   *                    *       DAVIS, CALIFORNIA 95616       *
 *  RUN DATE   30AUG06  TIME  13:22:18   *                    *           (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   Project ID: S_24EX - Major Basin: 01 - Return Period: 100 Years
        2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_24EX.DAT
        3           ID   MODEL:      100-year, 24-hour Existing Condition Model
        4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003
        5           ID
        6           ID   *** Modified South Watershed Model: Subbasin Added: 509A6 ***
        7           ID                                                         DATE REVISED: 5/06/05
        8           ID   *** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
        9           ID   *** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
       10           ID                                                         LAST UPDATE:  8/30/06
       11           ID
                    *
                    *DIAGRAM
       12           IT       2                    1200
       13           IO       5
       14           IN      15
                    *
                    * ******************************************************************************
                    * ******************************     Major Basin 511    ************************
                    * ******************************************************************************
                    *

       15           KK   511A1   BASIN
       16           KM   Sub-Basin   511A1
       17           KM
       18           KM      The Phoenix Mountain S-Graph is used for this basin.
       19           KM
       20           BA   0.294
       21           KM   RAINFALL DEPTH OF 4.58 WAS SPATIALLY REDUCED AS SHOWN BY THE PB RECORD
       22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.952 WAS USED.
       23           PB   4.358
       24           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
       25           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
       26           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
       27           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
       28           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       29           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       30           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       31           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
       32           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
       33           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
       34           LG    0.15    0.39    6.20    0.17       0
       35           UI      34      35      34      75     117     146     194     222     243     258
       36           UI     309     359     406     292     236     209     206     187     170     167
       37           UI     151     138     134     118     104      93      86      81      79      72
       38           UI      68      57      53      43      44      39      37      38      31      26
       39           UI      27      26      24      17      16      17      17      16      17      13
       40           UI       6       0       0       0       0       0       0       0       0       0
       41           UI       0       0       0       0       0       0       0       0       0       0
```

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  42        UI      0       0       0       0       0       0       0       0       0       0
            *
1                                        HEC-1 INPUT                                          PAGE  2

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

  43        KK   511A2   BASIN
  44        KM   Sub-Basin   511A2
  45        KM
  46        KM      The Phoenix Mountain S-Graph is used for this basin.
  47        KM
  48        BA   0.059
  49        LG    0.15    0.40    6.00    0.18       0
  50        UI      12      17      42      66      88     102     138     106      79      68
  51        UI      63      53      47      39      31      28      27      20      16      16
  52        UI      13      10      10       8       6       6       6       4       2       2
  53        UI       3       2       3       2       2       3       0       0       0       0
  54        UI       0       0       0       0       0       0       0       0       0       0
  55        UI       0       0       0       0       0       0       0       0       0       0
  56        UI       0       0       0       0       0       0       0       0       0       0
  57        UI       0       0       0       0       0       0       0       0       0       0
            *

  58        KK  RTA2A3   ROUTE   REACH
  59        KM   Normal depth channel route from 511A2 to 511A3
  60        RS       2    FLOW      -1
  61        RC   0.070   0.040   0.070    3286  0.0158 2664.50
  62        RX     0.0   100.1   119.0   129.4   137.7   156.2   367.9   409.0
  63        RY  2664.5  2658.0  2657.5  2657.0  2657.2  2658.0  2662.0  2662.5
            *

  64        KK   511A3   BASIN
  65        KM   Sub-Basin   511A3
  66        KM
  67        KM      The Phoenix Mountain S-Graph is used for this basin.
  68        KM
  69        BA   0.294
  70        LG    0.15    0.39    6.20    0.17       0
  71        UI      35      36      36      85     126     161     211     236     261     275
  72        UI     338     406     368     272     234     208     201     185     170     167
  73        UI     146     136     129     108      97      92      84      80      77      68
  74        UI      57      54      45      44      41      38      38      29      27      27
  75        UI      28      20      17      18      17      17      18      16       7       6
  76        UI       7       0       0       0       0       0       0       0       0       0
  77        UI       0       0       0       0       0       0       0       0       0       0
  78        UI       0       0       0       0       0       0       0       0       0       0
  79        UI       0       0       0       0       0       0       0       0       0       0
  80        UI       0       0       0       0       0       0       0       0       0       0
  81        UI       0       0       0       0       0       0       0       0       0       0
  82        UI       0       0       0       0       0       0       0       0       0       0
  83        UI       0       0       0       0       0       0       0       0       0       0
  84        UI       0       0       0       0       0       0       0       0       0       0
  85        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

  86        KK   CP11A
  87        KM     Combine routed hydrograph from 511A2 with runoff from 511A1 and 511A3
  88        HC       3
            *

  89        KK   RTA1D   ROUTE   REACH
  90        KM   Normal depth channel route from CP11A to 511D
  91        RS       4    FLOW      -1
  92        RC   0.070   0.040   0.070    5358  0.0186  151.20
  93        RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
  94        RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
            *

  95        KK    511D   BASIN
  96        KM   Sub-Basin   511D
  97        KM
  98        KM      The Phoenix Mountain S-Graph is used for this basin.
  99        KM
 100        BA   0.121
 101        LG    0.15    0.36    6.80    0.13       0
 102        UI      18      18      29      58      83     105     123     137     163     203
 103        UI     170     124     106     104      89      85      78      69      63      55
 104        UI      46      43      41      37      32      30      22      23      20      19
 105        UI      16      14      13      14       8       9       9       9       8       5
 106        UI       4       3       3       4       3       4       3       4       3       3
 107        UI       4       0       0       0       0       0       0       0       0       0
 108        UI       0       0       0       0       0       0       0       0       0       0
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 109        UI      0      0      0      0      0      0      0      0      0      0
 110        UI      0      0      0      0      0      0      0      0      0      0
            *

 111        KK   CP11D
 112        KM     Combine routed hydrograph from CP11A with runoff from 511D
 113        HC       2
            *

 114        KK   511B4   BASIN
 115        KM   Sub-Basin   511B4
 116        KM
 117        KM      The Phoenix Mountain S-Graph is used for this basin.
 118        KM
 119        BA   0.194
 120        LG    0.15    0.36    6.80    0.13      12
 121        UI      32      33      76     128     188     219     250     308     386     258
 122        UI     213     184     171     160     137     124     110      90      79      77
 123        UI      68      56      51      41      37      37      30      25      26      20
 124        UI      16      16      16      16       8       6       6       7       6       6
 125        UI       7       6       6       6       7       6       0       0       0       0
 126        UI       0       0       0       0       0       0       0       0       0       0
 127        UI       0       0       0       0       0       0       0       0       0       0
 128        UI       0       0       0       0       0       0       0       0       0       0
            *
1                                        HEC-1 INPUT                                          PAGE  4

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

 129        KK   511B1   BASIN
 130        KM   Sub-Basin   511B1
 131        KM
 132        KM      The Phoenix Mountain S-Graph is used for this basin.
 133        KM
 134        BA   0.583
 135        LG    0.15    0.38    6.40    0.16       4
 136        UI      49      50      49      48      88     138     176     216     256     293
 137        UI     325     344     361     399     425     492     580     572     421     361
 138        UI     330     296     294     282     258     256     238     224     218     201
 139        UI     191     188     170     150     145     128     123     124     113     111
 140        UI     107     102      88      82      79      66      64      62      61      55
 141        UI      53       0       0       0       0       0       0       0       0       0
 142        UI       0       0       0       0       0       0       0       0       0       0
 143        UI       0       0       0       0       0       0       0       0       0       0
            *

 144        KK   511B2   BASIN
 145        KM   Sub-Basin   511B2
 146        KM
 147        KM      The Phoenix Mountain S-Graph is used for this basin.
 148        KM
 149        BA   0.222
 150        LG    0.15    0.38    6.40    0.16       0
 151        UI      23      24      23      36      71      91     113     140     153     166
 152        UI     185     198     238     289     227     172     155     140     135     129
 153        UI     118     110     105      96      91      86      75      69      62      57
 154        UI      56      55      49      47      40      38      31      31      29      26
 155        UI      26      25      21      18      18      18      18      12      12      11
 156        UI      12       0       0       0       0       0       0       0       0       0
 157        UI       0       0       0       0       0       0       0       0       0       0
 158        UI       0       0       0       0       0       0       0       0       0       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        UI       0       0       0       0       0       0       0       0       0       0
 162        UI       0       0       0       0       0       0       0       0       0       0
 163        UI       0       0       0       0       0       0       0       0       0       0
 164        UI       0       0       0       0       0       0       0       0       0       0
 165        UI       0       0       0       0       0       0       0       0       0       0
            *

 166        KK  CPB1B2
 167        KM     Combine hydrograph from 511B1 and 511B2
 168        HC       2
            *

 169        KK  RT12B4   ROUTE   REACH
 170        KM   Normal depth channel route from CPB1B2 to 511B4
 171        RS       3    FLOW      -1
 172        RC   0.070   0.040   0.070    3973  0.0186 2582.00
 173        RX     0.0    36.4    62.6    86.9    98.0   114.8   303.0   378.7
 174        RY  2582.0  2578.0  2576.0  2574.0  2573.4  2574.0  2578.0  2582.0
            *
1                                        HEC-1 INPUT                                          PAGE  5

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
175          KK   511B3   BASIN
176          KM   Sub-Basin   511B3
177          KM
178          KM      The Phoenix Mountain S-Graph is used for this basin.
179          KM
180          BA   0.080
181          LG    0.15    0.37    6.60    0.14       0
182          UI      15      15      44      68      97     109     130     176     120      96
183          UI      85      76      69      62      50      44      38      35      31      26
184          UI      21      18      17      16      11      12       9       8       7       7
185          UI       7       3       2       3       3       3       3       3       3       2
186          UI       3       0       0       0       0       0       0       0       0       0
187          UI       0       0       0       0       0       0       0       0       0       0
188          UI       0       0       0       0       0       0       0       0       0       0
189          UI       0       0       0       0       0       0       0       0       0       0
190          UI       0       0       0       0       0       0       0       0       0       0
191          UI       0       0       0       0       0       0       0       0       0       0
192          UI       0       0       0       0       0       0       0       0       0       0
193          UI       0       0       0       0       0       0       0       0       0       0
194          UI       0       0       0       0       0       0       0       0       0       0
195          UI       0       0       0       0       0       0       0       0       0       0
196          UI       0       0       0       0       0       0       0       0       0       0
             *

197          KK  RTB3B4   ROUTE   REACH
198          KM   Normal depth channel route from 511B3 to 511B4
199          RS       2    FLOW      -1
200          RC   0.070   0.040   0.070    3126  0.0205 2565.00
201          RX     0.0    16.6    28.0    34.2    39.7    63.8   108.6   198.6
202          RY  2563.0  2562.0  2560.8  2560.3  2560.6  2562.0  2564.3  2565.0
             *

203          KK   CP11B
204          KM     Combine routed hydrographs from CPB1B2 and 511B3 with 511B4
205          HC       3
             *

206          KK   RTB4D   ROUTE   REACH
207          KM   Normal depth channel route from CP11B to RTB4D
208          RS       1    FLOW      -1
209          RC   0.070   0.040   0.070     521  0.0179 2536.00
210          RX     0.0    89.0   118.0   165.0   222.0   363.0   411.0   516.0
211          RY  2536.0  2534.0  2532.0  2531.5  2532.0  2532.2  2532.8  2534.0
             *

212          KK  CP11DF
213          KM     Combine routed hydrographs from CP11D and RTB4D
214          HC       2
             * ---------------------------------------------------------------------------
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

215          KK    RTDF   ROUTE   REACH
216          KM   Normal depth channel route from CP11DF to CP11F                            R
217          RS       3    FLOW      -1
218          RC   0.070   0.040   0.070    3664  0.0191  151.20
219          RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
220          RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
             *

221          KK    511F   BASIN
222          KM   Sub-Basin   511F
223          KM
224          KM      The Phoenix Mountain S-Graph is used for this basin.
225          KM
226          BA   0.157
227          LG    0.14    0.38    6.40    0.15       4
228          UI      26      27      62     103     152     177     202     250     312     209
229          UI     172     149     138     130     111     101      88      73      63      63
230          UI      55      46      41      33      30      30      24      21      20      17
231          UI      12      14      12      13       7       5       5       5       5       5
232          UI       6       5       5       5       5       5       0       0       0       0
             *

233          KK   CP11F
234          KM     Combine routed hydrograph from CP11DF with runoff from 511F
235          HC       2
             *

236          KK   511C1   BASIN
237          KM   Sub-Basin   511C1
238          KM
239          KM      The Phoenix Mountain S-Graph is used for this basin.
```

```
240          KM
241          BA   0.329
242          LG    0.15    0.40    6.00    0.18       0
243          UI      33      34      33      44      99     124     155     200     212     235
244          UI     256     276     317     389     386     271     235     210     197     193
245          UI     177     166     160     146     136     134     116     106      98      87
246          UI      81      81      77      71      72      54      55      47      43      42
247          UI      39      37      36      34      26      25      27      25      23      17
248          UI      16       0       0       0       0       0       0       0       0       0
249          UI       0       0       0       0       0       0       0       0       0       0
250          UI       0       0       0       0       0       0       0       0       0       0
251          UI       0       0       0       0       0       0       0       0       0       0
252          UI       0       0       0       0       0       0       0       0       0       0
253          UI       0       0       0       0       0       0       0       0       0       0
254          UI       0       0       0       0       0       0       0       0       0       0
255          UI       0       0       0       0       0       0       0       0       0       0
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

256          KK  DIC1E2
257          KM   DIVERT FLOW FROM 511C1 TO 511C4 AT NATURAL FLOW SPLIT
258          DT  DIC1C4
259          DI       0      75     150     225     300     480     650
260          DQ       0      38      77     117     155     250     340
             *

261          KK  RTC1E2   ROUTE   REACH
262          KM   Normal depth channel route from 511C1 to 511E2
263          RS       5    FLOW      -1
264          RC   0.070   0.040   0.070    7085  0.0209 2506.00
265          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
266          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

267          KK   511E1   BASIN
268          KM   Sub-Basin   511E1
269          KM
270          KM      The Phoenix Mountain S-Graph is used for this basin.
271          KM
272          BA   0.296
273          LG    0.15    0.40    6.00    0.18       0
274          UI      32      33      32      57     101     128     163     202     216     232
275          UI     261     291     350     392     261     222     206     185     179     170
276          UI     156     146     139     127     117     108      96      84      81      76
277          UI      72      71      65      51      53      42      40      41      36      35
278          UI      36      25      24      25      24      22      16      16      16      16
279          UI      15       0       0       0       0       0       0       0       0       0
280          UI       0       0       0       0       0       0       0       0       0       0
281          UI       0       0       0       0       0       0       0       0       0       0
282          UI       0       0       0       0       0       0       0       0       0       0
283          UI       0       0       0       0       0       0       0       0       0       0
284          UI       0       0       0       0       0       0       0       0       0       0
285          UI       0       0       0       0       0       0       0       0       0       0
286          UI       0       0       0       0       0       0       0       0       0       0
             *

287          KK  RTE1E2   ROUTE   REACH
288          KM   Normal depth channel route from 511E1 to 511E2
289          RS       3    FLOW      -1
290          RC   0.070   0.040   0.070    4907  0.0187 2506.00
291          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
292          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

293          KK   511E2   BASIN
294          KM   Sub-Basin   511E2
295          KM
296          KM      The Phoenix Mountain S-Graph is used for this basin.
297          KM
298          BA   0.276
299          LG    0.15    0.36    6.80    0.13       1
300          UI      28      28      28      38      82     104     129     168     179     197
301          UI     215     231     267     325     324     228     197     176     165     162
1                                          HEC-1 INPUT                                          PAGE  8

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

302          UI     149     138     134     123     115     112      97      89      83      73
303          UI      67      68      64      60      60      46      46      40      36      35
304          UI      33      31      30      29      21      22      22      21      19      14
305          UI      14       0       0       0       0       0       0       0       0       0
306          UI       0       0       0       0       0       0       0       0       0       0
307          UI       0       0       0       0       0       0       0       0       0       0
308          UI       0       0       0       0       0       0       0       0       0       0
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309          UI       0       0       0       0       0       0       0       0       0       0
310          UI       0       0       0       0       0       0       0       0       0       0
311          UI       0       0       0       0       0       0       0       0       0       0
312          UI       0       0       0       0       0       0       0       0       0       0
             *

313          KK  CPE1E2
314          KM     Combine routed hydrographs from 511E1 with 511E2
315          HC       2
             *

316          KK   511C4   BASIN
317          KM   Sub-Basin   511C4
318          KM
319          KM      The Phoenix Mountain S-Graph is used for this basin.
320          KM
321          BA   0.020
322          LG    0.15    0.40    6.00    0.18       0
323          UI       7      21      42      57      67      40      34      27      21      16
324          UI      13       9       8       6       5       3       3       1       2       1
325          UI       1       2       1       0       0       0       0       0       0       0
326          UI       0       0       0       0       0       0       0       0       0       0
327          UI       0       0       0       0       0       0       0       0       0       0
328          UI       0       0       0       0       0       0       0       0       0       0
329          UI       0       0       0       0       0       0       0       0       0       0
330          UI       0       0       0       0       0       0       0       0       0       0
331          UI       0       0       0       0       0       0       0       0       0       0
332          UI       0       0       0       0       0       0       0       0       0       0
333          UI       0       0       0       0       0       0       0       0       0       0
334          UI       0       0       0       0       0       0       0       0       0       0
335          UI       0       0       0       0       0       0       0       0       0       0
             *

336          KK  DRC1C4
337          KM        RETURN DIVERT FROM 511C1
338          DR  DIC1C4
             *

339          KK  RTC1C4   ROUTE   REACH
340          KM   Normal depth channel route from 511C1 to 511C4
341          RS       1    FLOW      -1
342          RC   0.070   0.040   0.070    1058  0.0170 2605.30
343          RX     0.0   104.0   140.0   187.0   243.0   273.0   302.0   324.0
344          RY  2599.4  2599.6  2598.4  2598.3  2600.0  2602.0  2604.0  2605.3
             *
1                                          HEC-1 INPUT                                          PAGE  9

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

345          KK  CP11C4
346          KM     Combine routed hydrographs from 511C1 with 511C4
347          HC       2
             *

348          KK  DIC4E2
349          KM   DIVERT FLOW FROM 511C4 TO 511C5 AT NATURAL FLOW SPLIT
350          DT  DIC4C5
351          DI       0      25     100     150     300     400     500
352          DQ       0      20      73     106     203     264     325
             *

353          KK  RTC4E2   ROUTE   REACH
354          KM   Normal depth channel route from 511C4 to 511E2
355          RS       4    FLOW      -1
356          RC   0.070   0.040   0.070    6075  0.0214 2506.00
357          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
358          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

359          KK  CP11E2
360          KM     Combine routed hydrographs from CPE1E2, RTC1E2,RTC4E2
361          HC       3
             *

362          KK   511C5   BASIN
363          KM   Sub-Basin   511C5
364          KM
365          KM      The Phoenix Mountain S-Graph is used for this basin.
366          KM
367          BA   0.110
368          LG    0.15    0.35    7.00    0.12       0
369          UI      19      20      51      80     120     136     156     213     198     136
370          UI     119     106      94      87      76      66      57      48      44      43
371          UI      33      28      25      22      21      16      15      15      10       9
372          UI      10       9       7       4       4       3       4       4       4       3
373          UI       4       4       4       0       0       0       0       0       0       0
```

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374          UI       0       0       0       0       0       0       0       0       0       0
375          UI       0       0       0       0       0       0       0       0       0       0
376          UI       0       0       0       0       0       0       0       0       0       0
377          UI       0       0       0       0       0       0       0       0       0       0
378          UI       0       0       0       0       0       0       0       0       0       0
379          UI       0       0       0       0       0       0       0       0       0       0
380          UI       0       0       0       0       0       0       0       0       0       0
381          UI       0       0       0       0       0       0       0       0       0       0
             *

382          KK  DRC4C5
383          KM        RETURN DIVERT FROM 511C4
384          DR  DIC4C5
             *
1                                          HEC-1 INPUT                                          PAGE 10

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

385          KK  RTC4C5   ROUTE   REACH
386          KM   Normal depth channel route from 511C4 to 511C5
387          RS       2    FLOW      -1
388          RC   0.070   0.040   0.070    3182  0.0236 2532.20
389          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
390          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
             *

391          KK   511C3   BASIN
392          KM   Sub-Basin   511C3
393          KM
394          KM      The Phoenix Mountain S-Graph is used for this basin.
395          KM
396          BA   0.141
397          LG    0.15    0.40    6.00    0.18       0
398          UI      22      22      40      73     109     134     156     176     212     250
399          UI     171     140     125     117     106      95      90      76      68      58
400          UI      53      49      47      37      34      28      27      23      24      18
401          UI      17      17      13      10      11      10      10       9       4       4
402          UI       4       4       4       5       4       4       4       4       4       5
403          UI       0       0       0       0       0       0       0       0       0       0
404          UI       0       0       0       0       0       0       0       0       0       0
405          UI       0       0       0       0       0       0       0       0       0       0
406          UI       0       0       0       0       0       0       0       0       0       0
407          UI       0       0       0       0       0       0       0       0       0       0
408          UI       0       0       0       0       0       0       0       0       0       0
409          UI       0       0       0       0       0       0       0       0       0       0
410          UI       0       0       0       0       0       0       0       0       0       0
             *

411          KK  RTC3C5   ROUTE   REACH
412          KM   Normal depth channel route from 511C3 to 511C5
413          RS       2    FLOW      -1
414          RC   0.070   0.040   0.070    3234  0.0232 2532.20
415          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
416          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
             *

417          KK   511C2   BASIN
418          KM   Sub-Basin   511C2
419          KM
420          KM      The Phoenix Mountain S-Graph is used for this basin.
421          KM
422          BA   0.392
423          LG    0.15    0.40    6.00    0.18       0
424          UI      36      38      36      36      98     119     148     191     216     238
425          UI     266     275     296     349     403     442     338     270     241     227
426          UI     215     203     193     182     170     164     150     144     137     122
427          UI     114     100      93      90      88      84      77      78      62      59
428          UI      57      47      46      48      39      40      41      36      28      29
429          UI      28       0       0       0       0       0       0       0       0       0
430          UI       0       0       0       0       0       0       0       0       0       0
431          UI       0       0       0       0       0       0       0       0       0       0
432          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 11

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

433          UI       0       0       0       0       0       0       0       0       0       0
434          UI       0       0       0       0       0       0       0       0       0       0
435          UI       0       0       0       0       0       0       0       0       0       0
436          UI       0       0       0       0       0       0       0       0       0       0
             *

437          KK  DIC2C5
438          KM   DIVERT FLOW FROM 511C2 TO 509A2 AT NATURAL FLOW SPLIT
439          DT  DIC2A2
440          DI       0      25      70     150     300     400     500
```

```
441          DQ       0       7    22.5      51     111     152     197
             *

442          KK  RTC2C5   ROUTE   REACH
443          KM   Normal depth channel route from 511C2 to 511C5
444          RS       2    FLOW      -1
445          RC   0.070   0.040   0.070    3086  0.0230 2554.50
446          RX     0.0     9.3    49.5   114.2   122.3   140.1   149.6   197.3
447          RY  2554.5  2554.0  2552.2  2552.0  2551.8  2551.6  2552.0  2553.8
             *

448          KK  CP11C5
449          KM     Combine routed hydrographs from 511C5, RTC4C5, RTC3C5, RTC2C5
450          HC       4
             *

451          KK  DIC5E2
452          KM   DIVERT FLOW FROM 511C5 TO 511C6 AT NATURAL FLOW SPLIT
453          DT  DIC5C6
454          DI       0     100     150     200     250     300     350     400     450     500
455          DI     550     600     650     700     750
456          DQ       0      60      97     136     174     218     257     290     332     375
457          DQ     418     455     369     401     421
             *

458          KK  RTC5E2   ROUTE   REACH
459          KM   Normal depth channel route from 511C5 to 511E2
460          RS       2    FLOW      -1
461          RC   0.070   0.040   0.070    2668  0.0217 2506.00
462          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
463          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

464          KK  CP11EF
465          KM     Combine hydrographs CP11E2 and RTC5E2
466          HC       2
             *

467          KK    CPEF
468          KM     Combine hydrographs from CP11EF and CP11F2
469          HC       2
             *
1                                        HEC-1 INPUT                                          PAGE 12

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

470          KK  RTEFC8   ROUTE   REACH
471          KM   Normal depth channel route from CPEF to CP11C8
472          RS       1    FLOW      -1
473          RC   0.070   0.040   0.070    1278  0.0141 2454.00
474          RX     0.0    86.0    91.9   125.2   207.6   319.0   482.9   605.1
475          RY  2454.0  2448.0  2447.0  2447.0  2448.0  2450.0  2451.0  2452.0
             *

476          KK   511C8   BASIN
477          KM   Sub-Basin   5118
478          KM
479          KM      The Phoenix Mountain S-Graph is used for this basin.
480          KM
481          BA   0.041
482          LG    0.15    0.37    5.20    0.25       0
483          UI      13      34      69      94     139      89      70      59      48      36
484          UI      30      25      17      15      12      10       7       6       5       3
485          UI       2       3       2       3       2       0       0       0       0       0
486          UI       0       0       0       0       0       0       0       0       0       0
487          UI       0       0       0       0       0       0       0       0       0       0
488          UI       0       0       0       0       0       0       0       0       0       0
489          UI       0       0       0       0       0       0       0       0       0       0
490          UI       0       0       0       0       0       0       0       0       0       0
491          UI       0       0       0       0       0       0       0       0       0       0
492          UI       0       0       0       0       0       0       0       0       0       0
493          UI       0       0       0       0       0       0       0       0       0       0
494          UI       0       0       0       0       0       0       0       0       0       0
495          UI       0       0       0       0       0       0       0       0       0       0
496          UI       0       0       0       0       0       0       0       0       0       0
497          UI       0       0       0       0       0       0       0       0       0       0
498          UI       0       0       0       0       0       0       0       0       0       0
             *

499          KK  CP11C8
500          KM     Combine routed hydrograph from CPEF with 511C8
501          HC       2
             *

502          KK  RTC8C7   ROUTE   REACH
503          KM   Normal depth channel route from CP11C8 to 511C7
```

```
 504          RS       1    FLOW      -1
 505          RC   0.070   0.040   0.070     547  0.0146 2460.00
 506          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
 507          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
              *

 508          KK   511C7   BASIN
 509          KM   Sub-Basin   511C7
 510          KM
 511          KM      The Phoenix Mountain S-Graph is used for this basin.
 512          KM
 513          BA   0.121
 514          LG    0.14    0.39    6.20    0.16       7
 515          UI      17      17      25      53      73      99     113     130     139     177
1                                          HEC-1 INPUT                                          PAGE 13

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

 516          UI     201     127     110     102      91      84      82      71      65      59
 517          UI      50      45      42      38      35      32      28      22      22      19
 518          UI      19      18      13      13      13      10       8       9       8       8
 519          UI       9       3       3       4       3       3       3       4       3       3
 520          UI       4       0       0       0       0       0       0       0       0       0
 521          UI       0       0       0       0       0       0       0       0       0       0
 522          UI       0       0       0       0       0       0       0       0       0       0
 523          UI       0       0       0       0       0       0       0       0       0       0
 524          UI       0       0       0       0       0       0       0       0       0       0
 525          UI       0       0       0       0       0       0       0       0       0       0
 526          UI       0       0       0       0       0       0       0       0       0       0
 527          UI       0       0       0       0       0       0       0       0       0       0
 528          UI       0       0       0       0       0       0       0       0       0       0
 529          UI       0       0       0       0       0       0       0       0       0       0
 530          UI       0       0       0       0       0       0       0       0       0       0
              *

 531          KK   511C6   BASIN
 532          KM   Sub-Basin   511C6
 533          KM
 534          KM      The Phoenix Mountain S-Graph is used for this basin.
 535          KM
 536          BA   0.035
 537          LG    0.15    0.35    7.00    0.12       0
 538          UI       8      10      24      39      53      60      82      63      46      41
 539          UI      37      32      28      23      18      17      16      12       9       9
 540          UI       8       6       6       4       4       4       4       2       1       2
 541          UI       1       2       1       2       1       2       0       0       0       0
 542          UI       0       0       0       0       0       0       0       0       0       0
 543          UI       0       0       0       0       0       0       0       0       0       0
 544          UI       0       0       0       0       0       0       0       0       0       0
 545          UI       0       0       0       0       0       0       0       0       0       0
 546          UI       0       0       0       0       0       0       0       0       0       0
 547          UI       0       0       0       0       0       0       0       0       0       0
 548          UI       0       0       0       0       0       0       0       0       0       0
 549          UI       0       0       0       0       0       0       0       0       0       0
 550          UI       0       0       0       0       0       0       0       0       0       0
 551          UI       0       0       0       0       0       0       0       0       0       0
 552          UI       0       0       0       0       0       0       0       0       0       0
 553          UI       0       0       0       0       0       0       0       0       0       0
              *

 554          KK  DRC5C6
 555          KM        RETURN DIVERT FROM 511C5
 556          DR  DIC5C6
              *

 557          KK  RTC5C6   ROUTE   REACH
 558          KM   Normal depth channel route from 511C5 to 511C6
 559          RS       2    FLOW      -1
 560          RC   0.070   0.040   0.070    2644  0.0155 2490.80
 561          RX     0.0    68.8   177.6   245.2   257.0   350.0   363.8   398.6
 562          RY  2490.0  2489.3  2488.8  2490.0  2489.0  2489.0  2490.0  2490.8
              *
1                                          HEC-1 INPUT                                          PAGE 14

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

 563          KK  CP11C6
 564          KM     Combine routed hydrograph from 511C6 and RTC5C6
 565          HC       2
              *
              *

 566          KK  RTC6C7   ROUTE   REACH
 567          KM   Normal depth channel route from 511C6 to 511C7
 568          RS       1    FLOW      -1
 569          RC   0.070   0.040   0.070    1801  0.0233 2450.10
```

```
570          RX     0.0    73.0    80.0    90.0    93.0    96.0   103.0   162.0
571          RY  2450.1  2448.0  2446.0  2444.0  2443.7  2444.0  2446.0  2448.0
             *

572          KK  CP11C7
573          KM     Combine routed hydrograph from CP11C8, 511C7, RTC6C7
574          HC       3
             *

575          KK   RTC7H   ROUTE   REACH
576          KM   Normal depth channel route from 511C7 to 511H
577          RS       4    FLOW      -1
578          RC   0.070   0.040   0.070    6348  0.0176 2460.00
579          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
580          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
581          RL                    0.62  2356.3
             *

582          KK    511H   BASIN
583          KM   Sub-Basin   511H
584          KM
585          KM      The Phoenix Mountain S-Graph is used for this basin.
586          KM
587          BA   0.303
588          LG    0.15    0.35    4.40    0.38       1
589          UI      32      34      32      59     104     132     166     207     221     238
590          UI     267     297     358     402     267     227     211     189     183     174
591          UI     161     149     142     131     119     111      98      86      82      78
592          UI      74      73      66      53      54      43      41      43      35      36
593          UI      37      25      25      26      25      22      17      16      16      16
594          UI      16       0       0       0       0       0       0       0       0       0
595          UI       0       0       0       0       0       0       0       0       0       0
596          UI       0       0       0       0       0       0       0       0       0       0
597          UI       0       0       0       0       0       0       0       0       0       0
598          UI       0       0       0       0       0       0       0       0       0       0
599          UI       0       0       0       0       0       0       0       0       0       0
600          UI       0       0       0       0       0       0       0       0       0       0
601          UI       0       0       0       0       0       0       0       0       0       0
602          UI       0       0       0       0       0       0       0       0       0       0
603          UI       0       0       0       0       0       0       0       0       0       0
604          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

605          KK   CP11H
606          KM     Combine routed hydrographs from RTC7H with 511H
607          HC       2
             *

608          KK   RTHG4   ROUTE   REACH
609          KM   Normal depth channel route from CPC7H TO 511G4
610          RS       1    FLOW      -1
611          RC   0.070   0.040   0.070     933  0.0209 2336.00
612          RX     0.0    44.0    71.0    80.0    90.0   101.0   143.0   154.0
613          RY  2336.0  2330.0  2324.0  2323.3  2324.0  2330.0  2334.0  2335.0
             *

614          KK   511G1   BASIN
615          KM   Sub-Basin   511G1
616          KM
617          KM      The Phoenix Mountain S-Graph is used for this basin.
618          KM
619          BA   0.310
620          LG    0.15    0.38    5.60    0.22       8
621          UI      51      53     122     205     299     350     400     492     618     411
622          UI     340     294     274     255     220     198     174     144     126     124
623          UI     108      91      80      66      60      59      48      40      41      32
624          UI      25      26      25      26      13      10      10      10      10      10
625          UI      10      10      10      10      10      10       0       0       0       0
626          UI       0       0       0       0       0       0       0       0       0       0
627          UI       0       0       0       0       0       0       0       0       0       0
628          UI       0       0       0       0       0       0       0       0       0       0
629          UI       0       0       0       0       0       0       0       0       0       0
630          UI       0       0       0       0       0       0       0       0       0       0
             *

631          KK  RTG1G2   ROUTE   REACH
632          KM   Normal depth channel route from 511G1 to 511G2
633          RS       3    FLOW      -1
634          RC   0.070   0.040   0.070    4246  0.0146 2472.00
635          RX    19.0    45.0    98.0   182.0   219.0   234.0   270.0   308.0
636          RY  2472.0  2470.0  2468.0  2466.0  2465.5  2466.0  2468.0  2472.0
             *
```

```
637          KK   511G2   BASIN
638          KM   Sub-Basin   511G2
639          KM
640          KM      The Phoenix Mountain S-Graph is used for this basin.
641          KM
642          BA   0.157
643          LG    0.15    0.37    5.30    0.24       0
644          UI      23      23      39      74     108     137     158     179     212     263
645          UI     221     161     137     134     117     110     100      90      83      70
646          UI      60      56      53      48      42      39      29      28      26      25
647          UI      21      18      18      17      11      11      12      11      11       7
648          UI       4       5       4       5       4       4       5       4       5       4
649          UI       5       0       0       0       0       0       0       0       0       0
650          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 16

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

651          UI       0       0       0       0       0       0       0       0       0       0
652          UI       0       0       0       0       0       0       0       0       0       0
653          UI       0       0       0       0       0       0       0       0       0       0
             *

654          KK  CP11G2
655          KM     Combine routed hydrographs from 511G1, 511G2 and CPC7H
656          HC       2
             *

657          KK  RTG2G4   ROUTE   REACH
658          RS       4    FLOW      -1
659          RC   0.070   0.040   0.070    5908  0.0190 2472.00
660          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
661          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

662          KK   511G3   BASIN
663          KM   Sub-Basin   511G3
664          KM
665          KM      The Phoenix Mountain S-Graph is used for this basin.
666          KM
667          BA   0.097
668          LG    0.15    0.36    5.00    0.28       0
669          UI      14      15      23      46      67      84      99     110     130     163
670          UI     137     100      84      83      72      68      62      56      50      44
671          UI      37      34      33      30      26      24      18      18      16      15
672          UI      13      11      11      10       7       7       7       7       7       4
673          UI       3       2       3       3       3       2       3       3       3       2
674          UI       3       0       0       0       0       0       0       0       0       0
675          UI       0       0       0       0       0       0       0       0       0       0
676          UI       0       0       0       0       0       0       0       0       0       0
677          UI       0       0       0       0       0       0       0       0       0       0
678          UI       0       0       0       0       0       0       0       0       0       0
             *

679          KK  RTG3G4   ROUTE   REACH
680          KM   Normal depth channel route from 511G3 to 511G4
681          RS       4    FLOW      -1
682          RC   0.070   0.040   0.070    5322  0.0231 2380.30
683          RX    34.0    65.0    84.0    98.0   105.0   131.0   166.0   173.0
684          RY  2380.0  2378.0  2376.0  2374.0  2376.0  2378.0  2380.0  2380.3
             *

685          KK   511G4   BASIN
686          KM   Sub-Basin   511G4
687          KM
688          KM      The Phoenix Mountain S-Graph is used for this basin.
689          KM
690          BA   0.298
691          LG    0.15    0.35    4.65    0.32       1
692          UI      33      34      33      67     110     139     179     213     230     248
693          UI     285     321     402     343     248     217     204     189     176     171
694          UI     155     144     140     124     111     104      89      83      82      76
695          UI      71      68      54      53      44      42      40      37      37      33
1                                          HEC-1 INPUT                                          PAGE 17

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

696          UI      26      26      25      26      18      17      16      17      16      17
697          UI      16       0       0       0       0       0       0       0       0       0
698          UI       0       0       0       0       0       0       0       0       0       0
699          UI       0       0       0       0       0       0       0       0       0       0
700          UI       0       0       0       0       0       0       0       0       0       0
701          UI       0       0       0       0       0       0       0       0       0       0
             *

702          KK  CPG_G4
703          KM     Combine routed hydrographs from RTG2G4, RTG3G4 and 511G4
```

```
704          HC       3
             *

705          KK  CP11G4
706          KM     Combine routed hydrographs from RTHG4 and CFG_G4
707          HC       2
             *

708          KK   RTG4I   ROUTE   REACH
709          RS       3    FLOW      -1
710          RC   0.070   0.040   0.070    4438  0.0361 2460.00
711          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
712          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

713          KK    511I   BASIN
714          KM   Sub-Basin   511I
715          KM
716          KM      The Phoenix Mountain S-Graph is used for this basin.
717          KM
718          BA   0.198
719          LG    0.14    0.35    4.10    0.44       2
720          UI      28      28      40      86     121     162     184     213     228     290
721          UI     328     209     179     166     151     137     133     117     107      96
722          UI      82      72      69      63      58      52      46      36      36      32
723          UI      30      28      22      21      22      16      14      14      13      14
724          UI      14       5       5       6       5       5       6       5       5       5
725          UI       6       0       0       0       0       0       0       0       0       0
726          UI       0       0       0       0       0       0       0       0       0       0
             *

727          KK   CP11I
728          KM     Combine routed hydrograph from RTG2I with runoff from 511I
729          KO                                     21
730          HC       2
             *
             *
             * ******************************************************************************
             * ******************************     Major Basin 510     ************************
             * ******************************************************************************
             *
1                                        HEC-1 INPUT                                          PAGE 18

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

731          KK    510A   BASIN
732          KM   Sub-Basin   510A
733          KM
734          KM      The Phoenix Mountain S-Graph is used for this basin.
735          KM
736          BA   0.923
737          KO                                     21
738          LG    0.12    0.39    6.20    0.15      10
739          UI      63      64      63      63      64     106     182     212     240     286
740          UI     347     373     402     435     459     472     507     535     601     691
741          UI     753     746     570     467     446     419     383     370     381     338
742          UI     329     330     308     294     290     269     251     253     238     215
743          UI     212     197     177     171     160     153     156     144     144     139
744          UI     133       0       0       0       0       0       0       0       0       0
745          UI       0       0       0       0       0       0       0       0       0       0
746          UI       0       0       0       0       0       0       0       0       0       0
747          UI       0       0       0       0       0       0       0       0       0       0
748          UI       0       0       0       0       0       0       0       0       0       0
749          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
             * ******************************************************************************
             * ******************************     Major Basin 509     ************************
             * ******************************************************************************
             *

750          KK   509A5   BASIN
751          KM   Sub-Basin   509A5
752          KM
753          KM      The Phoenix Mountain S-Graph is used for this basin.
754          KM
755          BA   0.020
756          LG    0.12    0.36    5.10    0.24       9
757          UI       7      21      42      57      67      40      34      27      21      16
758          UI      13       9       8       6       5       3       3       1       2       1
759          UI       1       2       1       0       0       0       0       0       0       0
760          UI       0       0       0       0       0       0       0       0       0       0
761          UI       0       0       0       0       0       0       0       0       0       0
762          UI       0       0       0       0       0       0       0       0       0       0
763          UI       0       0       0       0       0       0       0       0       0       0
764          UI       0       0       0       0       0       0       0       0       0       0
```

```
765          UI       0       0       0       0       0       0       0       0       0       0
766          UI       0       0       0       0       0       0       0       0       0       0
767          UI       0       0       0       0       0       0       0       0       0       0
768          UI       0       0       0       0       0       0       0       0       0       0
             *

769          KK  DIA59B
770          KM   DIVERT FLOW FROM 509A5 TO 509A6 BY NATURAL FLOW SPLIT
771          DT   DIA5S
772          DI       0      75     150     225     308     480     650
773          DQ       0       2      15      30      50      95     140
             *
1                                          HEC-1 INPUT                                                PAGE 19

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

774          KK  RTA59B   ROUTE   REACH
775          KM   Normal depth channel route from 509A5 to 509B
776          RS      13    FLOW      -1
777          RC   0.070   0.040   0.070   18484  0.0233 2188.00
778          RX     0.0    61.0   150.0   160.0   164.0   174.0   266.0   290.0
779          RY  2184.6  2184.0  2182.0  2180.0  2179.8  2180.0  2186.0  2188.0
             *

780          KK    509B   BASIN
781          KM   Sub-Basin   509B
782          KM
783          KM      The Phoenix Mountain S-Graph is used for this basin.
784          KM
785          BA   0.654
786          LG    0.15    0.36    5.10    0.26       0
787          UI      39      40      39      39      40      38      80     116     125     150
788          UI     172     190     226     240     255     262     289     292     304     327
789          UI     348     381     433     481     463     377     304     281     268     245
790          UI     239     234     225     217     214     201     194     191     180     175
791          UI     172     159     156     154     140     133     129     121     110     107
792          UI     101       0       0       0       0       0       0       0       0       0
793          UI       0       0       0       0       0       0       0       0       0       0
794          UI       0       0       0       0       0       0       0       0       0       0
795          UI       0       0       0       0       0       0       0       0       0       0
796          UI       0       0       0       0       0       0       0       0       0       0
797          UI       0       0       0       0       0       0       0       0       0       0
798          UI       0       0       0       0       0       0       0       0       0       0
             * ------------------------------------------------------------------------------

799          KK   CP09B
800          KM     Combine hydrographs from 509B and RTA59B
801          KO                                     21
802          HC       2
             *

803          KK   509A1   BASIN
804          KM   Sub-Basin   509A1
805          KM
806          KM      The Phoenix Mountain S-Graph is used for this basin.
807          KM
808          BA   0.193
809          LG    0.14    0.38    6.40    0.15       5
810          UI      23      24      23      56      82     107     137     156     171     181
811          UI     222     266     242     178     154     137     132     120     113     110
812          UI      95      90      83      72      64      60      55      52      51      45
813          UI      37      36      29      30      26      25      25      19      18      17
814          UI      19      13      11      12      11      11      12      11       4       4
815          UI       5       0       0       0       0       0       0       0       0       0
816          UI       0       0       0       0       0       0       0       0       0       0
817          UI       0       0       0       0       0       0       0       0       0       0
818          UI       0       0       0       0       0       0       0       0       0       0
819          UI       0       0       0       0       0       0       0       0       0       0
820          UI       0       0       0       0       0       0       0       0       0       0
821          UI       0       0       0       0       0       0       0       0       0       0
             *
1                                          HEC-1 INPUT                                                PAGE 20

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

822          KK  RTA1A2   ROUTE   REACH
823          KM   Normal depth channel route from 509A1 to 509A2
824          RS       1    FLOW      -1
825          RC   0.070   0.040   0.070    1427  0.0234 2464.80
826          RX     0.0    33.0    66.0    86.0   114.0   120.0   135.0   177.0
827          RY  2464.0  2463.7  2463.2  2462.8  2463.2  2463.8  2464.0  2464.8
             *

828          KK   509A2   BASIN
829          KM   Sub-Basin   509A2
```

```
830          KM
831          KM      The Phoenix Mountain S-Graph is used for this basin.
832          KM
833          BA   0.128
834          LG    0.13    0.36    6.80    0.12       6
835          UI      17      18      21      51      72      94     109     130     137     163
836          UI     210     155     119     107      98      93      84      78      70      66
837          UI      57      51      45      42      38      38      32      28      24      22
838          UI      20      19      19      14      13      13      13       9       8       9
839          UI       8       9       7       3       3       4       3       3       3       4
840          UI       3       0       0       0       0       0       0       0       0       0
841          UI       0       0       0       0       0       0       0       0       0       0
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          UI       0       0       0       0       0       0       0       0       0       0
845          UI       0       0       0       0       0       0       0       0       0       0
846          UI       0       0       0       0       0       0       0       0       0       0
             *

847          KK  DRC2A2
848          KM        RETURN DIVERT FROM 511C2
849          DR  DIC2A2
             *

850          KK  RTC2A2   ROUTE   REACH
851          KM   Normal depth channel route from 511C2 to 509A2
852          RS       4    FLOW      -1
853          RC   0.070   0.040   0.070    6045  0.0218 2520.00
854          RX     0.0   147.0   228.3   252.5   257.8   262.8   282.7   348.4
855          RY  2502.0  2500.6  2500.0  2498.0  2497.6  2498.0  2500.0  2520.0
             *

856          KK  CP09A2
857          KM     Combine routed hydrograph from 511E4 with runoff from 509A2
858          HC       3
             *

859          KK  RTA2A4   ROUTE   REACH
860          KM   Normal depth channel route from 509A2 to 509A3
861          RS       2    FLOW      -1
862          RC   0.070   0.040   0.070    2604  0.0384 2426.00
863          RX     0.0   103.0   187.0   344.0   439.0   505.0   563.0   596.0
864          RY  2422.0  2418.0  2417.4  2417.3  2418.0  2416.4  2422.0  2426.0
             *
```



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

865          KK   509A3   BASIN
866          KM   Sub-Basin   509A3
867          KM
868          KM      The Phoenix Mountain S-Graph is used for this basin.
869          KM
870          BA   0.162
871          LG    0.14    0.38    6.40    0.15       4
872          UI      25      25      46      83     127     154     178     202     244     288
873          UI     196     161     144     134     122     109     103      88      78      67
874          UI      60      56      54      44      39      32      30      27      28      20
875          UI      19      19      16      12      12      12      12      10       4       5
876          UI       5       5       4       5       5       4       5       5       4       5
877          UI       0       0       0       0       0       0       0       0       0       0
878          UI       0       0       0       0       0       0       0       0       0       0
879          UI       0       0       0       0       0       0       0       0       0       0
880          UI       0       0       0       0       0       0       0       0       0       0
881          UI       0       0       0       0       0       0       0       0       0       0
882          UI       0       0       0       0       0       0       0       0       0       0
883          UI       0       0       0       0       0       0       0       0       0       0
             *

884          KK  RTA3A4   ROUTE   REACH
885          KM   Normal depth channel route from 509A3 to 509A4
886          RS       1    FLOW      -1
887          RC   0.070   0.040   0.070     717  0.0167 2406.00
888          RX     0.0    69.0   124.0   175.0   252.0   303.0   342.0   363.0
889          RY  2404.8  2404.0  2403.5  2402.8  2403.6  2403.0  2404.0  2406.0
             *

890          KK   509A4   BASIN
891          KM   Sub-Basin   509A4
892          KM
893          KM      The Phoenix Mountain S-Graph is used for this basin.
894          KM
895          BA   0.062
896          LG    0.15    0.36    6.80    0.13       1
897          UI      16      32      72     106     139     175     111      95      79      67
898          UI      56      44      37      33      24      20      18      14      12       9
```

```
 899        UI       7       8       4       3       3       4       3       3       3       3
 900        UI       0       0       0       0       0       0       0       0       0       0
 901        UI       0       0       0       0       0       0       0       0       0       0
 902        UI       0       0       0       0       0       0       0       0       0       0
 903        UI       0       0       0       0       0       0       0       0       0       0
 904        UI       0       0       0       0       0       0       0       0       0       0
 905        UI       0       0       0       0       0       0       0       0       0       0
 906        UI       0       0       0       0       0       0       0       0       0       0
 907        UI       0       0       0       0       0       0       0       0       0       0
 908        UI       0       0       0       0       0       0       0       0       0       0
            *
1                                        HEC-1 INPUT                                          PAGE 22

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


 909        KK  CP09A4
 910        KM     Combine hydrographs from 509A4, RTA2A4, RTA3A4
 911        HC       3
            *
            * MODIFICATION STARTS
            *

 912        KK  RTA4A6   ROUTE   REACH
 913        KM   Normal depth channel route from CP509A4 to 509A6
 914        RS       2    FLOW      -1
 915        RC   0.070   0.040   0.070    1778  0.0185 2382.00
 916        RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
 917        RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
            *
            *

 918        KK  DRA5A6
 919        KM        RETURN DIVERT FROM 509A5
 920        DR   DIA5S
            *

 921        KK  RTA5A6   ROUTE   REACH
 922        KM   Normal depth channel route from 509A5 to 509A6
 923        RS       2    FLOW      -1
 924        RC   0.070   0.040   0.070    1778  0.0185 2382.00
 925        RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
 926        RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
            *

 927        KK   509A6   BASIN
 928        KM   Sub-Basin   509A6
 929        KM
 930        KM      The Phoenix Mountain S-Graph is used for this basin.
 931        KM
 932        BA   0.032
 933        KO                                      21
 934        LG    0.15    0.32    7.60    0.10       0
 935        UI       9      27      55      73     109      69      54      46      38      28
 936        UI      24      19      14      11       9       8       6       4       4       2
 937        UI       2       2       2       2       2       0       0       0       0       0
 938        UI       0       0       0       0       0       0       0       0       0       0
 939        UI       0       0       0       0       0       0       0       0       0       0
 940        UI       0       0       0       0       0       0       0       0       0       0
 941        UI       0       0       0       0       0       0       0       0       0       0
 942        UI       0       0       0       0       0       0       0       0       0       0
 943        UI       0       0       0       0       0       0       0       0       0       0
            *

 944        KK  CP09A6
 945        KM     Combine hydrographs from RTA4A6, RTA5A6, 509A6
 946        HC       3
            *
            * END OF MODIFICATION
            *
1                                        HEC-1 INPUT                                          PAGE 23

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


 947        KK    509D   BASIN
 948        KM   Sub-Basin   509D
 949        KM
 950        KM      The Phoenix Mountain S-Graph is used for this basin.
 951        KM
 952        BA   0.382
 953        KO                                      21
 954        LG    0.14    0.40    6.00    0.17       4
 955        UI      31      32      31      31      50      89     108     133     158     184
 956        UI     201     216     229     245     263     292     348     391     308     250
 957        UI     213     202     191     181     172     169     158     149     148     132
 958        UI     126     125     113     105     101      88      81      80      76      72
```

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 959          UI      73      66      65      60      51      52      45      39      40      41
 960          UI      34       0       0       0       0       0       0       0       0       0
 961          UI       0       0       0       0       0       0       0       0       0       0
 962          UI       0       0       0       0       0       0       0       0       0       0
 963          UI       0       0       0       0       0       0       0       0       0       0
              *
              * ******************************************************************************
              * ****************************     Major Basin 500    ************************
              * ******************************************************************************
              *

 964          KK    500A   BASIN
 965          KM   Sub-Basin   500A
 966          KM
 967          KM      The Phoenix Mountain S-Graph is used for this basin.
 968          KM
 969          BA   0.204
 970          LG    0.15    0.37    5.20    0.25       1
 971          UI      28      30      41      89     124     167     189     221     235     298
 972          UI     338     215     184     172     155     142     137     120     110      99
 973          UI      85      75      70      65      59      54      46      38      37      33
 974          UI      31      30      21      22      22      17      14      15      13      14
 975          UI      15       5       6       5       6       5       6       5       6       5
 976          UI       6       0       0       0       0       0       0       0       0       0
              *

 977          KK    RTAB   ROUTE   REACH
 978          KM   Normal depth channel route from 500A to 500B
 979          RS       4    FLOW      -1
 980          RC   0.070   0.040   0.070    6187  0.0283 2261.00
 981          RX   822.0  1013.0  1035.0  1045.0  1049.0  1053.0  1076.0  1573.0
 982          RY  2261.0  2159.2  2158.9  2156.6  2156.8  2158.9  2159.0  2261.0
              *

 983          KK    500B   BASIN
 984          KM   Sub-Basin   500B
 985          KM
 986          KM      The Phoenix Mountain S-Graph is used for this basin.
 987          KM
 988          BA   0.192
 989          LG    0.12    0.37    5.30    0.22       8
 990          UI      20      20      20      32      62      77      98     121     133     143
1                                          HEC-1 INPUT                                          PAGE 24

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

 991          UI     161     171     206     250     196     149     133     122     116     112
 992          UI     102      95      91      84      79      73      66      59      54      49
 993          UI      48      48      42      41      34      33      27      26      26      22
 994          UI      23      21      18      16      15      16      15      11      10      10
 995          UI      10       0       0       0       0       0       0       0       0       0
 996          UI       0       0       0       0       0       0       0       0       0       0
 997          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 998          KK  CP500B
 999          KM     Combine routed hydrograph from 500A with runoff from 500B
1000          KO                                      21
1001          HC       2
              *
1002          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    15       511A1
                 .
                 .
    43           .       511A2
                 .           V
                 .           V
    58           .      RTA2A3
                 .           .
                 .           .
    64           .           .       511A3
                 .           .           .
                 .           .           .
    86       CP11A.......................
                 V
                 V
    89       RTA1D
                 .
                 .
```

```
 95          .        511D
             .           .
             .           .
111       CP11D............
             .
             .
114          .       511B4
             .           .
             .           .
129          .           .       511B1
             .           .           .
             .           .           .
144          .           .           .       511B2
             .           .           .           .
             .           .           .           .
166          .           .      CPB1B2............
             .           .           V
             .           .           V
169          .           .      RT12B4
             .           .           .
             .           .           .
175          .           .           .       511B3
             .           .           .           V
             .           .           .           V
197          .           .           .      RTB3B4
             .           .           .           .
             .           .           .           .
203          .       CP11B........................
             .           V
             .           V
206          .       RTB4D
             .           .
             .           .
212       CP11DF............
             V
             V
215        RTDF
             .
             .
221          .        511F
             .           .
             .           .
233       CP11F............
             .
             .
236          .       511C1
             .           .
             .           .
258          .           .-------> DIC1C4
256          .      DIC1E2
             .           V
             .           V
261          .      RTC1E2
             .           .
             .           .
267          .           .       511E1
             .           .           V
             .           .           V
287          .           .      RTE1E2
             .           .           .
             .           .           .
293          .           .           .       511E2
             .           .           .           .
             .           .           .           .
313          .           .      CPE1E2............
             .           .           .
             .           .           .
316          .           .           .       511C4
             .           .           .           .
             .           .           .           .
338          .           .           .           .           .<------- DIC1C4
336          .           .           .           .      DRC1C4
             .           .           .           .           V
             .           .           .           .           V
339          .           .           .           .      RTC1C4
             .           .           .           .           .
             .           .           .           .           .
345          .           .           .      CP11C4............
             .           .           .           .
             .           .           .           .
350          .           .           .           .-------> DIC4C5
348          .           .           .      DIC4E2
             .           .           .           V
             .           .           .           V
353          .           .           .      RTC4E2
             .           .           .           .
             .           .           .           .
```

```
359          .      CP11E2.......................
             .           .
             .           .
362          .           .       511C5
             .           .           .
             .           .           .
384          .           .           .           .<-------  DIC4C5
382          .           .           .      DRC4C5
             .           .           .           V
             .           .           .           V
385          .           .           .      RTC4C5
             .           .           .           .
             .           .           .           .
391          .           .           .           .       511C3
             .           .           .           .           V
             .           .           .           .           V
411          .           .           .           .      RTC3C5
             .           .           .           .           .
             .           .           .           .           .
417          .           .           .           .           .       511C2
             .           .           .           .           .           .
             .           .           .           .           .           .
439          .           .           .           .           .           .-------> DIC2A2
437          .           .           .           .           .      DIC2C5
             .           .           .           .           .           V
             .           .           .           .           .           V
442          .           .           .           .           .      RTC2C5
             .           .           .           .           .           .
             .           .           .           .           .           .
448          .           .      CP11C5.................................
             .           .           .
             .           .           .
453          .           .           .-------> DIC5C6
451          .           .      DIC5E2
             .           .           V
             .           .           V
458          .           .      RTC5E2
             .           .           .
             .           .           .
464          .      CP11EF............
             .           .
             .           .
467       CPEF............
             V
             V
470     RTEFC8
             .
             .
476          .       511C8
             .           .
             .           .
499     CP11C8............
             V
             V
502     RTC8C7
             .
             .
508          .       511C7
             .           .
             .           .
531          .           .       511C6
             .           .           .
             .           .           .
556          .           .           .           .<-------  DIC5C6
554          .           .           .      DRC5C6
             .           .           .           V
             .           .           .           V
557          .           .           .      RTC5C6
             .           .           .           .
             .           .           .           .
563          .           .      CP11C6............
             .           .           V
             .           .           V
566          .           .      RTC6C7
             .           .           .
             .           .           .
572     CP11C7........................
             V
             V
575      RTC7H
             .
             .
582          .        511H
             .           .
             .           .
605      CP11H............
             V
```

```
                V
608        RTHG4
                .
                .
614             .        511G1
                .            V
                .            V
631             .       RTG1G2
                .            .
                .            .
637             .            .       511G2
                .            .           .
                .            .           .
654             .       CP11G2............
                .            V
                .            V
657             .       RTG2G4
                .            .
                .            .
662             .            .       511G3
                .            .           V
                .            .           V
679             .            .      RTG3G4
                .            .           .
                .            .           .
685             .            .           .       511G4
                .            .           .           .
                .            .           .           .
702             .       CPG_G4........................
                .            .
                .            .
705        CP11G4............
                V
                V
708        RTG4I
                .
                .
713             .         511I
                .            .
                .            .
727        CP11I............
                .
                .
731             .         510A
                .            .
                .            .
750             .            .       509A5
                .            .           .
                .            .           .
771             .            .           .-------->   DIA5S
769             .            .      DIA59B
                .            .           V
                .            .           V
774             .            .      RTA59B
                .            .           .
                .            .           .
780             .            .           .        509B
                .            .           .           .
                .            .           .           .
799             .            .       CP09B............
                .            .           .
                .            .           .
803             .            .           .       509A1
                .            .           .           V
                .            .           .           V
822             .            .           .      RTA1A2
                .            .           .           .
                .            .           .           .
828             .            .           .           .       509A2
                .            .           .           .           .
                .            .           .           .           .
849             .            .           .           .           .           .<-------  DIC2A2
847             .            .           .           .           .      DRC2A2
                .            .           .           .           .           V
                .            .           .           .           .           V
850             .            .           .           .           .      RTC2A2
                .            .           .           .           .           .
                .            .           .           .           .           .
856             .            .           .      CP09A2........................
                .            .           .           V
                .            .           .           V
859             .            .           .      RTA2A4
                .            .           .           .
                .            .           .           .
865             .            .           .           .       509A3
                .            .           .           .           V
                .            .           .           .           V
```

```
884          .          .          .          .      RTA3A4
             .          .          .          .          .
             .          .          .          .          .
890          .          .          .          .          .      509A4
             .          .          .          .          .          .
             .          .          .          .          .          .
909          .          .          .     CP09A4.......................
             .          .          .          V
             .          .          .          V
912          .          .          .     RTA4A6
             .          .          .          .
             .          .          .          .
920          .          .          .          .          .<-------   DIA5S
918          .          .          .          .      DRA5A6
             .          .          .          .          V
             .          .          .          .          V
921          .          .          .          .      RTA5A6
             .          .          .          .          .
             .          .          .          .          .
927          .          .          .          .          .      509A6
             .          .          .          .          .          .
             .          .          .          .          .          .
944          .          .          .     CP09A6.......................
             .          .          .          .
             .          .          .          .
947          .          .          .          .        509D
             .          .          .          .          .
             .          .          .          .          .
964          .          .          .          .          .        500A
             .          .          .          .          .          V
             .          .          .          .          .          V
977          .          .          .          .          .        RTAB
             .          .          .          .          .          .
             .          .          .          .          .          .
983          .          .          .          .          .          .        500B
             .          .          .          .          .          .          .
             .          .          .          .          .          .          .
998          .          .          .          .          .      CP500B............
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   30AUG06  TIME  13:22:18  *                                    *          (916) 756-1104              *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

```
Project ID: S_24EX - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_24EX.DAT
MODEL:      100-year, 24-hour Existing Condition Model
DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003

*** Modified South Watershed Model: Subbasin Added: 509A6 ***
                                                       DATE REVISED: 5/06/05
*** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
*** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
                                                       LAST UPDATE:  8/30/06


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

   IT          HYDROGRAPH TIME DATA
                      NMIN          2  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       1200  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME       1558  ENDING TIME
                     ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL     .03 HOURS
                     TOTAL TIME BASE   39.97 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


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


          **************
          *            *
 727 KK   *     CP11I  *
          *            *
          **************

 729 KO         OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       .033  TIME INTERVAL IN HOURS


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


          **************
          *            *
 731 KK   *      510A  *        BASIN
          *            *
          **************

 737 KO         OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       .033  TIME INTERVAL IN HOURS


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


          **************
          *            *
 799 KK   *     CP09B  *
          *            *
          **************

 801 KO         OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       1200  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       .033  TIME INTERVAL IN HOURS


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


          **************
          *            *
 927 KK   *     509A6  *        BASIN
          *            *
          **************

 933 KO         OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
```

```
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 947 KK     *     509D   *        BASIN
            *            *
            **************

 953 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 998 KK     *   CP500B   *
            *            *
            **************

1000 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM    TIME OF
         OPERATION        STATION    FLOW    PEAK                                           AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

         HYDROGRAPH AT
+                          511A1     382.   12.23          46.         12.          7.       .29

         HYDROGRAPH AT
+                          511A2     109.   12.10           9.          2.          1.       .06

         ROUTED TO
+                         RTA2A3      80.   12.30           9.          2.          1.       .06
+                                                                                          2657.95      12.30

         HYDROGRAPH AT
+                          511A3     391.   12.23          46.         12.          7.       .29

         3 COMBINED AT
+                          CP11A     849.   12.23         102.         25.         15.       .65

         ROUTED TO
+                          RTA1D     732.   12.53         102.         25.         15.       .65
+                                                                                           100.37      12.53

         HYDROGRAPH AT
+                           511D     190.   12.17          21.          5.          3.       .12

         2 COMBINED AT
+                          CP11D     824.   12.50         123.         31.         18.       .77

         HYDROGRAPH AT
+                          511B4     337.   12.13          37.         10.          6.       .19
```

```
          HYDROGRAPH AT
+                     511B1      616.  12.40      92.      24.      14.      .58
          HYDROGRAPH AT
+                     511B2      272.  12.30      35.       9.       5.      .22
          2 COMBINED AT
+                    CPB1B2      874.  12.37     127.      32.      20.      .81
          ROUTED TO
+                    RT12B4      811.  12.53     127.      32.      20.      .81
+                                                                        2575.86     12.53
          HYDROGRAPH AT
+                     511B3      143.  12.13      14.       3.       2.      .08
          ROUTED TO
+                    RTB3B4      122.  12.27      14.       3.       2.      .08
+                                                                        2561.71     12.27
          3 COMBINED AT
+                      CP11B     1021.  12.50     178.      46.      28.     1.08
          ROUTED TO
+                     RTB4D     1019.  12.50     178.      46.      28.     1.08
+                                                                        2532.83     12.50
          2 COMBINED AT
+                     CP11DF    1844.  12.50     300.      77.      46.     1.85
          ROUTED TO
+                      RTDF     1815.  12.60     300.      77.      46.     1.85
+                                                                         101.95     12.60
          HYDROGRAPH AT
+                      511F      265.  12.13      27.       7.       4.      .16
          2 COMBINED AT
+                     CP11F     1888.  12.60     327.      84.      50.     2.00
          HYDROGRAPH AT
+                     511C1      387.  12.30      50.      13.       8.      .33
          DIVERSION TO
+                    DIC1C4      201.  12.30      26.       6.       4.      .33
          HYDROGRAPH AT
+                    DIC1E2      186.  12.30      24.       6.       4.      .33
          ROUTED TO
+                    RTC1E2      142.  12.80      24.       6.       4.      .33
+                                                                        2496.56     12.80
          HYDROGRAPH AT
+                     511E1      364.  12.27      45.      11.       7.      .30
          ROUTED TO
+                    RTE1E2      307.  12.53      45.      11.       7.      .30
+                                                                        2496.91     12.53
          HYDROGRAPH AT
+                     511E2      342.  12.30      46.      12.       7.      .28
          2 COMBINED AT
+                    CPE1E2      586.  12.43      92.      23.      14.      .57
          HYDROGRAPH AT
+                     511C4       46.  12.03       3.       1.       0.      .02
          HYDROGRAPH AT
+                    DRC1C4      201.  12.30      26.       6.       4.      .00
          ROUTED TO
+                    RTC1C4      194.  12.37      26.       6.       4.      .00
+                                                                        2599.14     12.37
          2 COMBINED AT
+                    CP11C4      202.  12.33      29.       7.       4.      .02
          DIVERSION TO
+                    DIC4C5      140.  12.33      21.       5.       3.      .02
          HYDROGRAPH AT
+                    DIC4E2       62.  12.33       8.       2.       1.      .02
          ROUTED TO
+                    RTC4E2       42.  12.83       8.       2.       1.      .02
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+                                                                                                  2496.27      12.83

        3 COMBINED AT
+                       CP11E2     661.   12.47        124.        31.        19.       .92

        HYDROGRAPH AT
+                        511C5     195.   12.13         19.         5.         3.       .11

        HYDROGRAPH AT
+                       DRC4C5     140.   12.33         21.         5.         3.       .00

        ROUTED TO
+                       RTC4C5     133.   12.47         21.         5.         3.       .00
+                                                                                                  2526.67      12.47

        HYDROGRAPH AT
+                        511C3     217.   12.17         22.         6.         3.       .14

        ROUTED TO
+                       RTC3C5     198.   12.30         22.         6.         3.       .14
+                                                                                                  2526.92      12.30

        HYDROGRAPH AT
+                        511C2     434.   12.33         59.        15.         9.       .39

        DIVERSION TO
+                       DIC2A2     167.   12.33         21.         5.         3.       .39

        HYDROGRAPH AT
+                       DIC2C5     267.   12.33         38.         9.         6.       .39

        ROUTED TO
+                       RTC2C5     244.   12.50         38.         9.         6.       .39
+                                                                                                  2552.60      12.50

        4 COMBINED AT
+                       CP11C5     626.   12.40        100.        25.        15.       .64

        DIVERSION TO
+                       DIC5C6     448.   12.40         71.        18.        11.       .64

        HYDROGRAPH AT
+                       DIC5E2     215.   12.40         29.         7.         4.       .64

        ROUTED TO
+                       RTC5E2     171.   12.50         29.         7.         4.       .64
+                                                                                                  2496.63      12.50

        2 COMBINED AT
+                       CP11EF     830.   12.53        154.        39.        23.      1.56

        2 COMBINED AT
+                         CPEF    2712.   12.57        481.       122.        73.      3.57

        ROUTED TO
+                       RTEFC8    2678.   12.63        481.       122.        73.      3.57
+                                                                                                  2449.89      12.63

        HYDROGRAPH AT
+                        511C8     .88.   12.07          6.         2.         1.       .04

        2 COMBINED AT
+                       CP11C8    2681.   12.63        487.       124.        74.      3.61

        ROUTED TO
+                       RTC8C7    2680.   12.63        487.       124.        74.      3.61
+                                                                                                  2357.65      12.63

        HYDROGRAPH AT
+                        511C7     182.   12.17         21.         6.         3.       .12

        HYDROGRAPH AT
+                        511C6      68.   12.10          6.         2.         1.       .04

        HYDROGRAPH AT
+                       DRC5C6     448.   12.27         71.        18.        11.       .00

        ROUTED TO
+                       RTC5C6     406.   12.63         70.        18.        11.       .00
+                                                                                                  2489.67      12.63

        2 COMBINED AT
+                       CP11C6     417.   12.63         77.        19.        12.       .04

        ROUTED TO
+                       RTC6C7     409.   12.67         77.        19.        12.       .04
+                                                                                                  2446.81      12.67
```

```
          3 COMBINED AT
+                        CP11C7     3149.   12.63       585.       148.        89.      3.76
          ROUTED TO
+                        RTC7H      3029.   12.80       569.       142.        85.      3.76
+                                                                                   2357.69      12.80
          HYDROGRAPH AT
+                         511H       333.   12.27        40.        10.         6.       .30
          2 COMBINED AT
+                        CP11H      3135.   12.80       609.       152.        92.      4.07
          ROUTED TO
+                        RTHG4      3129.   12.80       609.       152.        92.      4.07
+                                                                                   2330.23      12.80
          HYDROGRAPH AT
+                        511G1       505.   12.13        52.        14.         8.       .31
          ROUTED TO
+                       RTG1G2       417.   12.37        51.        14.         8.       .31
+                                                                                   2467.05      12.37
          HYDROGRAPH AT
+                        511G2       228.   12.17        24.         6.         4.       .16
          2 COMBINED AT
+                        CP11G2      594.   12.30        75.        20.        12.       .47
          ROUTED TO
+                       RTG2G4       565.   12.43        75.        20.        12.       .47
+                                                                                   2356.52      12.43
          HYDROGRAPH AT
+                        511G3       138.   12.17        14.         4.         2.       .10
          ROUTED TO
+                       RTG3G4       122.   12.40        14.         4.         2.       .10
+                                                                                   2376.02      12.40
          HYDROGRAPH AT
+                        511G4       348.   12.27        42.        11.         6.       .30
          3 COMBINED AT
+                        CPG_G4      975.   12.37       131.        34.        20.       .86
          2 COMBINED AT
+                        CP11G4     3612.   12.77       740.       186.       112.      4.93
          ROUTED TO
+                        RTG4I      3586.   12.83       740.       186.       112.      4.93
+                                                                                   2357.45      12.83
          HYDROGRAPH AT
+                         511I       254.   12.17        26.         7.         4.       .20
          2 COMBINED AT
+                        CP11I      3627.   12.83       766.       193.       116.      5.13
          HYDROGRAPH AT
+                         510A       866.   12.53       148.        40.        24.       .92
          HYDROGRAPH AT
+                        509A5        46.   12.03         3.         1.         1.       .02
          DIVERSION TO
+                        DIA5S         1.   12.03         0.         0.         0.       .02
          HYDROGRAPH AT
+                       DIA59B        45.   12.03         3.         1.         1.       .02
          ROUTED TO
+                       RTA59B        13.   13.70         3.         1.         1.       .02
+                                                                                   2180.22      13.70
          HYDROGRAPH AT
+                         509B       497.   12.63        80.        20.        12.       .65
          2 COMBINED AT
+                        CP09B       497.   12.63        83.        21.        12.       .67
          HYDROGRAPH AT
+                        509A1       265.   12.23        33.         9.         5.       .19
          ROUTED TO
```

```
+                    RTA1A2     250.  12.33      33.      9.      5.     .19
+                                                                          2463.88     12.33

        HYDROGRAPH AT
+                     509A2     195.  12.20      24.      6.      4.     .13

        HYDROGRAPH AT
+                    DRC2A2     167.  12.33      21.      5.      3.     .00

        ROUTED TO
+                    RTC2A2     145.  12.60      21.      5.      3.     .00
+                                                                          2499.10     12.60

        3 COMBINED AT
+                    CP09A2     475.  12.33      78.     20.     12.     .32

        ROUTED TO
+                    RTA2A4     453.  12.50      78.     20.     12.     .32
+                                                                          2417.66     12.50

        HYDROGRAPH AT
+                     509A3     258.  12.17      28.      7.      4.     .16

        ROUTED TO
+                    RTA3A4     249.  12.23      28.      7.      4.     .16
+                                                                          2403.67     12.23

        HYDROGRAPH AT
+                     509A4     133.  12.07      11.      3.      2.     .06

        3 COMBINED AT
+                    CP09A4     668.  12.33     117.     30.     18.     .55

        ROUTED TO
+                    RTA4A6     652.  12.43     117.     30.     18.     .55
+                                                                          2381.02     12.43

        HYDROGRAPH AT
+                    DRA5A6       1.  12.03       0.      0.      0.     .00

        ROUTED TO
+                    RTA5A6       1.  12.30       0.      0.      0.     .00
+                                                                          2378.00     12.30

        HYDROGRAPH AT
+                     509A6      75.  12.03       6.      1.      1.     .03

        3 COMBINED AT
+                    CP09A6     666.  12.43     123.     32.     19.     .58

        HYDROGRAPH AT
+                      509D     394.  12.40      59.     15.      9.     .38

        HYDROGRAPH AT
+                      500A     288.  12.17      31.      8.      5.     .20

        ROUTED TO
+                      RTAB     266.  12.37      31.      8.      5.     .20
+                                                                          2157.18     12.37

        HYDROGRAPH AT
+                      500B     233.  12.27      31.      8.      5.     .19

        2 COMBINED AT
+                    CP500B     493.  12.33      62.     16.     10.     .40


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

D.6.4 SOUTH BASIN

(D) 100-Year, 24-Hour Event, Future Condition Model

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
 *              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1               *                                    *         609 SECOND STREET            *
 *                                      *                                    *      DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   30AUG06  TIME  13:22:02  *                                    *          (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   Project ID: S_24FC - Major Basin: 01 - Return Period: 100 Years
    2           ID   RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_24FC.DAT
    3           ID   MODEL:      100-year, 24-hour Future Condition Model
    4           ID   DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003
    5           ID
    6           ID   *** Modified South Watershed Model: Subbasin Added: 509A6 ***
    7           ID                                                         DATE REVISED: 5/06/05
    8           ID   *** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
    9           ID   *** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
   10           ID                                                         LAST UPDATE:  8/30/06
   11           ID
                *
                *DIAGRAM
   12           IT       2                    1200
   13           IO       5
   14           IN      15
                *
                * ******************************************************************************
                * ******************************     Major Basin 511    ************************
                * ******************************************************************************
                *

   15           KK   511A1   BASIN
   16           KM   Sub-Basin   511A1
   17           KM
   18           KM      The Phoenix Mountain S-Graph is used for this basin.
   19           KM
   20           BA   0.294
   21           KM   RAINFALL DEPTH OF 4.58 WAS SPATIALLY REDUCED AS SHOWN BY THE PB RECORD
   22           KM   AN AREAL REDUCTION COEFFICIENT OF 0.952 WAS USED.
   23           PB   4.358
   24           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
   25           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
   26           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
   27           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
   28           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   29           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   30           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   31           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
   32           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
   33           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
   34           LG    0.10    0.39    6.20    0.14      15
   35           UI      38      38      38     111     153     198     236     274     290     332
   36           UI     427     426     285     249     226     208     200     182     167     156
   37           UI     139     124     110      96      91      90      80      72      64      53
   38           UI      48      48      41      41      36      29      29      29      22      19
   39           UI      19      18      19      19      12       7       8       7       7       8
   40           UI       7       0       0       0       0       0       0       0       0       0
   41           UI       0       0       0       0       0       0       0       0       0       0
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  42        UI      0       0       0       0       0       0       0       0       0       0
            *
1                                          HEC-1 INPUT                                          PAGE  2

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

  43        KK   511A2   BASIN
  44        KM   Sub-Basin   511A2
  45        KM
  46        KM      The Phoenix Mountain S-Graph is used for this basin.
  47        KM
  48        BA   0.059
  49        LG    0.10    0.40    6.00    0.15      15
  50        UI      14      26      56      87     111     146     131      89      77      67
  51        UI      57      49      36      34      29      22      19      16      13      11
  52        UI       9       7       7       6       3       3       2       3       3       3
  53        UI       2       3       0       0       0       0       0       0       0       0
  54        UI       0       0       0       0       0       0       0       0       0       0
  55        UI       0       0       0       0       0       0       0       0       0       0
  56        UI       0       0       0       0       0       0       0       0       0       0
  57        UI       0       0       0       0       0       0       0       0       0       0
            *

  58        KK  RTA2A3   ROUTE   REACH
  59        KM   Normal depth channel route from 511A2 to 511A3
  60        RS       2    FLOW      -1
  61        RC   0.070   0.040   0.070    3286  0.0158 2664.50
  62        RX     0.0   100.1   119.0   129.4   137.7   156.2   367.9   409.0
  63        RY  2664.5  2658.0  2657.5  2657.0  2657.2  2658.0  2662.0  2662.5
            *

  64        KK   511A3   BASIN
  65        KM   Sub-Basin   511A3
  66        KM
  67        KM      The Phoenix Mountain S-Graph is used for this basin.
  68        KM
  69        BA   0.294
  70        LG    0.10    0.39    6.20    0.14      15
  71        UI      39      41      48     118     166     214     252     298     314     374
  72        UI     484     356     271     248     226     211     193     181     159     153
  73        UI     132     115     103      96      89      87      74      64      55      49
  74        UI      47      45      43      31      31      31      28      20      19      19
  75        UI      20      19      17       8       7       8       7       8       7       8
  76        UI       8       0       0       0       0       0       0       0       0       0
  77        UI       0       0       0       0       0       0       0       0       0       0
  78        UI       0       0       0       0       0       0       0       0       0       0
  79        UI       0       0       0       0       0       0       0       0       0       0
  80        UI       0       0       0       0       0       0       0       0       0       0
  81        UI       0       0       0       0       0       0       0       0       0       0
  82        UI       0       0       0       0       0       0       0       0       0       0
  83        UI       0       0       0       0       0       0       0       0       0       0
  84        UI       0       0       0       0       0       0       0       0       0       0
  85        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

  86        KK   CP11A
  87        KM     Combine routed hydrograph from 511A2 with runoff from 511A1 and 511A3
  88        HC       3
            *

  89        KK   RTA1D   ROUTE   REACH
  90        KM   Normal depth channel route from CP11A to 511D
  91        RS       4    FLOW      -1
  92        RC   0.070   0.040   0.070    5358  0.0186  151.20
  93        RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
  94        RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
            *

  95        KK    511D   BASIN
  96        KM   Sub-Basin   511D
  97        KM
  98        KM      The Phoenix Mountain S-Graph is used for this basin.
  99        KM
 100        BA   0.121
 101        LG    0.10    0.36    6.80    0.11      15
 102        UI      19      20      40      70     107     123     145     169     213     193
 103        UI     137     119     106     100      89      78      74      63      51      49
 104        UI      45      40      35      30      24      24      21      20      15      15
 105        UI      15      10       9      10       9       9       4       4       4       3
 106        UI       4       4       3       4       4       4       3       4       0       0
 107        UI       0       0       0       0       0       0       0       0       0       0
 108        UI       0       0       0       0       0       0       0       0       0       0
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109          UI      0      0      0      0      0      0      0      0      0      0
110          UI      0      0      0      0      0      0      0      0      0      0
             *

111          KK   CP11D
112          KM     Combine routed hydrograph from CP11A with runoff from 511D
113          HC       2
             *

114          KK   511B4   BASIN
115          KM   Sub-Basin   511B4
116          KM
117          KM      The Phoenix Mountain S-Graph is used for this basin.
118          KM
119          BA   0.194
120          LG    0.10    0.36    6.80    0.11      27
121          UI      36      37     106     165     235     264     316     429     290     231
122          UI     208     183     167     150     123     105      94      84      75      62
123          UI      51      45      41      37      28      29      23      18      18      17
124          UI      15       8       6       7       7       7       7       7       7       7
125          UI       7       0       0       0       0       0       0       0       0       0
126          UI       0       0       0       0       0       0       0       0       0       0
127          UI       0       0       0       0       0       0       0       0       0       0
128          UI       0       0       0       0       0       0       0       0       0       0
             *
1                                          HEC-1 INPUT                                          PAGE  4
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

129          KK   511B1   BASIN
130          KM   Sub-Basin   511B1
131          KM
132          KM      The Phoenix Mountain S-Graph is used for this basin.
133          KM
134          BA   0.583
135          LG    0.10    0.38    6.40    0.13      19
136          UI      54      56      54      54     144     177     221     284     321     355
137          UI     395     408     442     518     599     658     502     401     360     338
138          UI     318     303     287     270     254     244     223     212     205     183
139          UI     169     148     138     134     131     124     115     116      92      89
140          UI      85      69      69      70      60      59      61      54      41      42
141          UI      42       0       0       0       0       0       0       0       0       0
142          UI       0       0       0       0       0       0       0       0       0       0
143          UI       0       0       0       0       0       0       0       0       0       0
             *

144          KK   511B2   BASIN
145          KM   Sub-Basin   511B2
146          KM
147          KM      The Phoenix Mountain S-Graph is used for this basin.
148          KM
149          BA   0.222
150          LG    0.10    0.38    6.40    0.13      15
151          UI      26      26      25      58      87     111     147     168     183     194
152          UI     233     272     306     221     178     158     156     141     128     127
153          UI     113     104     101      89      79      70      65      62      59      54
154          UI      51      44      40      33      33      30      28      28      23      20
155          UI      20      20      18      13      12      13      12      13      12      10
156          UI       5       0       0       0       0       0       0       0       0       0
157          UI       0       0       0       0       0       0       0       0       0       0
158          UI       0       0       0       0       0       0       0       0       0       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          UI       0       0       0       0       0       0       0       0       0       0
162          UI       0       0       0       0       0       0       0       0       0       0
163          UI       0       0       0       0       0       0       0       0       0       0
164          UI       0       0       0       0       0       0       0       0       0       0
165          UI       0       0       0       0       0       0       0       0       0       0
             *

166          KK  CPB1B2
167          KM     Combine hydrograph from 511B1 and 511B2
168          HC       2
             *

169          KK  RT12B4   ROUTE   REACH
170          KM   Normal depth channel route from CPB1B2 to 511B4
171          RS       3    FLOW      -1
172          RC   0.070   0.040   0.070    3973  0.0186 2582.00
173          RX     0.0    36.4    62.6    86.9    93.0   114.8   303.0   378.7
174          RY  2582.0  2578.0  2576.0  2574.0  2573.4  2574.0  2578.0  2582.0
             *
1                                          HEC-1 INPUT                                          PAGE  5
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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175          KK   511B3   BASIN
176          KM   Sub-Basin   511B3
177          KM
178          KM      The Phoenix Mountain S-Graph is used for this basin.
179          KM
180          BA   0.080
181          LG    0.10     0.37     6.60     0.12       15
182          UI      17       22       56       91      120      137      187      144      107       93
183          UI      84       74       62       53       43       39       36       27       21       21
184          UI      18       14       13       11        8        9        8        5        3        4
185          UI       3        3        3        3        4        3        0        0        0        0
186          UI       0        0        0        0        0        0        0        0        0        0
187          UI       0        0        0        0        0        0        0        0        0        0
188          UI       0        0        0        0        0        0        0        0        0        0
189          UI       0        0        0        0        0        0        0        0        0        0
190          UI       0        0        0        0        0        0        0        0        0        0
191          UI       0        0        0        0        0        0        0        0        0        0
192          UI       0        0        0        0        0        0        0        0        0        0
193          UI       0        0        0        0        0        0        0        0        0        0
194          UI       0        0        0        0        0        0        0        0        0        0
195          UI       0        0        0        0        0        0        0        0        0        0
196          UI       0        0        0        0        0        0        0        0        0        0
             *

197          KK  RTB3B4   ROUTE   REACH
198          KM   Normal depth channel route from 511B3 to 511B4
199          RS       2    FLOW      -1
200          RC   0.070   0.040   0.070    3126  0.0205 2565.00
201          RX     0.0    16.6    28.0    34.2    39.7    63.8   108.6   198.6
202          RY  2563.0  2562.0  2560.8  2560.3  2560.6  2562.0  2564.3  2565.0
             *

203          KK   CP11B
204          KM     Combine routed hydrographs from CPB1B2 and 511B3 with 511B4
205          HC       3
             *

206          KK   RTB4D   ROUTE   REACH
207          KM   Normal depth channel route from CP11B to RTB4D
208          RS       1    FLOW      -1
209          RC   0.070   0.040   0.070     521  0.0179 2536.00
210          RX     0.0    89.0   118.0   165.0   222.0   363.0   411.0   516.0
211          RY  2536.0  2534.0  2532.0  2531.5  2532.0  2532.2  2532.8  2534.0
             *

212          KK  CP11DF
213          KM     Combine routed hydrographs from CP11D and RTB4D
214          HC       2
             * ---------------------------------------------------------------------------
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

215          KK    RTDF   ROUTE   REACH
216          KM   Normal depth channel route from CP11DF to CP11F                                R
217          RS       3    FLOW      -1
218          RC   0.070   0.040   0.070    3664  0.0191  151.20
219          RX   900.0  1000.0  1035.0  1038.0  1048.0  1054.0  1120.0  1330.0
220          RY   151.2   100.0    99.5    99.0    99.0    99.6    99.7   151.2
             *

221          KK    511F   BASIN
222          KM   Sub-Basin   511F
223          KM
224          KM      The Phoenix Mountain S-Graph is used for this basin.
225          KM
226          BA   0.157
227          LG    0.10     0.38     6.40     0.13       15
228          UI      29       30       86      134      189      214      256      348      234      187
229          UI     168      148      135      122       99       85       76       68       61       51
230          UI      40       37       33       30       23       23       18       15       14       15
231          UI      12        6        6        5        6        5        6        6        5        6
232          UI       6        0        0        0        0        0        0        0        0        0
             *

233          KK   CP11F
234          KM     Combine routed hydrograph from CP11DF with runoff from 511F
235          HC       2
             *

236          KK   511C1   BASIN
237          KM   Sub-Basin   511C1
238          KM
239          KM      The Phoenix Mountain S-Graph is used for this basin.
```

```
 240          KM
 241          BA   0.329
 242          LG    0.10     0.40     6.00     0.15       15
 243          UI      38       39       37       85      130      165      217      248      272      289
 244          UI     344      404      454      327      263      235      230      208      191      187
 245          UI     169      154      151      131      117      105       95       91       89       80
 246          UI      75       65       59       48       50       44       41       43       34       29
 247          UI      30       29       27       19       18       19       19       18       19       14
 248          UI       7        0        0        0        0        0        0        0        0        0
 249          UI       0        0        0        0        0        0        0        0        0        0
 250          UI       0        0        0        0        0        0        0        0        0        0
 251          UI       0        0        0        0        0        0        0        0        0        0
 252          UI       0        0        0        0        0        0        0        0        0        0
 253          UI       0        0        0        0        0        0        0        0        0        0
 254          UI       0        0        0        0        0        0        0        0        0        0
 255          UI       0        0        0        0        0        0        0        0        0        0
              *
1                                          HEC-1 INPUT                                          PAGE  7

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

 256          KK  DIC1E2
 257          KM   DIVERT FLOW FROM 511C1 TO 511C4 AT NATURAL FLOW SPLIT
 258          DT  DIC1C4
 259          DI       0       75      150      225      300      480      650
 260          DQ       0       38       77      117      155      250      340
              *

 261          KK  RTC1E2   ROUTE   REACH
 262          KM   Normal depth channel route from 511C1 to 511E2
 263          RS       5    FLOW      -1
 264          RC   0.070   0.040   0.070    7085  0.0209 2506.00
 265          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
 266          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
              *

 267          KK   511E1   BASIN
 268          KM   Sub-Basin   511E1
 269          KM
 270          KM      The Phoenix Mountain S-Graph is used for this basin.
 271          KM
 272          BA   0.296
 273          LG    0.10     0.40     6.00     0.15       15
 274          UI      35       37       35       86      126      163      213      237      263      277
 275          UI     341      408      371      273      235      211      202      186      172      168
 276          UI     147      136      129      110       98       92       85       80       77       69
 277          UI      57       54       46       45       41       39       38       29       27       27
 278          UI      28       20       17       18       18       17       18       16        7        7
 279          UI       6        0        0        0        0        0        0        0        0        0
 280          UI       0        0        0        0        0        0        0        0        0        0
 281          UI       0        0        0        0        0        0        0        0        0        0
 282          UI       0        0        0        0        0        0        0        0        0        0
 283          UI       0        0        0        0        0        0        0        0        0        0
 284          UI       0        0        0        0        0        0        0        0        0        0
 285          UI       0        0        0        0        0        0        0        0        0        0
 286          UI       0        0        0        0        0        0        0        0        0        0
              *

 287          KK  RTE1E2   ROUTE   REACH
 288          KM   Normal depth channel route from 511E1 to 511E2
 289          RS       3    FLOW      -1
 290          RC   0.070   0.040   0.070    4907  0.0187 2506.00
 291          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
 292          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
              *

 293          KK   511E2   BASIN
 294          KM   Sub-Basin   511E2
 295          KM
 296          KM      The Phoenix Mountain S-Graph is used for this basin.
 297          KM
 298          BA   0.276
 299          LG    0.10     0.36     6.80     0.11       15
 300          UI      31       31       31       62      102      128      166      197      214      229
 301          UI     264      298      371      319      229      201      189      175      164      157
1                                          HEC-1 INPUT                                          PAGE  8

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

 302          UI     143      134      130      115      102       98       82       76       76       70
 303          UI      65       64       50       50       40       39       37       35       34       31
 304          UI      24       24       23       24       17       15       15       15       15       16
 305          UI      14        0        0        0        0        0        0        0        0        0
 306          UI       0        0        0        0        0        0        0        0        0        0
 307          UI       0        0        0        0        0        0        0        0        0        0
 308          UI       0        0        0        0        0        0        0        0        0        0
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309          UI       0       0       0       0       0       0       0       0       0       0
310          UI       0       0       0       0       0       0       0       0       0       0
311          UI       0       0       0       0       0       0       0       0       0       0
312          UI       0       0       0       0       0       0       0       0       0       0
             *

313          KK  CPE1E2
314          KM     Combine routed hydrographs from 511E1 with 511E2
315          HC       2
             *

316          KK   511C4   BASIN
317          KM   Sub-Basin   511C4
318          KM
319          KM      The Phoenix Mountain S-Graph is used for this basin.
320          KM
321          BA   0.020
322          LG    0.10    0.40    6.00    0.15      15
323          UI       8      28      51      76      55      40      32      25      17      14
324          UI      10       8       6       4       4       2       1       2       1       2
325          UI       0       0       0       0       0       0       0       0       0       0
326          UI       0       0       0       0       0       0       0       0       0       0
327          UI       0       0       0       0       0       0       0       0       0       0
328          UI       0       0       0       0       0       0       0       0       0       0
329          UI       0       0       0       0       0       0       0       0       0       0
330          UI       0       0       0       0       0       0       0       0       0       0
331          UI       0       0       0       0       0       0       0       0       0       0
332          UI       0       0       0       0       0       0       0       0       0       0
333          UI       0       0       0       0       0       0       0       0       0       0
334          UI       0       0       0       0       0       0       0       0       0       0
335          UI       0       0       0       0       0       0       0       0       0       0
             *

336          KK  DRC1C4
337          KM        RETURN DIVERT FROM 511C1
338          DR  DIC1C4
             *

339          KK  RTC1C4   ROUTE   REACH
340          KM   Normal depth channel route from 511C1 to 511C4
341          RS       1    FLOW      -1
342          RC   0.070   0.040   0.070    1058  0.0170 2605.30
343          RX     0.0   104.0   140.0   187.0   243.0   273.0   302.0   324.0
344          RY  2599.4  2599.6  2598.4  2598.3  2600.0  2602.0  2604.0  2605.3
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

345          KK  CP11C4
346          KM     Combine routed hydrographs from 511C1 with 511C4
347          HC       2
             *

348          KK  DIC4E2
349          KM   DIVERT FLOW FROM 511C4 TO 511C5 AT NATURAL FLOW SPLIT
350          DT  DIC4C5
351          DI       0      25     100     150     300     400     500
352          DQ       0      20      73     106     203     264     325
             *

353          KK  RTC4E2   ROUTE   REACH
354          KM   Normal depth channel route from 511C4 to 511E2
355          RS       4    FLOW      -1
356          RC   0.070   0.040   0.070    6075  0.0214 2506.00
357          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
358          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

359          KK  CP11E2
360          KM     Combine routed hydrographs from CPE1E2, RTC1E2,RTC4E2
361          HC       3
             *

362          KK   511C5   BASIN
363          KM   Sub-Basin   511C5
364          KM
365          KM      The Phoenix Mountain S-Graph is used for this basin.
366          KM
367          BA   0.110
368          LG    0.10    0.35    7.00    0.10      15
369          UI      22      25      68     110     144     167     210     239     152     129
370          UI     117     105      88      80      65      55      51      46      36      30
371          UI      26      24      21      16      17      11      11      10      11       5
372          UI       4       4       5       4       4       4       4       5       4       0
373          UI       0       0       0       0       0       0       0       0       0       0
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 374          UI       0       0       0       0       0       0       0       0       0       0
 375          UI       0       0       0       0       0       0       0       0       0       0
 376          UI       0       0       0       0       0       0       0       0       0       0
 377          UI       0       0       0       0       0       0       0       0       0       0
 378          UI       0       0       0       0       0       0       0       0       0       0
 379          UI       0       0       0       0       0       0       0       0       0       0
 380          UI       0       0       0       0       0       0       0       0       0       0
 381          UI       0       0       0       0       0       0       0       0       0       0
              *

 382          KK  DRC4C5
 383          KM        RETURN DIVERT FROM 511C4
 384          DR  DIC4C5
              *
1                                        HEC-1 INPUT                                          PAGE 10

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

 385          KK  RTC4C5   ROUTE   REACH
 386          KM   Normal depth channel route from 511C4 to 511C5
 387          RS       2    FLOW      -1
 388          RC   0.070   0.040   0.070    3182  0.0236 2532.20
 389          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
 390          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
              *

 391          KK   511C3   BASIN
 392          KM   Sub-Basin   511C3
 393          KM
 394          KM      The Phoenix Mountain S-Graph is used for this basin.
 395          KM
 396          BA   0.141
 397          LG    0.10    0.40    6.00    0.15      15
 398          UI      24      24      55      93     137     158     182     224     280     188
 399          UI     155     133     125     116     100      90      79      66      57      57
 400          UI      49      41      37      29      28      26      22      19      18      15
 401          UI      11      12      11      12       6       4       5       4       5       5
 402          UI       4       5       4       5       5       4       0       0       0       0
 403          UI       0       0       0       0       0       0       0       0       0       0
 404          UI       0       0       0       0       0       0       0       0       0       0
 405          UI       0       0       0       0       0       0       0       0       0       0
 406          UI       0       0       0       0       0       0       0       0       0       0
 407          UI       0       0       0       0       0       0       0       0       0       0
 408          UI       0       0       0       0       0       0       0       0       0       0
 409          UI       0       0       0       0       0       0       0       0       0       0
 410          UI       0       0       0       0       0       0       0       0       0       0
              *

 411          KK  RTC3C5   ROUTE   REACH
 412          KM   Normal depth channel route from 511C3 to 511C5
 413          RS       2    FLOW      -1
 414          RC   0.070   0.040   0.070    3234  0.0232 2532.20
 415          RX     0.0    17.5    62.9   117.1   128.2   142.8   157.3   170.1
 416          RY  2532.2  2532.0  2530.0  2526.0  2525.5  2526.0  2530.0  2530.2
              *

 417          KK   511C2   BASIN
 418          KM   Sub-Basin   511C2
 419          KM
 420          KM      The Phoenix Mountain S-Graph is used for this basin.
 421          KM
 422          BA   0.392
 423          LG    0.10    0.40    6.00    0.15      15
 424          UI      39      41      40      53     117     147     184     239     253     280
 425          UI     305     329     379     463     458     324     279     252     234     230
 426          UI     211     197     191     173     164     158     138     126     118     104
 427          UI      96      97      91      85      85      65      65      57      51      50
 428          UI      47      43      43      41      31      30      31      31      27      20
 429          UI      19       0       0       0       0       0       0       0       0       0
 430          UI       0       0       0       0       0       0       0       0       0       0
 431          UI       0       0       0       0       0       0       0       0       0       0
 432          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

 433          UI       0       0       0       0       0       0       0       0       0       0
 434          UI       0       0       0       0       0       0       0       0       0       0
 435          UI       0       0       0       0       0       0       0       0       0       0
 436          UI       0       0       0       0       0       0       0       0       0       0
              *

 437          KK  DIC2C5
 438          KM   DIVERT FLOW FROM 511C2 TO 509A2 AT NATURAL FLOW SPLIT
 439          DT  DIC2A2
 440          DI       0      25      70     150     300     400     500
```

```
441          DQ       0       7    22.5      51     111     152     197
             *

442          KK  RTC2C5   ROUTE   REACH
443          KM   Normal depth channel route from 511C2 to 511C5
444          RS       2    FLOW      -1
445          RC   0.070   0.040   0.070    3086  0.0230 2554.50
446          RX     0.0     9.3    49.5   114.2   122.3   140.1   149.6   197.3
447          RY  2554.5  2554.0  2552.2  2552.0  2551.8  2551.6  2552.0  2553.8
             *

448          KK  CP11C5
449          KM     Combine routed hydrographs from 511C5, RTC4C5, RTC3C5, RTC2C5
450          HC       4
             *

451          KK  DIC5E2
452          KM   DIVERT FLOW FROM 511C5 TO 511C6 AT NATURAL FLOW SPLIT
453          DT  DIC5C6
454          DI       0     100     150     200     250     300     350     400     450     500
455          DI     550     600     650     700     750
456          DQ       0      60      97     136     174     218     257     290     332     375
457          DQ     418     455     369     401     421
             *

458          KK  RTC5E2   ROUTE   REACH
459          KM   Normal depth channel route from 511C5 to 511E2
460          RS       2    FLOW      -1
461          RC   0.070   0.040   0.070    2668  0.0217 2506.00
462          RX     0.0   120.9   137.9   150.8   209.8   266.4   359.6   477.6
463          RY  2506.0  2500.0  2498.0  2497.0  2495.7  2496.7  2498.0  2502.0
             *

464          KK  CP11EF
465          KM     Combine hydrographs CP11E2 and RTC5E2
466          HC       2
             *

467          KK    CPEF
468          KM     Combine hydrographs from CP11EF and CP11F2
469          HC       2
             *
1                                        HEC-1 INPUT                                        PAGE 12

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

470          KK  RTEFC8   ROUTE   REACH
471          KM   Normal depth channel route from CPEF to CP11C8
472          RS       1    FLOW      -1
473          RC   0.070   0.040   0.070    1278  0.0141 2454.00
474          RX     0.0    86.0    91.9   125.2   207.6   319.0   482.9   605.1
475          RY  2454.0  2448.0  2447.0  2447.0  2448.0  2450.0  2451.0  2452.0
             *

476          KK   511C8   BASIN
477          KM   Sub-Basin   5118
478          KM
479          KM      The Phoenix Mountain S-Graph is used for this basin.
480          KM
481          BA   0.041
482          LG    0.10    0.37    5.20    0.21      15
483          UI      14      44      85     116     138      84      69      56      42      33
484          UI      27      18      16      12      10       6       7       3       3       3
485          UI       2       3       3       0       0       0       0       0       0       0
486          UI       0       0       0       0       0       0       0       0       0       0
487          UI       0       0       0       0       0       0       0       0       0       0
488          UI       0       0       0       0       0       0       0       0       0       0
489          UI       0       0       0       0       0       0       0       0       0       0
490          UI       0       0       0       0       0       0       0       0       0       0
491          UI       0       0       0       0       0       0       0       0       0       0
492          UI       0       0       0       0       0       0       0       0       0       0
493          UI       0       0       0       0       0       0       0       0       0       0
494          UI       0       0       0       0       0       0       0       0       0       0
495          UI       0       0       0       0       0       0       0       0       0       0
496          UI       0       0       0       0       0       0       0       0       0       0
497          UI       0       0       0       0       0       0       0       0       0       0
498          UI       0       0       0       0       0       0       0       0       0       0
             *

499          KK  CP11C8
500          KM     Combine routed hydrograph from CPEF with 511C8
501          HC       2
             *

502          KK  RTC8C7   ROUTE   REACH
503          KM   Normal depth channel route from CP11C8 to 511C7
```

```
 504          RS       1    FLOW      -1
 505          RC   0.070   0.040   0.070     547  0.0146 2460.00
 506          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
 507          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
              *

 508          KK   511C7   BASIN
 509          KM   Sub-Basin   511C7
 510          KM
 511          KM      The Phoenix Mountain S-Graph is used for this basin.
 512          KM
 513          BA   0.121
 514          LG    0.10     0.39     6.20     0.14       17
 515          UI      18       19       35       63       93      116      133      151      181      216
1                                                HEC-1 INPUT                                                PAGE 13

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

 516          UI     146      121      107      100       91       82       76       66       58       50
 517          UI      46       42       40       32       29       24       23       20       21       15
 518          UI      14       15       11        9        9        9        9        7        4        3
 519          UI       4        4        3        4        3        4        3        4        3        4
 520          UI       0        0        0        0        0        0        0        0        0        0
 521          UI       0        0        0        0        0        0        0        0        0        0
 522          UI       0        0        0        0        0        0        0        0        0        0
 523          UI       0        0        0        0        0        0        0        0        0        0
 524          UI       0        0        0        0        0        0        0        0        0        0
 525          UI       0        0        0        0        0        0        0        0        0        0
 526          UI       0        0        0        0        0        0        0        0        0        0
 527          UI       0        0        0        0        0        0        0        0        0        0
 528          UI       0        0        0        0        0        0        0        0        0        0
 529          UI       0        0        0        0        0        0        0        0        0        0
 530          UI       0        0        0        0        0        0        0        0        0        0
              *

 531          KK   511C6   BASIN
 532          KM   Sub-Basin   511C6
 533          KM
 534          KM      The Phoenix Mountain S-Graph is used for this basin.
 535          KM
 536          BA   0.035
 537          LG    0.10     0.35     7.00     0.10       15
 538          UI       9       14       34       51       66       87       78       52       47       38
 539          UI      35       29       21       21       16       14       10       10        8        6
 540          UI       6        4        4        4        2        1        2        2        1        2
 541          UI       2        1        0        0        0        0        0        0        0        0
 542          UI       0        0        0        0        0        0        0        0        0        0
 543          UI       0        0        0        0        0        0        0        0        0        0
 544          UI       0        0        0        0        0        0        0        0        0        0
 545          UI       0        0        0        0        0        0        0        0        0        0
 546          UI       0        0        0        0        0        0        0        0        0        0
 547          UI       0        0        0        0        0        0        0        0        0        0
 548          UI       0        0        0        0        0        0        0        0        0        0
 549          UI       0        0        0        0        0        0        0        0        0        0
 550          UI       0        0        0        0        0        0        0        0        0        0
 551          UI       0        0        0        0        0        0        0        0        0        0
 552          UI       0        0        0        0        0        0        0        0        0        0
 553          UI       0        0        0        0        0        0        0        0        0        0
              *

 554          KK  DRC5C6
 555          KM         RETURN DIVERT FROM 511C5
 556          DR  DIC5C6
              *

 557          KK  RTC5C6   ROUTE   REACH
 558          KM   Normal depth channel route from 511C5 to 511C6
 559          RS       2    FLOW      -1
 560          RC   0.070   0.040   0.070    2644  0.0155 2490.80
 561          RX     0.0    68.8   177.6   245.2   257.0   350.0   363.8   398.6
 562          RY  2490.0  2489.3  2488.8  2490.0  2489.0  2489.0  2490.0  2490.8
              *
1                                                HEC-1 INPUT                                                PAGE 14

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

 563          KK  CP11C6
 564          KM     Combine routed hydrograph from 511C6 and RTC5C6
 565          HC       2
              *
              *

 566          KK  RTC6C7   ROUTE   REACH
 567          KM   Normal depth channel route from 511C6 to 511C7
 568          RS       1    FLOW      -1
 569          RC   0.070   0.040   0.070    1801  0.0233 2450.10
```

```
570          RX     0.0    73.0    80.0    90.0    93.0    96.0   103.0   162.0
571          RY  2450.1  2448.0  2446.0  2444.0  2443.7  2444.0  2446.0  2448.0
             *

572          KK  CP11C7
573          KM     Combine routed hydrograph from CP11C8, 511C7, RTC6C7
574          HC       3
             *

575          KK   RTC7H   ROUTE   REACH
576          KM   Normal depth channel route from 511C7 to 511H
577          RS       4    FLOW      -1
578          RC   0.070   0.040   0.070    6348  0.0176 2460.00
579          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
580          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
581          RL                    0.62  2356.3
             *

582          KK    511H   BASIN
583          KM   Sub-Basin   511H
584          KM
585          KM      The Phoenix Mountain S-Graph is used for this basin.
586          KM
587          BA   0.303
588          LG    0.10    0.35    4.40    0.32      15
589          UI      37      38      38      99     140     189     229     261     285     307
590          UI     397     444     327     273     228     221     206     186     176     166
591          UI     146     136     125     105      95      91      87      80      74      61
592          UI      55      50      47      41      42      38      29      29      29      27
593          UI      19      18      19      19      18      19       9       7       7       8
594          UI       7       0       0       0       0       0       0       0       0       0
595          UI       0       0       0       0       0       0       0       0       0       0
596          UI       0       0       0       0       0       0       0       0       0       0
597          UI       0       0       0       0       0       0       0       0       0       0
598          UI       0       0       0       0       0       0       0       0       0       0
599          UI       0       0       0       0       0       0       0       0       0       0
600          UI       0       0       0       0       0       0       0       0       0       0
601          UI       0       0       0       0       0       0       0       0       0       0
602          UI       0       0       0       0       0       0       0       0       0       0
603          UI       0       0       0       0       0       0       0       0       0       0
604          UI       0       0       0       0       0       0       0       0       0       0
             *
1                                          HEC-1 INPUT                                          PAGE 15

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

605          KK   CP11H
606          KM     Combine routed hydrographs from RTC7H with 511H
607          HC       2
             *

608          KK   RTHG4   ROUTE   REACH
609          KM   Normal depth channel route from CPC7H TO 511G4
610          RS       1    FLOW      -1
611          RC   0.070   0.040   0.070     933  0.0209 2336.00
612          RX     0.0    44.0    71.0    80.0    90.0   101.0   143.0   154.0
613          RY  2336.0  2330.0  2324.0  2323.3  2324.0  2330.0  2334.0  2335.0
             *

614          KK   511G1   BASIN
615          KM   Sub-Basin   511G1
616          KM
617          KM      The Phoenix Mountain S-Graph is used for this basin.
618          KM
619          BA   0.310
620          LG    0.10    0.38    5.60    0.18      23
621          UI      57      60     170     263     374     423     505     686     463     370
622          UI     332     292     266     240     196     169     149     134     121     100
623          UI      80      73      65      60      44      46      37      28      29      28
624          UI      24      12      11      11      11      11      11      11      11      11
625          UI      12       0       0       0       0       0       0       0       0       0
626          UI       0       0       0       0       0       0       0       0       0       0
627          UI       0       0       0       0       0       0       0       0       0       0
628          UI       0       0       0       0       0       0       0       0       0       0
629          UI       0       0       0       0       0       0       0       0       0       0
630          UI       0       0       0       0       0       0       0       0       0       0
             *

631          KK  RTG1G2   ROUTE   REACH
632          KM   Normal depth channel route from 511G1 to 511G2
633          RS       3    FLOW      -1
634          RC   0.070   0.040   0.070    4246  0.0146 2472.00
635          RX    19.0    45.0    98.0   182.0   219.0   234.0   270.0   308.0
636          RY  2472.0  2470.0  2468.0  2466.0  2465.5  2466.0  2468.0  2472.0
             *
```

```
637          KK   511G2   BASIN
638          KM   Sub-Basin   511G2
639          KM
640          KM      The Phoenix Mountain S-Graph is used for this basin.
641          KM
642          BA   0.157
643          LG    0.10    0.37    5.30    0.20      15
644          UI      25      25      52      91     139     160     188     218     277     251
645          UI     178     154     137     130     116     102      96      81      66      63
646          UI      58      54      45      39      31      31      27      26      20      19
647          UI      19      13      12      12      13      11       5       5       5       5
648          UI       5       4       5       5       5       5       5       5       0       0
649          UI       0       0       0       0       0       0       0       0       0       0
650          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 16

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

651          UI       0       0       0       0       0       0       0       0       0       0
652          UI       0       0       0       0       0       0       0       0       0       0
653          UI       0       0       0       0       0       0       0       0       0       0
             *

654          KK  CP11G2
655          KM     Combine routed hydrographs from 511G1, 511G2 and CPC7H
656          HC       2
             *

657          KK  RTG2G4   ROUTE   REACH
658          RS       4    FLOW      -1
659          RC   0.070   0.040   0.070    5908  0.0190 2472.00
660          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
661          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

662          KK   511G3   BASIN
663          KM   Sub-Basin   511G3
664          KM
665          KM      The Phoenix Mountain S-Graph is used for this basin.
666          KM
667          BA   0.097
668          LG    0.10    0.36    5.00    0.23      15
669          UI      16      17      38      64      93     110     125     154     193     129
670          UI     107      92      85      80      69      62      54      45      39      40
671          UI      34      28      25      21      19      18      14      13      13      10
672          UI       8       8       8       7       5       3       3       3       3       3
673          UI       4       3       3       3       3       3       0       0       0       0
674          UI       0       0       0       0       0       0       0       0       0       0
675          UI       0       0       0       0       0       0       0       0       0       0
676          UI       0       0       0       0       0       0       0       0       0       0
677          UI       0       0       0       0       0       0       0       0       0       0
678          UI       0       0       0       0       0       0       0       0       0       0
             *

679          KK  RTG3G4   ROUTE   REACH
680          KM   Normal depth channel route from 511G3 to 511G4
681          RS       4    FLOW      -1
682          RC   0.070   0.040   0.070    5322  0.0231 2380.30
683          RX    34.0    65.0    84.0    98.0   105.0   131.0   166.0   173.0
684          RY  2380.0  2378.0  2376.0  2374.0  2376.0  2378.0  2380.0  2380.3
             *

685          KK   511G4   BASIN
686          KM   Sub-Basin   511G4
687          KM
688          KM      The Phoenix Mountain S-Graph is used for this basin.
689          KM
690          BA   0.298
691          LG    0.10    0.35    4.65    0.27      15
692          UI      36      38      37      97     138     186     225     256     281     302
693          UI     392     435     321     270     224     218     202     183     172     163
694          UI     145     133     123     103      94      90      85      79      73      60
695          UI      54      49      46      40      42      37      28      29      28      27
1                                          HEC-1 INPUT                                          PAGE 17

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

696          UI      18      19      18      18      19      18       9       7       7       7
697          UI       7       0       0       0       0       0       0       0       0       0
698          UI       0       0       0       0       0       0       0       0       0       0
699          UI       0       0       0       0       0       0       0       0       0       0
700          UI       0       0       0       0       0       0       0       0       0       0
701          UI       0       0       0       0       0       0       0       0       0       0
             *

702          KK  CPG_G4
703          KM     Combine routed hydrographs from RTG2G4, RTG3G4 and 511G4
```

```
704          HC       3
             *

705          KK  CP11G4
706          KM     Combine routed hydrographs from RTHG4 and CPG_G4
707          HC       2
             *

708          KK   RTG4I   ROUTE   REACH
709          RS       3    FLOW      -1
710          RC   0.070   0.040   0.070    4438  0.0361 2460.00
711          RX   950.0  1053.0  1139.0  1150.0  1177.0  1255.0  1302.0  1352.0
712          RY  2460.0  2357.0  2357.4  2356.4  2356.3  2357.8  2359.6  2460.0
             *

713          KK    511I   BASIN
714          KM   Sub-Basin   511I
715          KM
716          KM      The Phoenix Mountain S-Graph is used for this basin.
717          KM
718          BA   0.198
719          LG    0.10    0.35    4.10    0.38      15
720          UI      30      31      57     102     153     189     219     246     298     352
721          UI     240     197     175     164     149     134     125     107      96      81
722          UI      75      69      65      53      48      39      38      33      33      25
723          UI      23      24      18      15      15      15      15      11       6       6
724          UI       6       5       6       6       5       6       6       6       5       6
725          UI       0       0       0       0       0       0       0       0       0       0
726          UI       0       0       0       0       0       0       0       0       0       0
             *

727          KK   CP11I
728          KM     Combine routed hydrograph from RTG2I with runoff from 511I
729          KO                                      21
730          HC       2
             *
             *
             * ******************************************************************************
             * ****************************     Major Basin 510     ************************
             * ******************************************************************************
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

731          KK    510A   BASIN
732          KM   Sub-Basin   510A
733          KM
734          KM      The Phoenix Mountain S-Graph is used for this basin.
735          KM
736          BA   0.923
737          KO                                      21
738          LG    0.10    0.39    6.20    0.14      15
739          UI      65      68      65      66      67     140     187     239     267     312
740          UI     394     402     428     473     490     501     567     592     686     781
741          UI     799     598     519     454     425     410     391     368     367     345
742          UI     328     319     303     288     281     261     251     242     224     203
743          UI     196     172     168     166     160     150     154     140     137     136
744          UI     108       0       0       0       0       0       0       0       0       0
745          UI       0       0       0       0       0       0       0       0       0       0
746          UI       0       0       0       0       0       0       0       0       0       0
747          UI       0       0       0       0       0       0       0       0       0       0
748          UI       0       0       0       0       0       0       0       0       0       0
749          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
             * ******************************************************************************
             * ****************************     Major Basin 509     ************************
             * ******************************************************************************
             *

750          KK   509A5   BASIN
751          KM   Sub-Basin   509A5
752          KM
753          KM      The Phoenix Mountain S-Graph is used for this basin.
754          KM
755          BA   0.020
756          LG    0.10    0.36    5.10    0.22      15
757          UI       7      21      42      57      67      40      34      27      21      16
758          UI      13       9       8       6       5       3       3       1       2       1
759          UI       1       2       1       0       0       0       0       0       0       0
760          UI       0       0       0       0       0       0       0       0       0       0
761          UI       0       0       0       0       0       0       0       0       0       0
762          UI       0       0       0       0       0       0       0       0       0       0
763          UI       0       0       0       0       0       0       0       0       0       0
764          UI       0       0       0       0       0       0       0       0       0       0
```

```
765          UI       0       0       0       0       0       0       0       0       0       0
766          UI       0       0       0       0       0       0       0       0       0       0
767          UI       0       0       0       0       0       0       0       0       0       0
768          UI       0       0       0       0       0       0       0       0       0       0
             *

769          KK  DIA59B
770          KM   DIVERT FLOW FROM 509A5 TO 509A6 BY NATURAL FLOW SPLIT
771          DT   DIA5S
772          DI       0      75     150     225     308     480     650
773          DQ       0       2      15      30      50      95     140
             *
1                                          HEC-1 INPUT                                                PAGE 19

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

774          KK  RTA59B   ROUTE   REACH
775          KM   Normal depth channel route from 509A5 to 509B
776          RS      13    FLOW      -1
777          RC   0.070   0.040   0.070   18484  0.0233 2188.00
778          RX     0.0    61.0   150.0   160.0   164.0   174.0   266.0   290.0
779          RY  2184.6  2184.0  2182.0  2180.0  2179.8  2180.0  2186.0  2188.0
             *

780          KK    509B   BASIN
781          KM   Sub-Basin   509B
782          KM
783          KM      The Phoenix Mountain S-Graph is used for this basin.
784          KM
785          BA   0.654
786          LG    0.10    0.36    5.10    0.22      15
787          UI      43      45      44      43      45      64     126     142     167     192
788          UI     232     257     271     301     307     324     352     360     394     455
789          UI     505     545     452     340     325     295     276     265     261     249
790          UI     235     231     220     209     207     191     184     183     169     162
791          UI     154     140     134     124     116     110     110     104     101     104
792          UI      93       0       0       0       0       0       0       0       0       0
793          UI       0       0       0       0       0       0       0       0       0       0
794          UI       0       0       0       0       0       0       0       0       0       0
795          UI       0       0       0       0       0       0       0       0       0       0
796          UI       0       0       0       0       0       0       0       0       0       0
797          UI       0       0       0       0       0       0       0       0       0       0
798          UI       0       0       0       0       0       0       0       0       0       0
             * ---------------------------------------------------------------------------

799          KK   CP09B
800          KM     Combine hydrographs from 509B and RTA59B
801          KO                                      21
802          HC       2
             *

803          KK   509A1   BASIN
804          KM   Sub-Basin   509A1
805          KM
806          KM      The Phoenix Mountain S-Graph is used for this basin.
807          KM
808          BA   0.193
809          LG    0.10    0.38    6.40    0.13      15
810          UI      25      25      25      72     101     130     155     180     190     218
811          UI     280     281     186     164     148     137     130     121     109     102
812          UI      92      81      73      63      60      58      52      48      42      35
813          UI      32      31      27      27      23      19      19      20      14      12
814          UI      13      12      12      12       9       4       5       5       4       5
815          UI       5       0       0       0       0       0       0       0       0       0
816          UI       0       0       0       0       0       0       0       0       0       0
817          UI       0       0       0       0       0       0       0       0       0       0
818          UI       0       0       0       0       0       0       0       0       0       0
819          UI       0       0       0       0       0       0       0       0       0       0
820          UI       0       0       0       0       0       0       0       0       0       0
821          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

822          KK  RTA1A2   ROUTE   REACH
823          KM   Normal depth channel route from 509A1 to 509A2
824          RS       1    FLOW      -1
825          RC   0.070   0.040   0.070    1427  0.0234 2464.80
826          RX     0.0    33.0    66.0    86.0   114.0   120.0   135.0   177.0
827          RY  2464.0  2463.7  2463.2  2462.8  2463.2  2463.8  2464.0  2464.8
             *

828          KK   509A2   BASIN
829          KM   Sub-Basin   509A2
```

```
830          KM
831          KM      The Phoenix Mountain S-Graph is used for this basin.
832          KM
833          BA   0.128
834          LG    0.10     0.36     6.80     0.11       15
835          UI      18       18       26       56       78      104      119      139      147      187
836          UI     212      135      116      107       98       89       86       75       69       62
837          UI      53       47       45       40       38       34       29       23       24       20
838          UI      19       19       14       13       15       10        9        9        9        9
839          UI       9        3        4        3        3        4        3        4        3        4
840          UI       3        0        0        0        0        0        0        0        0        0
841          UI       0        0        0        0        0        0        0        0        0        0
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          UI       0        0        0        0        0        0        0        0        0        0
845          UI       0        0        0        0        0        0        0        0        0        0
846          UI       0        0        0        0        0        0        0        0        0        0
             *

847          KK  DRC2A2
848          KM        RETURN DIVERT FROM 511C2
849          DR  DIC2A2
             *

850          KK  RTC2A2   ROUTE   REACH
851          KM   Normal depth channel route from 511C2 to 509A2
852          RS       4    FLOW      -1
853          RC   0.070   0.040   0.070    6045  0.0218 2520.00
854          RX     0.0   147.0   228.3   252.5   257.8   262.8   282.7   348.4
855          RY  2502.0  2500.6  2500.0  2498.0  2497.6  2498.0  2500.0  2520.0
             *

856          KK  CP09A2
857          KM     Combine routed hydrograph from 511E4 with runoff from 509A2
858          HC       3
             *

859          KK  RTA2A4   ROUTE   REACH
860          KM   Normal depth channel route from 509A2 to 509A3
861          RS       2    FLOW      -1
862          RC   0.070   0.040   0.070    2604  0.0384 2426.00
863          RX     0.0   103.0   187.0   344.0   439.0   505.0   563.0   596.0
864          RY  2422.0  2418.0  2417.4  2417.3  2418.0  2416.4  2422.0  2426.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

865          KK   509A3   BASIN
866          KM   Sub-Basin   509A3
867          KM
868          KM      The Phoenix Mountain S-Graph is used for this basin.
869          KM
870          BA   0.162
871          LG    0.10     0.38     6.40     0.13       15
872          UI      27       28       63      107      156      184      209      257      322      215
873          UI     178      154      142      134      115      104       90       76       65       65
874          UI      57       48       41       35       31       31       25       21       21       17
875          UI      13       14       13       13        7        5        5        6        5        5
876          UI       5        5        5        6        5        5        0        0        0        0
877          UI       0        0        0        0        0        0        0        0        0        0
878          UI       0        0        0        0        0        0        0        0        0        0
879          UI       0        0        0        0        0        0        0        0        0        0
880          UI       0        0        0        0        0        0        0        0        0        0
881          UI       0        0        0        0        0        0        0        0        0        0
882          UI       0        0        0        0        0        0        0        0        0        0
883          UI       0        0        0        0        0        0        0        0        0        0
             *

884          KK  RTA3A4   ROUTE   REACH
885          KM   Normal depth channel route from 509A3 to 509A4
886          RS       1    FLOW      -1
887          RC   0.070   0.040   0.070     717  0.0167 2406.00
888          RX     0.0    69.0   124.0   175.0   252.0   303.0   342.0   363.0
889          RY  2404.8  2404.0  2403.5  2402.8  2403.6  2403.0  2404.0  2406.0
             *

890          KK   509A4   BASIN
891          KM   Sub-Basin   509A4
892          KM
893          KM      The Phoenix Mountain S-Graph is used for this basin.
894          KM
895          BA   0.062
896          LG    0.10     0.36     6.80     0.11       15
897          UI      17       41       86      124      170      162      108       92       76       63
898          UI      50       41       34       26       21       18       14       12        8        9
```

```
 899          UI       6       3       3       4       3       3       4       0       0       0
 900          UI       0       0       0       0       0       0       0       0       0       0
 901          UI       0       0       0       0       0       0       0       0       0       0
 902          UI       0       0       0       0       0       0       0       0       0       0
 903          UI       0       0       0       0       0       0       0       0       0       0
 904          UI       0       0       0       0       0       0       0       0       0       0
 905          UI       0       0       0       0       0       0       0       0       0       0
 906          UI       0       0       0       0       0       0       0       0       0       0
 907          UI       0       0       0       0       0       0       0       0       0       0
 908          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


 909          KK  CP09A4
 910          KM     Combine hydrographs from 509A4, RTA2A4, RTA3A4
 911          HC       3
              *
              * MODIFICATION STARTS
              *

 912          KK  RTA4A6   ROUTE   REACH
 913          KM   Normal depth channel route from CP509A4 to 509A6
 914          RS       2    FLOW      -1
 915          RC   0.070   0.040   0.070    1778  0.0185 2382.00
 916          RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
 917          RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
              *
              *

 918          KK  DRA5A6
 919          KM        RETURN DIVERT FROM 509A5
 920          DR   DIA5S
              *

 921          KK  RTA5A6   ROUTE   REACH
 922          KM   Normal depth channel route from 509A5 to 509A6
 923          RS       2    FLOW      -1
 924          RC   0.070   0.040   0.070    1778  0.0185 2382.00
 925          RX     0.0    84.4   120.0   123.0   125.0   130.5   135.7   193.0
 926          RY  2382.0  2380.0  2378.0  2377.8  2378.0  2379.0  2380.0  2382.0
              *

 927          KK   509A6   BASIN
 928          KM   Sub-Basin   509A6
 929          KM
 930          KM      The Phoenix Mountain S-Graph is used for this basin.
 931          KM
 932          BA   0.032
 933          KO                                      21
 934          LG    0.10    0.32    7.60    0.08      15
 935          UI      10      35      67      90     108      65      54      44      33      25
 936          UI      22      14      12      10       7       5       6       2       2       2
 937          UI       2       3       2       0       0       0       0       0       0       0
 938          UI       0       0       0       0       0       0       0       0       0       0
 939          UI       0       0       0       0       0       0       0       0       0       0
 940          UI       0       0       0       0       0       0       0       0       0       0
 941          UI       0       0       0       0       0       0       0       0       0       0
 942          UI       0       0       0       0       0       0       0       0       0       0
 943          UI       0       0       0       0       0       0       0       0       0       0
              *

 944          KK  CP09A6
 945          KM     Combine hydrographs from RTA4A6, RTA5A6, 509A6
 946          HC       3
              *
              * END OF MODIFICATION
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 947          KK    509D   BASIN
 948          KM   Sub-Basin   509D
 949          KM
 950          KM      The Phoenix Mountain S-Graph is used for this basin.
 951          KM
 952          BA   0.382
 953          KO                                      21
 954          LG    0.10    0.40    6.00    0.15      15
 955          UI      33      35      33      34      75     102     128     158     197     208
 956          UI     232     244     263     292     323     379     423     290     249     225
 957          UI     206     200     193     179     170     163     156     139     140     129
 958          UI     118     112     101      89      88      81      79      80      71      70
```

```
 959          UI      61      56      55      44      43      42      40      37      37      38
 960          UI      29       0       0       0       0       0       0       0       0       0
 961          UI       0       0       0       0       0       0       0       0       0       0
 962          UI       0       0       0       0       0       0       0       0       0       0
 963          UI       0       0       0       0       0       0       0       0       0       0
              *
              * ******************************************************************************
              * ******************************     Major Basin 500     ************************
              * ******************************************************************************
              *

 964          KK    500A   BASIN
 965          KM   Sub-Basin   500A
 966          KM
 967          KM      The Phoenix Mountain S-Graph is used for this basin.
 968          KM
 969          BA   0.204
 970          LG    0.10    0.37    5.20    0.21      15
 971          UI      32      33      68     118     180     208     244     284     360     326
 972          UI     231     201     179     168     150     133     125     105      86      82
 973          UI      75      69      58      50      42      40      35      34      25      25
 974          UI      25      16      16      16      17      15       6       6       6       7
 975          UI       6       6       6       7       6       6       7       6       0       0
 976          UI       0       0       0       0       0       0       0       0       0       0
              *

 977          KK    RTAB   ROUTE   REACH
 978          KM   Normal depth channel route from 500A to 500B
 979          RS       4    FLOW      -1
 980          RC   0.070   0.040   0.070    6187  0.0283 2261.00
 981          RX   822.0  1013.0  1035.0  1045.0  1049.0  1053.0  1076.0  1573.0
 982          RY  2261.0  2159.2  2158.9  2156.6  2156.8  2158.9  2159.0  2261.0
              *

 983          KK    500B   BASIN
 984          KM   Sub-Basin   500B
 985          KM
 986          KM      The Phoenix Mountain S-Graph is used for this basin.
 987          KM
 988          BA   0.192
 989          LG    0.10    0.37    5.30    0.20      15
 990          UI      21      21      20      38      66      83     105     131     140     151
1                                            HEC-1 INPUT                                          PAGE 24

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

 991          UI     169     189     226     256     168     145     133     120     116     110
 992          UI     102      95      89      83      75      71      63      54      52      49
 993          UI      47      46      42      34      34      27      26      27      23      22
 994          UI      24      16      16      16      16      14      10      10      11      10
 995          UI      10       0       0       0       0       0       0       0       0       0
 996          UI       0       0       0       0       0       0       0       0       0       0
 997          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 998          KK  CP500B
 999          KM     Combine routed hydrograph from 500A with runoff from 500B
1000          KO                                      21
1001          HC       2
              *
1002          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   15        511A1
                .
                .
   43           .       511A2
                .           V
                .           V
   58           .      RTA2A3
                .           .
                .           .
   64           .           .       511A3
                .           .           .
                .           .           .
   86        CP11A.......................
                V
                V
   89        RTA1D
                .
                .
```

```
 95          .        511D
             .           .
             .           .
111      CP11D............
             .
             .
114          .       511B4
             .           .
             .           .
129          .           .       511B1
             .           .           .
             .           .           .
144          .           .           .       511B2
             .           .           .           .
             .           .           .           .
166          .           .      CPB1B2............
             .           .           V
             .           .           V
169          .           .      RT12B4
             .           .           .
             .           .           .
175          .           .           .       511B3
             .           .           .           V
             .           .           .           V
197          .           .           .      RTB3B4
             .           .           .           .
             .           .           .           .
203          .       CP11B........................
             .           V
             .           V
206          .       RTB4D
             .           .
             .           .
212     CP11DF............
             V
             V
215       RTDF
             .
             .
221          .        511F
             .           .
             .           .
233      CP11F............
             .
             .
236          .       511C1
             .           .
             .           .
258          .           .-------> DIC1C4
256          .      DIC1E2
             .           V
             .           V
261          .      RTC1E2
             .           .
             .           .
267          .           .       511E1
             .           .           V
             .           .           V
287          .           .      RTE1E2
             .           .           .
             .           .           .
293          .           .           .       511E2
             .           .           .           -
             .           .           .           .
313          .           .      CPE1E2............
             .           .           .
             .           .           .
316          .           .           .       511C4
             .           .           .           .
             .           .           .           .
338          .           .           .           .           .<-------  DIC1C4
336          .           .           .           .      DRC1C4
             .           .           .           .           V
             .           .           .           .           V
339          .           .           .           .      RTC1C4
             .           .           .           .           .
             .           .           .           .           .
345          .           .           .      CP11C4............
             .           .           .           .
             .           .           .           .
350          .           .           .           .-------> DIC4C5
348          .           .           .      DIC4E2
             .           .           .           V
             .           .           .           V
353          .           .           .      RTC4E2
             .           .           .           .
             .           .           .           .
```

```
359          .      CP11E2.......................
             .           .
             .           .
362          .           .       511C5
             .           .           .
             .           .           .
384          .           .           .<-------  DIC4C5
382          .           .           .      DRC4C5
             .           .           .          V
             .           .           .          V
385          .           .           .      RTC4C5
             .           .           .           .
             .           .           .           .
391          .           .           .           .       511C3
             .           .           .           .           V
             .           .           .           .           V
411          .           .           .           .      RTC3C5
             .           .           .           .           .
             .           .           .           .           .
417          .           .           .           .           .       511C2
             .           .           .           .           .           .
             .           .           .           .           .           .
439          .           .           .           .           .           .-------> DIC2A2
437          .           .           .           .           .      DIC2C5
             .           .           .           .           .           V
             .           .           .           .           .           V
442          .           .           .           .           .      RTC2C5
             .           .           .           .           .           .
             .           .           .           .           .           .
448          .           .      CP11C5...................................
             .           .           .
             .           .           .
453          .           .           .-------> DIC5C6
451          .           .      DIC5E2
             .           .           V
             .           .           V
458          .           .      RTC5E2
             .           .           .
             .           .           .
464          .      CP11EF............
             .           .
             .           .
467       CPEF............
             V
             V
470     RTEFC8
             .
             .
476          .       511C8
             .           .
             .           .
499     CP11C8............
             V
             V
502     RTC8C7
             .
             .
508          .       511C7
             .           .
             .           .
531          .           .       511C6
             .           .           .
             .           .           .
556          .           .           .<-------  DIC5C6
554          .           .           .      DRC5C6
             .           .           .          V
             .           .           .          V
557          .           .           .      RTC5C6
             .           .           .           .
             .           .           .           .
563          .           .      CP11C6............
             .           .           V
             .           .           V
566          .           .      RTC6C7
             .           .           .
             .           .           .
572     CP11C7........................
             V
             V
575      RTC7H
             .
             .
582          .        511H
             .           .
             .           .
605      CP11H............
             V
```

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                V
608        RTHG4
                .
                .
614             .        511G1
                .            V
                .            V
631             .       RTG1G2
                .            .
                .            .
637             .            .       511G2
                .            .           .
                .            .           .
654             .       CP11G2............
                .            V
                .            V
657             .       RTG2G4
                .            .
                .            .
662             .            .       511G3
                .            .           V
                .            .           V
679             .            .      RTG3G4
                .            .           .
                .            .           .
685             .            .           .       511G4
                .            .           .           .
                .            .           .           .
702             .       CPG_G4........................
                .            .
                .            .
705        CP11G4............
                V
                V
708        RTG4I
                .
                .
713             .        511I
                .            .
                .            .
727        CP11I............
                .
                .
731             .        510A
                .            .
                .            .
750             .            .       509A5
                .            .           .
                .            .           .
771             .            .           .-------->   DIA5S
769             .            .      DIA59B
                .            .           V
                .            .           V
774             .            .      RTA59B
                .            .           .
                .            .           .
780             .            .           .        509B
                .            .           .           .
                .            .           .           .
799             .            .       CP09B............
                .            .           .
                .            .           .
803             .            .           .       509A1
                .            .           .           V
                .            .           .           V
822             .            .           .      RTA1A2
                .            .           .           .
                .            .           .           .
828             .            .           .           .       509A2
                .            .           .           .           .
                .            .           .           .           .
849             .            .           .           .           .           .<-------  DIC2A2
847             .            .           .           .           .      DRC2A2
                .            .           .           .           .           V
                .            .           .           .           .           V
850             .            .           .           .           .      RTC2A2
                .            .           .           .           .           .
                .            .           .           .           .           .
856             .            .           .      CP09A2........................
                .            .           .           V
                .            .           .           V
859             .            .           .      RTA2A4
                .            .           .           .
                .            .           .           .
865             .            .           .           .       509A3
                .            .           .           .           V
                .            .           .           .           V
```

```
884          .          .          .          .      RTA3A4
             .          .          .          .          .
             .          .          .          .          .
890          .          .          .          .          .      509A4
             .          .          .          .          .          .
             .          .          .          .          .          .
909          .          .          .     CP09A4.......................
             .          .          .          V
             .          .          .          V
912          .          .          .     RTA4A6
             .          .          .          .
             .          .          .          .
920          .          .          .          .          .<-------   DIA5S
918          .          .          .          .      DRA5A6
             .          .          .          .          V
             .          .          .          .          V
921          .          .          .          .      RTA5A6
             .          .          .          .          .
             .          .          .          .          .
927          .          .          .          .          .      509A6
             .          .          .          .          .          .
             .          .          .          .          .          .
944          .          .          .     CP09A6.......................
             .          .          .          .
             .          .          .          .
947          .          .          .          .        509D
             .          .          .          .          .
             .          .          .          .          .
964          .          .          .          .          .       500A
             .          .          .          .          .          V
             .          .          .          .          .          V
977          .          .          .          .          .       RTAB
             .          .          .          .          .          .
             .          .          .          .          .          .
983          .          .          .          .          .          .       500B
             .          .          .          .          .          .          .
             .          .          .          .          .          .          .
998          .          .          .          .          .     CP500B............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              JUL   1997              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
*            VERSION 4.1               *                                    *         609 SECOND STREET            *
*                                      *                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE   30AUG06  TIME  13:22:02  *                                    *          (916) 756-1104              *
*                                      *                                    *                                      *
****************************************                                    ****************************************
```

```
Project ID: S_24FC - Major Basin: 01 - Return Period: 100 Years
RIO VERDE AREA DRAINAGE MASTER PLAN                    FILE NAME: S_24FC.DAT
MODEL:      100-year, 24-hour Future Condition Model
DEVELOPER:  Dibble & Associates, Inc.                  DATE: Sept. 29, 2003

*** Modified South Watershed Model: Subbasin Added: 509A6 ***
                                                       DATE REVISED: 5/06/05
*** Note Changes Per TDN Hydrology Review Comments by FCDMC - July 21, 2006
*** Modify Flow Distribution for DIC5E2 to match Floodplain RAS Modeling
                                                       LAST UPDATE:  8/30/06


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

    IT          HYDROGRAPH TIME DATA
                       NMIN          2  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ       1200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME       1558  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL      .03 HOURS
                      TOTAL TIME BASE   39.97 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


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


            **************
            *            *
 727 KK     *     CP11I  *
            *            *
            **************

 729 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 731 KK     *      510A  *        BASIN
            *            *
            **************

 737 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 799 KK     *     CP09B  *
            *            *
            **************

 801 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 927 KK     *     509A6  *        BASIN
            *            *
            **************

 933 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
```

```
                    IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 947 KK     *     509D   *        BASIN
            *            *
            **************

 953 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS


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


            **************
            *            *
 998 KK     *   CP500B   *
            *            *
            **************

1000 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        1200  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .033  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION      FLOW    PEAK                                          AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                         511A1       436.   12.20          57.         16.          9.       .29

        HYDROGRAPH AT
+                         511A2       122.   12.07          11.          3.          2.       .06

        ROUTED TO
+                        RTA2A3        90.   12.27          11.          3.          2.       .06
+                                                                                                      2658.00       12.27

        HYDROGRAPH AT
+                         511A3       447.   12.20          57.         16.          9.       .29

        3 COMBINED AT
+                         CP11A       967.   12.20         125.         34.         21.       .65

        ROUTED TO
+                         RTA1D       830.   12.50         125.         34.         21.       .65
+                                                                                                       100.55       12.50

        HYDROGRAPH AT
+                          511D       209.   12.13          25.          7.          4.       .12

        2 COMBINED AT
+                         CP11D       933.   12.47         150.         41.         25.       .77

        HYDROGRAPH AT
+                         511B4       370.   12.13          43.         13.          8.       .19
```

	HYDROGRAPH AT									
+		511B1	709.	12.33	113.	32.	19.	.58		
	HYDROGRAPH AT									
+		511B2	309.	12.23	43.	12.	7.	.22		
	2 COMBINED AT									
+		CPB1B2	1005.	12.33	157.	44.	26.	.81		
	ROUTED TO									
+		RT12B4	933.	12.50	157.	44.	26.	.81		
+									2576.00	12.50
	HYDROGRAPH AT									
+		511B3	159.	12.10	16.	4.	3.	.08		
	ROUTED TO									
+		RTB3B4	135.	12.23	16.	4.	3.	.08		
+									2561.77	12.23
	3 COMBINED AT									
+		CP11B	1173.	12.43	216.	61.	37.	1.08		
	ROUTED TO									
+		RTB4D	1169.	12.47	216.	61.	37.	1.08		
+									2532.91	12.47
	2 COMBINED AT									
+		CP11DF	2102.	12.47	366.	102.	61.	1.85		
	ROUTED TO									
+		RTDF	2071.	12.53	365.	102.	61.	1.85		
+									102.11	12.53
	HYDROGRAPH AT									
+		511F	291.	12.13	31.	9.	5.	.16		
	2 COMBINED AT									
+		CP11F	2160.	12.53	397.	111.	67.	2.00		
	HYDROGRAPH AT									
+		511C1	451.	12.23	62.	17.	10.	.33		
	DIVERSION TO									
+		DIC1C4	235.	12.23	32.	9.	5.	.33		
	HYDROGRAPH AT									
+		DIC1E2	216.	12.23	30.	8.	5.	.33		
	ROUTED TO									
+		RTC1E2	164.	12.73	30.	8.	5.	.33		
+									2496.62	12.73
	HYDROGRAPH AT									
+		511E1	415.	12.23	56.	15.	9.	.30		
	ROUTED TO									
+		RTE1E2	352.	12.50	56.	15.	9.	.30		
+									2496.96	12.50
	HYDROGRAPH AT									
+		511E2	383.	12.27	56.	15.	9.	.28		
	2 COMBINED AT									
+		CPE1E2	667.	12.40	111.	31.	18.	.57		
	HYDROGRAPH AT									
+		511C4	50.	12.03	4.	1.	1.	.02		
	HYDROGRAPH AT									
+		DRC1C4	235.	12.23	32.	9.	5.	.00		
	ROUTED TO									
+		RTC1C4	227.	12.33	32.	9.	5.	.00		
+									2599.20	12.33
	2 COMBINED AT									
+		CP11C4	238.	12.30	36.	10.	6.	.02		
	DIVERSION TO									
+		DIC4C5	163.	12.30	26.	7.	4.	.02		
	HYDROGRAPH AT									
+		DIC4E2	75.	12.30	10.	3.	2.	.02		
	ROUTED TO									
+		RTC4E2	54.	12.77	10.	3.	2.	.02		

```
+                                                                                    2496.30      12.77

        3 COMBINED AT
+                    CP11E2     767.  12.40      152.      42.      25.      .92

        HYDROGRAPH AT
+                     511C5     215.  12.10       23.       6.       4.      .11

        HYDROGRAPH AT
+                    DRC4C5     163.  12.30       26.       7.       4.      .00

        ROUTED TO
+                    RTC4C5     155.  12.43       26.       7.       4.      .00
+                                                                                    2526.75      12.43

        HYDROGRAPH AT
+                     511C3     243.  12.13       27.       7.       4.      .14

        ROUTED TO
+                    RTC3C5     223.  12.27       27.       7.       4.      .14
+                                                                                    2526.99      12.27

        HYDROGRAPH AT
+                     511C2     493.  12.30       73.      20.      12.      .39

        DIVERSION TO
+                    DIC2A2     194.  12.30       26.       7.       4.      .39

        HYDROGRAPH AT
+                    DIC2C5     299.  12.30       46.      13.       8.      .39

        ROUTED TO
+                    RTC2C5     275.  12.47       46.      13.       8.      .39
+                                                                                    2552.64      12.47

        4 COMBINED AT
+                    CP11C5     718.  12.33      122.      34.      20.      .64

        DIVERSION TO
+                    DIC5C6     446.  12.33       80.      22.      13.      .64

        HYDROGRAPH AT
+                    DIC5E2     310.  12.33       42.      12.       7.      .64

        ROUTED TO
+                    RTC5E2     288.  12.47       42.      12.       7.      .64
+                                                                                    2496.86      12.47

        2 COMBINED AT
+                    CP11EF    1053.  12.50      194.      54.      32.     1.56

        2 COMBINED AT
+                      CPEF    3201.  12.50      590.     164.      99.     3.57

        ROUTED TO
+                    RTEFC8    3177.  12.57      590.     164.      99.     3.57
+                                                                                    2450.09      12.57

        HYDROGRAPH AT
+                     511C8      96.  12.03        8.       2.       1.      .04

        2 COMBINED AT
+                    CP11C8    3182.  12.57      598.     166.     100.     3.61

        ROUTED TO
+                    RTC8C7    3181.  12.57      598.     166.     100.     3.61
+                                                                                    2357.90      12.57

        HYDROGRAPH AT
+                     511C7     199.  12.17       24.       7.       4.      .12

        HYDROGRAPH AT
+                     511C6      75.  12.07        7.       2.       1.      .04

        HYDROGRAPH AT
+                    DRC5C6     446.  12.53       80.      22.      13.      .00

        ROUTED TO
+                    RTC5C6     399.  12.67       80.      22.      13.      .00
+                                                                                    2489.66      12.67

        2 COMBINED AT
+                    CP11C6     409.  12.63       88.      24.      15.      .04

        ROUTED TO
+                    RTC6C7     404.  12.70       88.      24.      15.      .04
+                                                                                    2446.80      12.70
```

```
        3 COMBINED AT
+                    CP11C7     3646.   12.57       709.       197.       119.      3.76
        ROUTED TO
+                    RTC7H      3509.   12.73       690.       179.       107.      3.76
+                                                                                 2357.91      12.73
        HYDROGRAPH AT
+                     511H       403.   12.20        51.        14.         9.       .30
        2 COMBINED AT
+                    CP11H      3638.   12.73       742.       193.       116.      4.07
        ROUTED TO
+                    RTHG4      3629.   12.73       742.       193.       116.      4.07
+                                                                                 2330.71      12.73
        HYDROGRAPH AT
+                    511G1       567.   12.13        62.        18.        11.       .31
        ROUTED TO
+                   RTG1G2       471.   12.33        62.        18.        11.       .31
+                                                                                 2467.14      12.33
        HYDROGRAPH AT
+                    511G2       258.   12.13        29.         8.         5.       .16
        2 COMBINED AT
+                   CP11G2       674.   12.27        91.        26.        16.       .47
        ROUTED TO
+                   RTG2G4       642.   12.40        91.        26.        16.       .47
+                                                                                 2356.55      12.40
        HYDROGRAPH AT
+                    511G3       162.   12.13        18.         5.         3.       .10
        ROUTED TO
+                   RTG3G4       142.   12.37        18.         5.         3.       .10
+                                                                                 2376.14      12.37
        HYDROGRAPH AT
+                    511G4       406.   12.23        52.        15.         9.       .30
        3 COMBINED AT
+                   CPG_G4      1118.   12.33       161.        45.        27.       .86
        2 COMBINED AT
+                   CP11G4      4225.   12.70       903.       239.       143.      4.93
        ROUTED TO
+                    RTG4I      4192.   12.77       903.       239.       143.      4.93
+                                                                                 2357.64      12.77
        HYDROGRAPH AT
+                     511I       292.   12.17        33.         9.         6.       .20
        2 COMBINED AT
+                    CP11I      4245.   12.77       936.       248.       149.      5.13
        HYDROGRAPH AT
+                     510A       914.   12.50       160.        44.        26.       .92
        HYDROGRAPH AT
+                    509A5        47.   12.03         4.         1.         1.       .02
        DIVERSION TO
+                    DIA5S         1.   12.03         0.         0.         0.       .02
        HYDROGRAPH AT
+                   DIA59B        45.   12.03         4.         1.         1.       .02
        ROUTED TO
+                   RTA59B        13.   13.57         4.         1.         1.       .02
+                                                                                 2180.24      13.57
        HYDROGRAPH AT
+                     509B       594.   12.53       104.        29.        17.       .65
        2 COMBINED AT
+                    CP09B       594.   12.53       107.        30.        18.       .67
        HYDROGRAPH AT
+                    509A1       288.   12.20        38.        10.         6.       .19
        ROUTED TO
```

```
+                    RTA1A2     272.  12.30      38.      10.       6.      .19
+                                                                          2463.92      12.30

     HYDROGRAPH AT
+                     509A2     204.  12.17      26.       7.       4.      .13

     HYDROGRAPH AT
+                    DRC2A2     194.  12.30      26.       7.       4.      .00

     ROUTED TO
+                    RTC2A2     168.  12.57      26.       7.       4.      .00
+                                                                          2499.19      12.57

     3 COMBINED AT
+                    CP09A2     535.  12.33      90.      25.      15.      .32

     ROUTED TO
+                    RTA2A4     505.  12.47      90.      25.      15.      .32
+                                                                          2417.69      12.47

     HYDROGRAPH AT
+                     509A3     283.  12.13      32.       9.       5.      .16

     ROUTED TO
+                    RTA3A4     274.  12.20      32.       9.       5.      .16
+                                                                          2403.70      12.20

     HYDROGRAPH AT
+                     509A4     142.  12.07      13.       3.       2.      .06

     3 COMBINED AT
+                    CP09A4     727.  12.30     135.      37.      22.      .55

     ROUTED TO
+                    RTA4A6     712.  12.43     135.      37.      22.      .55
+                                                                          2381.12      12.43

     HYDROGRAPH AT
+                    DRA5A6       1.  12.03       0.       0.       0.      .00

     ROUTED TO
+                    RTA5A6       1.  12.27       0.       0.       0.      .00
+                                                                          2378.01      12.27

     HYDROGRAPH AT
+                     509A6      80.  12.03       7.       2.       1.      .03

     3 COMBINED AT
+                    CP09A6     727.  12.43     142.      39.      23.      .58

     HYDROGRAPH AT
+                      509D     436.  12.37      69.      19.      11.      .38

     HYDROGRAPH AT
+                      500A     333.  12.13      37.      10.       6.      .20

     ROUTED TO
+                      RTAB     306.  12.33      37.      10.       6.      .20
+                                                                          2157.27      12.33

     HYDROGRAPH AT
+                      500B     246.  12.27      35.      10.       6.      .19

     2 COMBINED AT
+                    CP500B     549.  12.30      72.      20.      12.      .40


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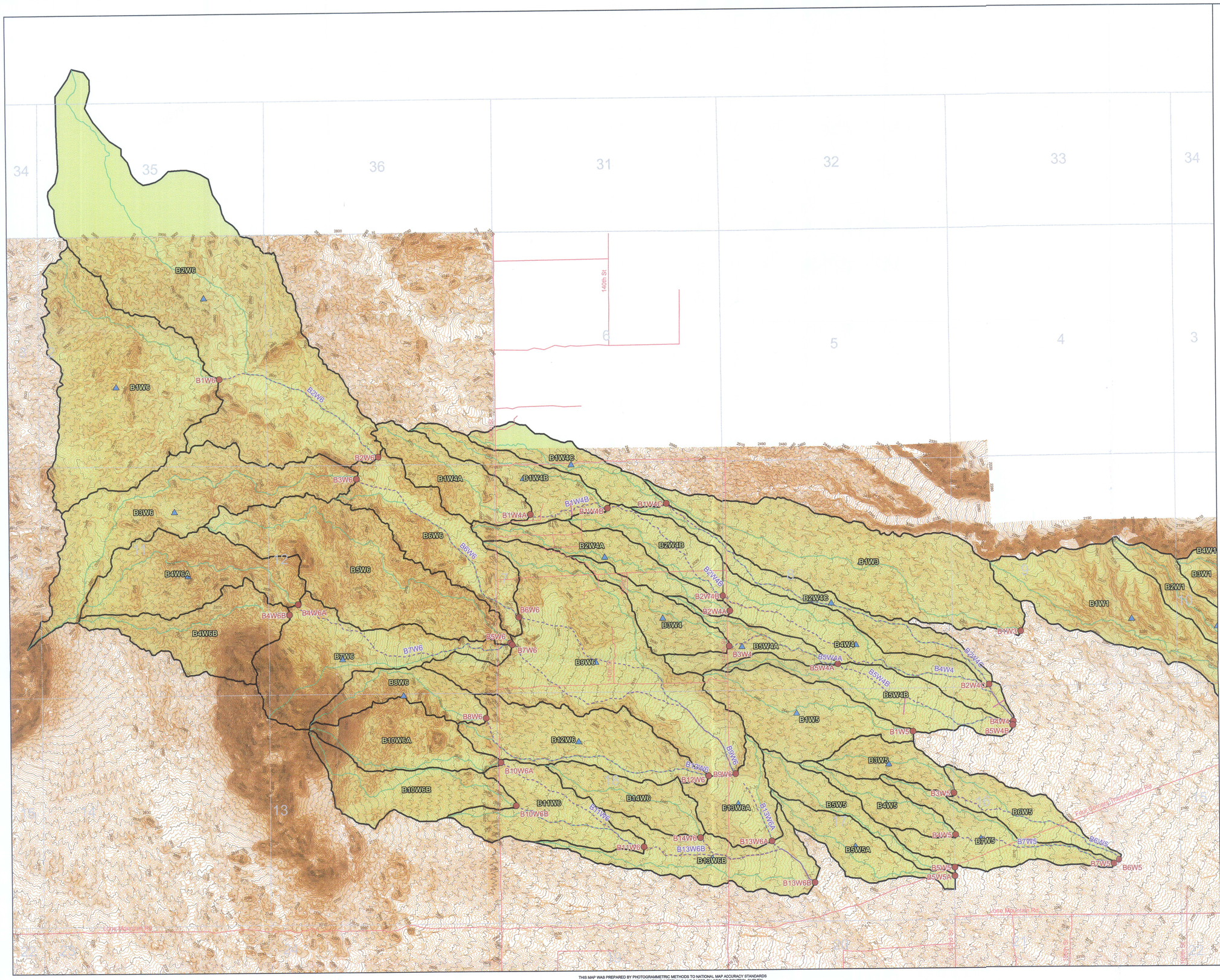


THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS
1"= 1000' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY
DATA PROVIDED BY MICHAEL BAKER Jr. INC., DAVID EVANS & ASSO., WILSON CO.

Flood Control District of Maricopa County

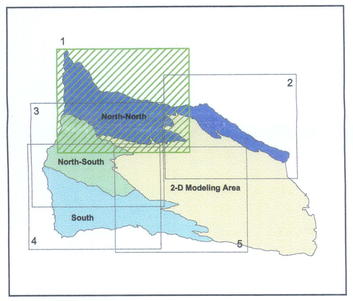
RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

LEGEND

- Centroids
- Concentration Points
- Flow Paths
- Routing Reaches
- Routing Sections
- Streets
- 10' Contours
- 2' Contours
- Sections
- Subbasins

INDEX MAP



0 500 1,000 2,000 3,000 Feet

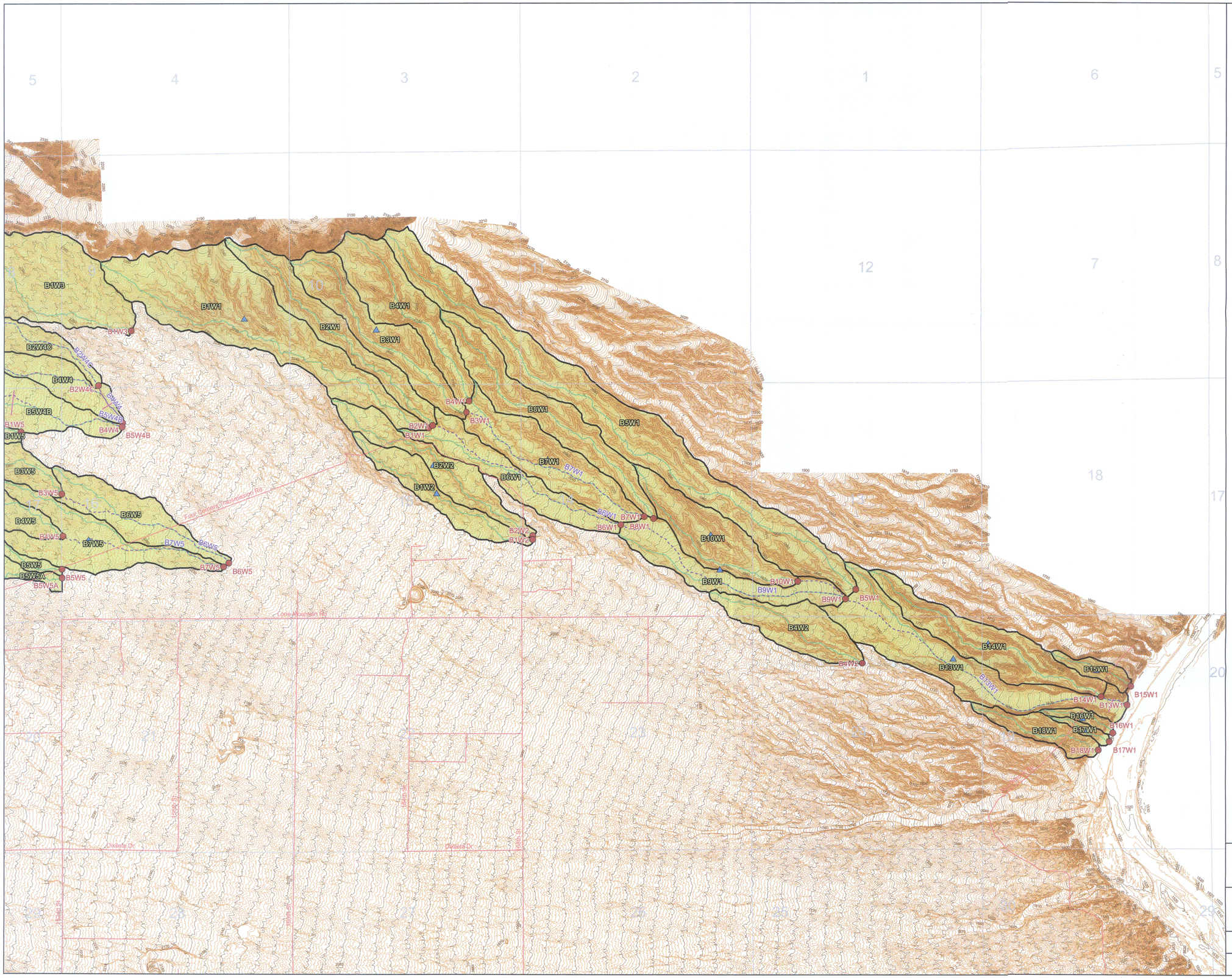
SCALE: 1" = 1000'

CONTOUR INTERVAL = 2'

NORTH-NORTH DRAINAGE MAP EXHIBIT 1

DIBBLE & ASSOCIATES CONSULTING ENGINEERS
Since 1982
August 2006

	BY	DATE	SHEET
DRAWING	JDC	8/25/2006	1 OF 5
DRAWING CHECK	CCC	8/25/2006	



Flood Control District of Maricopa County

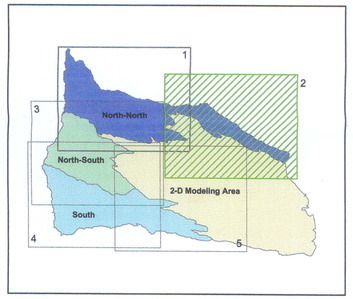
RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

LEGEND

- Centroids
- Concentration Points
- Flow Paths
- Routing Reaches
- Routing Sections
- Streets
- 10' Contours
- 2' Contours
- Sections
- Subbasins

INDEX MAP



0 500 1,000 2,000 3,000 Feet

SCALE: 1" = 1000'

CONTOUR INTERVAL = 2'

NORTH-NORTH DRAINAGE MAP EXHIBIT 2

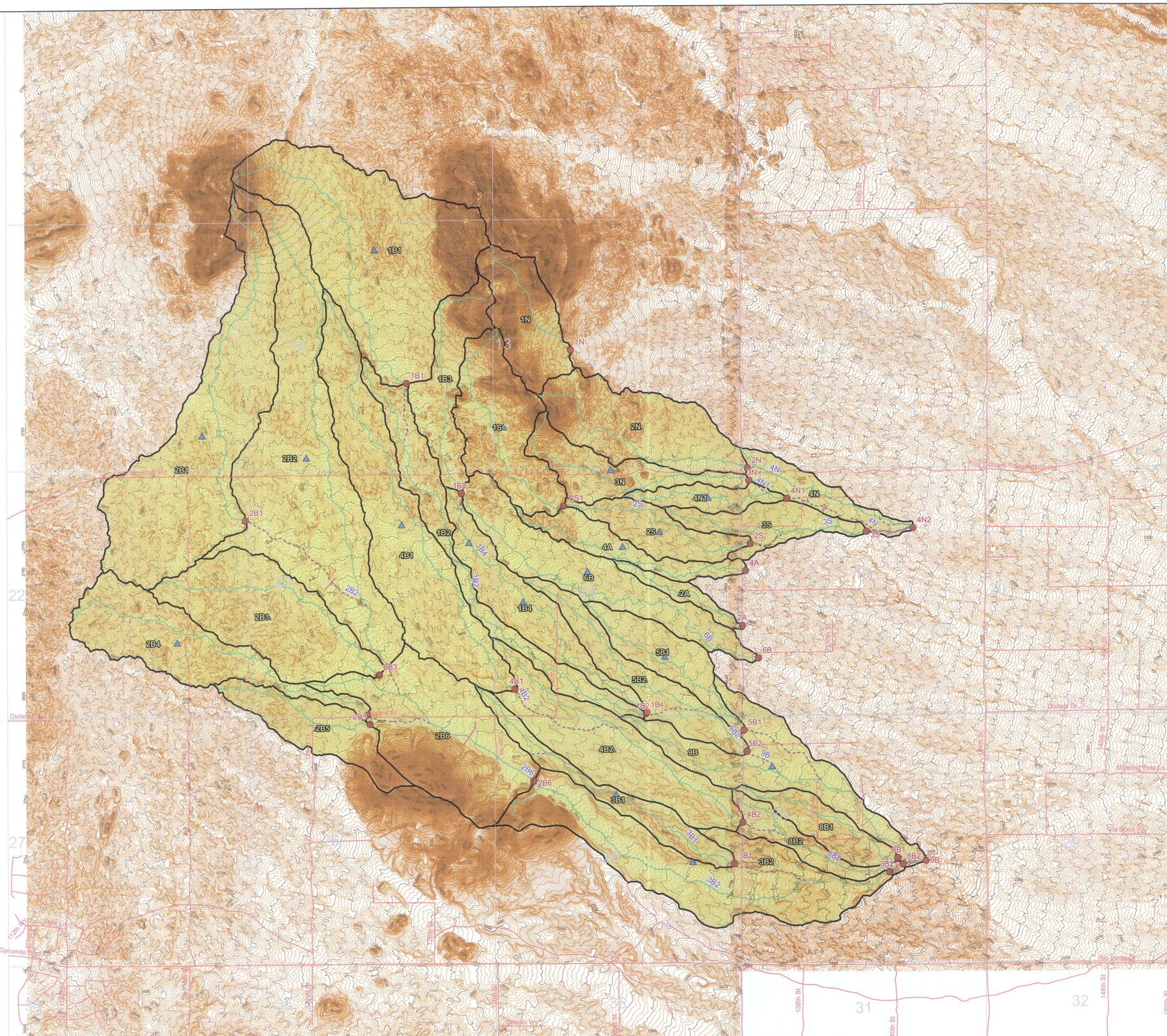
DIBBLE & ASSOCIATES CONSULTING ENGINEERS

Since 1962

August 2006

	BY	DATE	SHEET
DRAWING	JDC	8/25/2006	2 OF 5
DRAWING CHECK	CCC	8/25/2006	

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS
1"= 1000' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY
DATA PROVIDED BY MICHAEL BAKER Jr. INC., DAVID EVANS & ASSO., WILSON CO.



Flood Control District of Maricopa County

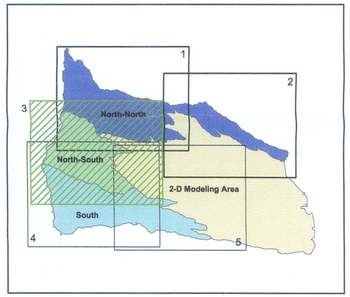
RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

LEGEND

- Centroids
- Concentration Points
- Flow Paths
- Routing Reaches
- Routing Sections
- Streets
- 10' Contours
- 2' Contours
- Sections
- Subbasins

INDEX MAP



0 500 1,000 2,000 3,000 Feet

SCALE: 1" = 1000'

CONTOUR INTERVAL = 2'

NORTH-SOUTH DRAINAGE MAP
EXHIBIT 3

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962
August 2006

	BY	DATE	
DRAWING	JDC	8/25/2006	SHEET
DRAWING CHECK	CCC	8/25/2006	3 OF 5

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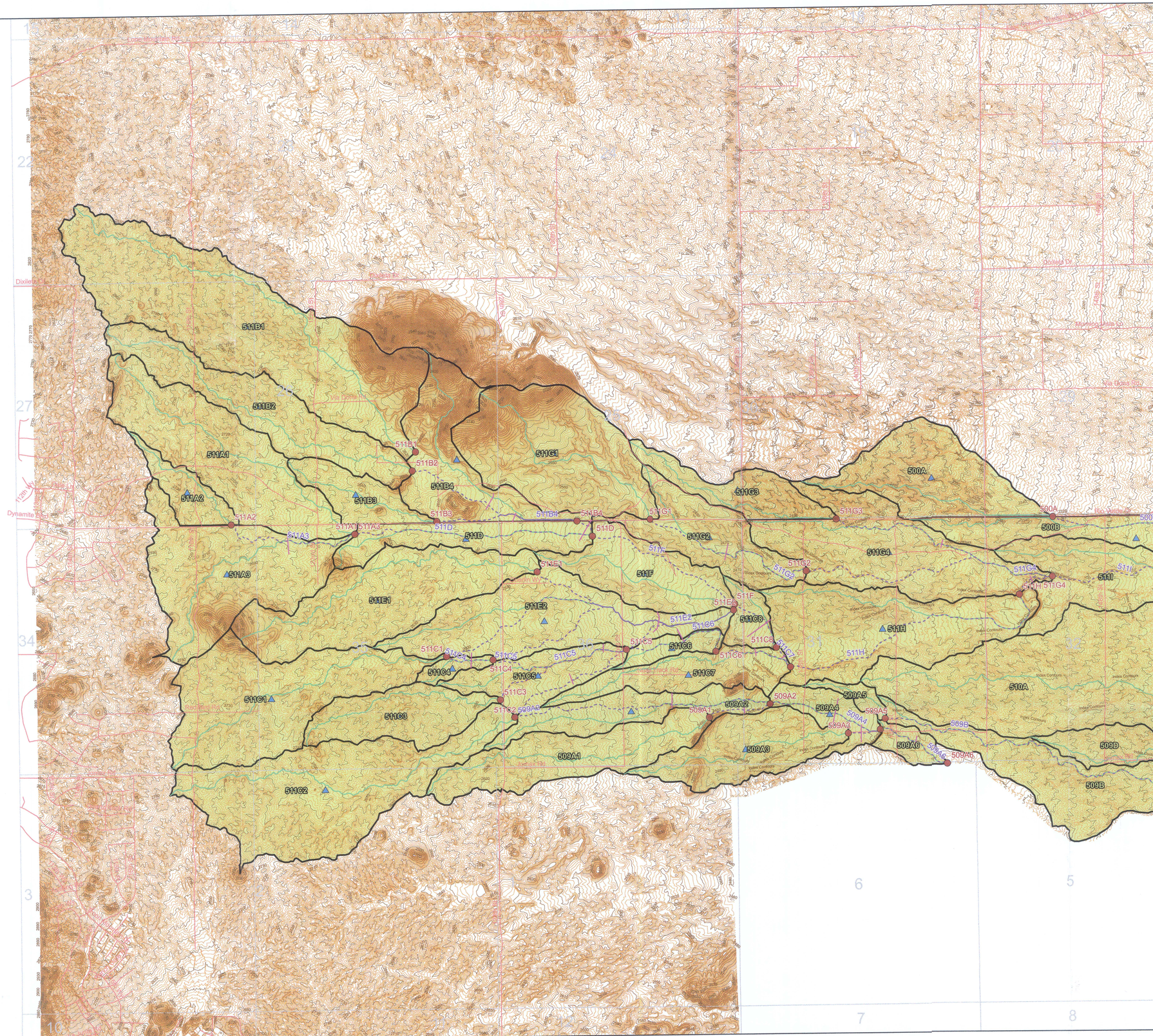


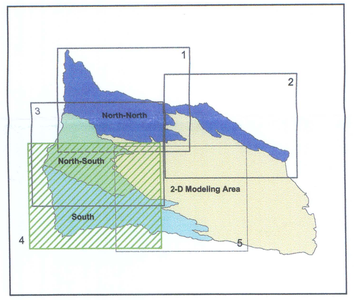
RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

LEGEND

- Centroids
- Concentration Points
- Flow Paths
- Routing Reaches
- Routing Sections
- Streets
- 10' Contours
- 2' Contours
- Sections
- Subbasins

INDEX MAP



0 500 1,000 2,000 3,000 Feet

SCALE: 1" = 1000'

CONTOUR INTERVAL = 2'

SOUTH DRAINAGE MAP EXHIBIT 4

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

August 2006

	BY	DATE	SHEET
DRAWING	JDC	8/25/2006	4 OF 5
DRAWING CHECK	CCC	8/25/2006	

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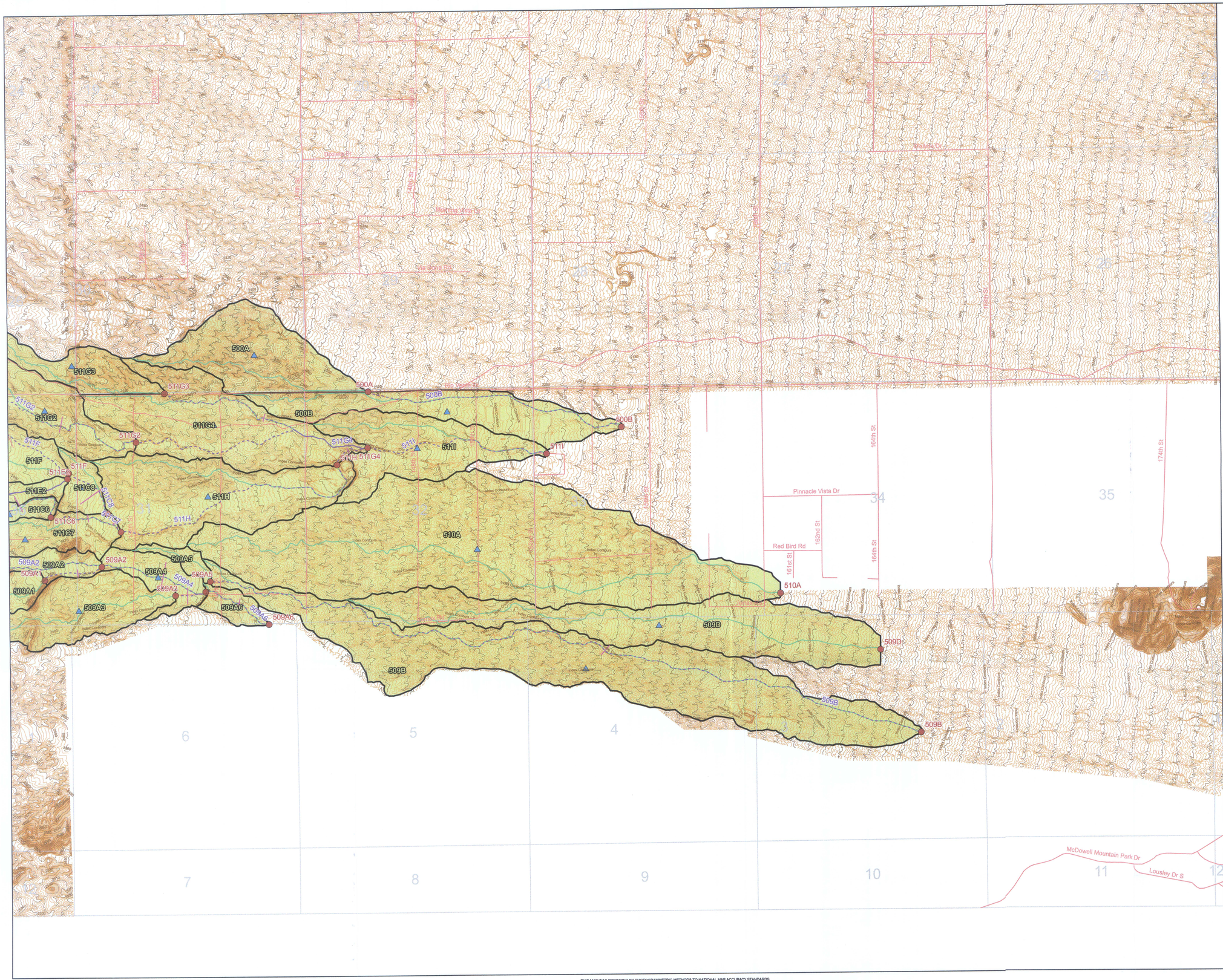
DATA PROVIDED BY MICHAEL BAKER Jr. INC., DAVID EVANS & ASSO., WILSON CO.



Flood Control District of Maricopa County

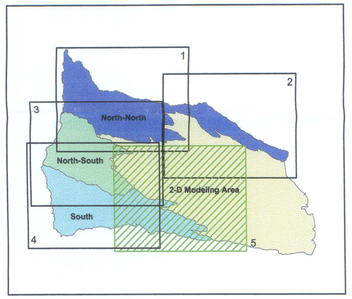
RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

LEGEND

- Centroids
- Concentration Points
- Flow Paths
- Routing Reaches
- Routing Sections
- Streets
- 10' Contours
- 2' Contours
- Sections
- Subbasins

INDEX MAP



0 500 1,000 2,000 3,000 Feet

SCALE: 1" = 1000'

CONTOUR INTERVAL = 2'

SOUTH DRAINAGE MAP
EXHIBIT 5

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

August 2006

	BY	DATE	
DRAWING	JDC	8/25/2006	SHEET
DRAWING CHECK	CCC	8/25/2006	5 OF 5

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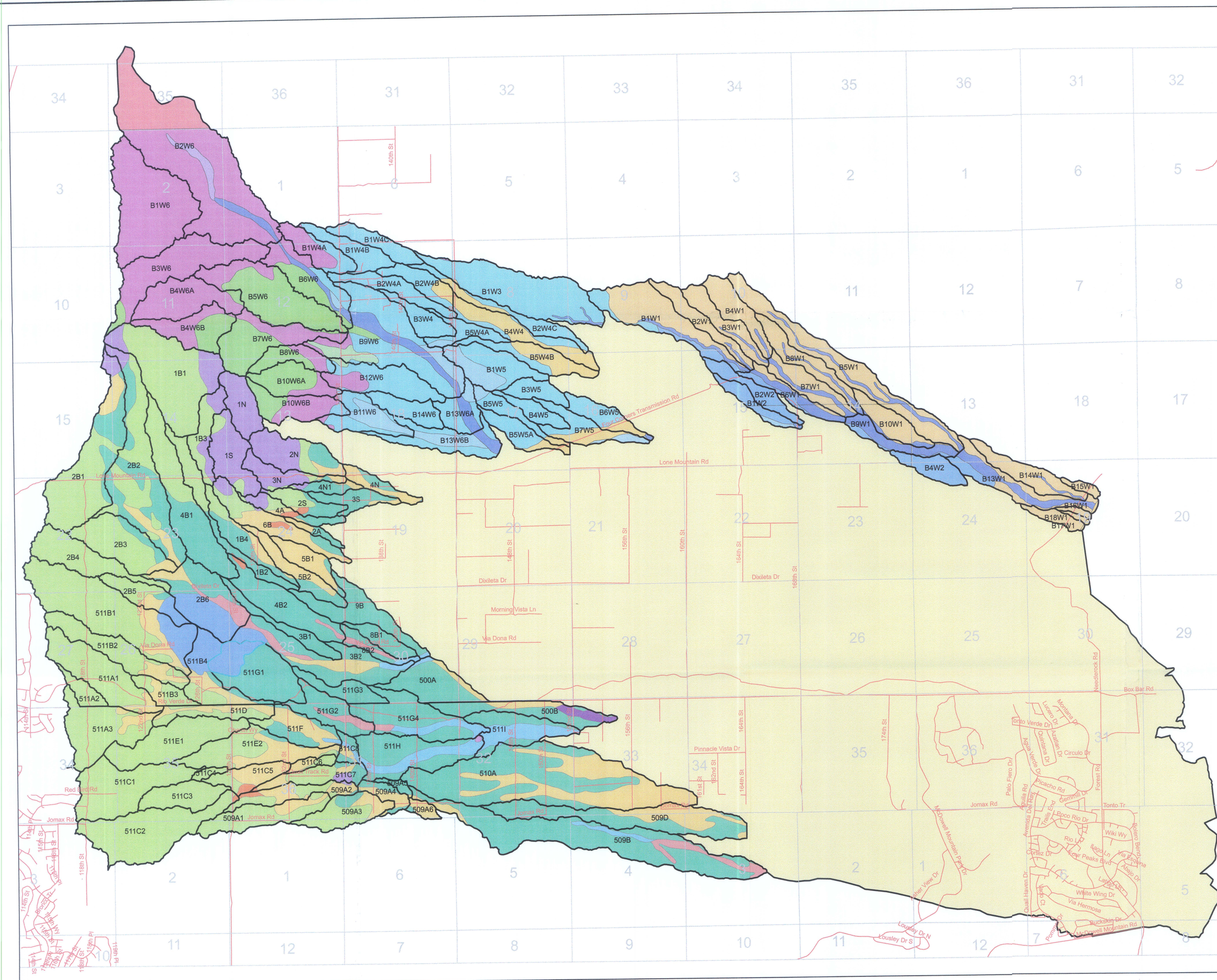


RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

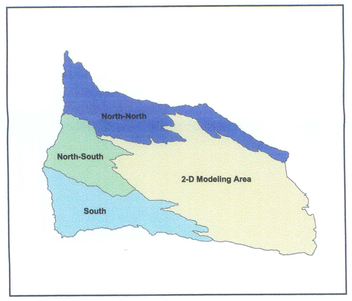
LEGEND

- Streets
- Sections
- Subbasins
- 2-D Modeling Area

Soils

- Anthony-Arizo complex
- Eba very gravelly loam, 1 to 8 percent slopes
- Eba very gravelly loam, 8 to 20 percent slopes
- Eba-Continental-Cave association, 3 to 20 percent slopes
- Eba-Pinaleno complex, 20 to 40 percent slopes
- Eba-Pinaleno complex, 3 to 20 percent slopes
- Gran-Wickenburg complex, 1 to 10 percent slopes
- Gran-Wickenburg-Rock outcrop complex, 1 to 7 percent slopes
- Nickel-Cave complex, 8 to 30 percent slopes
- Pinaleno-Tres Hermanos complex, 1 to 10 percent slopes
- Sandy Loam
- Tres Hermanos-Anthony complex, 1 to 5 percent slopes
- Vado gravelly sandy loam, 1 to 5 percent slopes
- Lehmans-Rock outcrop complex, 8 to 65 percent

INDEX MAP



0 1,000 2,000 4,000 6,000 Feet

SCALE: 1" = 2000'

SOILS MAP

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

August 2006

	BY	DATE	SHEET
DRAWING	JDC	8/25/2006	1 OF 1
DRAWING CHECK	CCC	8/25/2006	

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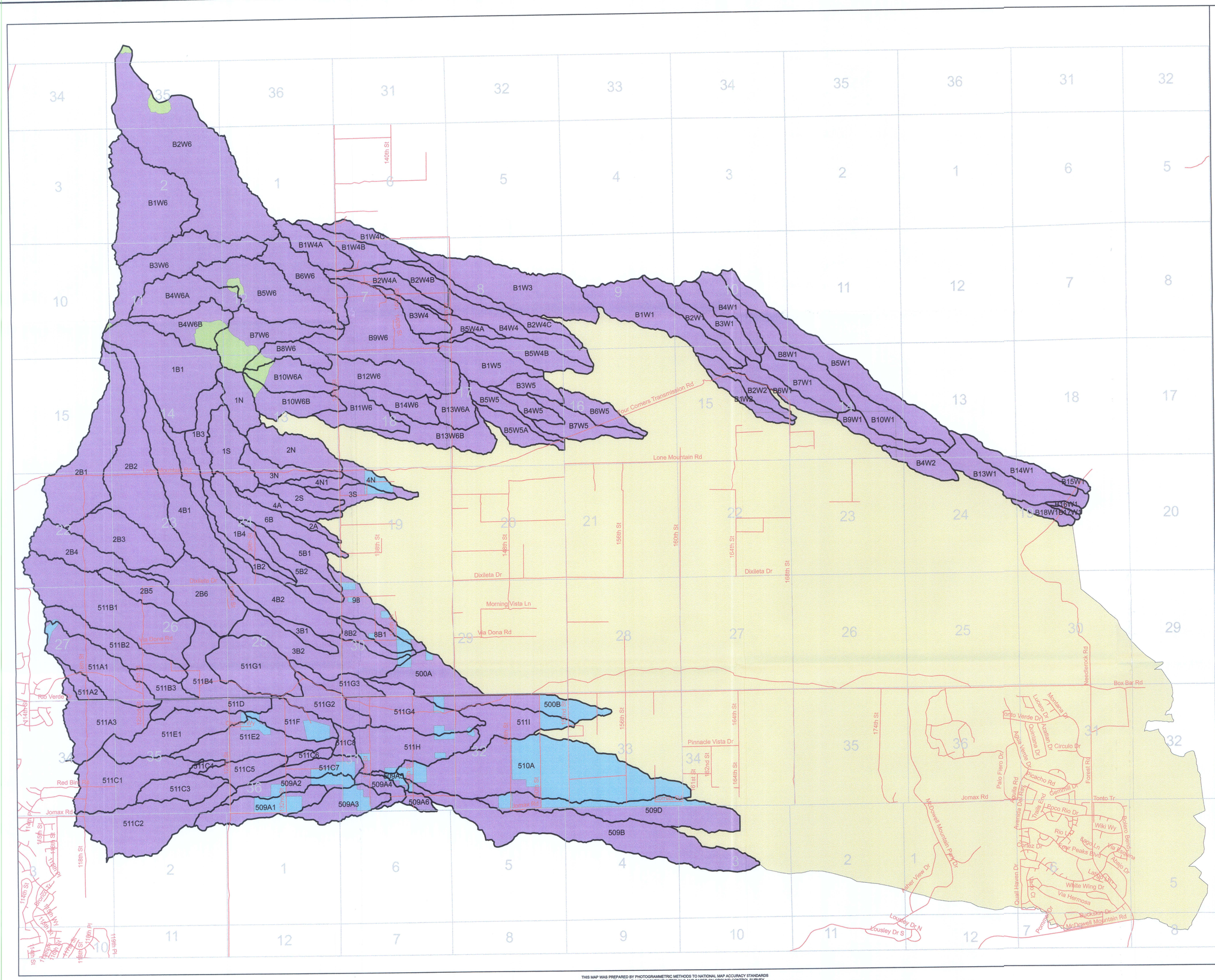

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Flood Control District of Maricopa County

RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

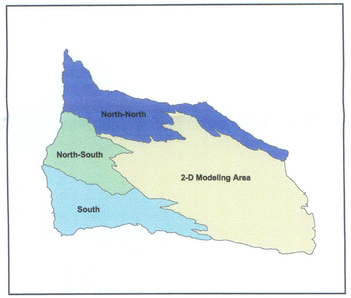
LEGEND

- Streets
- Sections
- Subbasins
- 2-D Modeling Area

Existing Land Use

- Desert
- Hillside
- VLDR

INDEX MAP



0 1,000 2,000 4,000 6,000 Feet

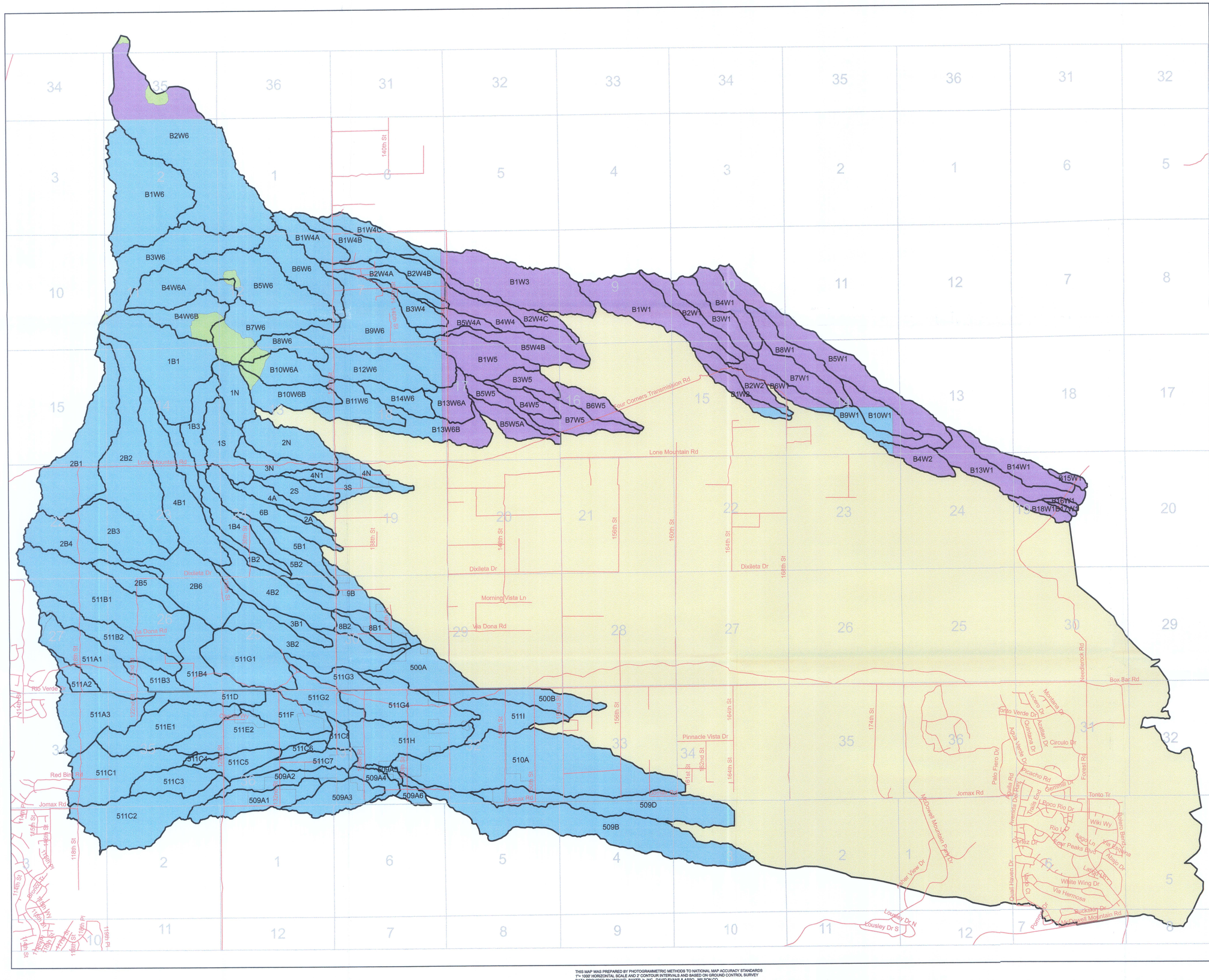
SCALE: 1" = 2000'

EXISTING LAND USE MAP

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1982

August 2006

	BY	DATE	SHEET
DRAWING	JDC	8/25/2006	1 OF 1
DRAWING CHECK	CCC	8/25/2006	



RIO VERDE AREA DRAINAGE MASTER PLAN

F.C.D. CONTRACT NO. 2001C056

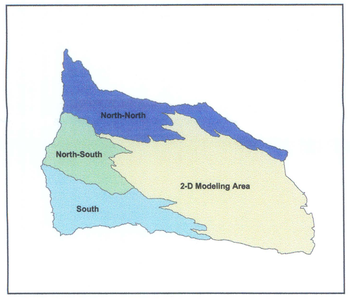
LEGEND

- Streets
- Sections
- Subbasins
- 2-D Modeling Area

Future Landuse

- Desert
- Hillside
- VLDR

INDEX MAP



0 1,000 2,000 4,000 6,000 Feet

SCALE: 1" = 2000'

FUTURE LAND USE MAP

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

August 2006

	BY	DATE	SHEET
DRAWING	JDC	8/25/2006	1 OF 1
DRAWING CHECK	CCC	8/25/2006	

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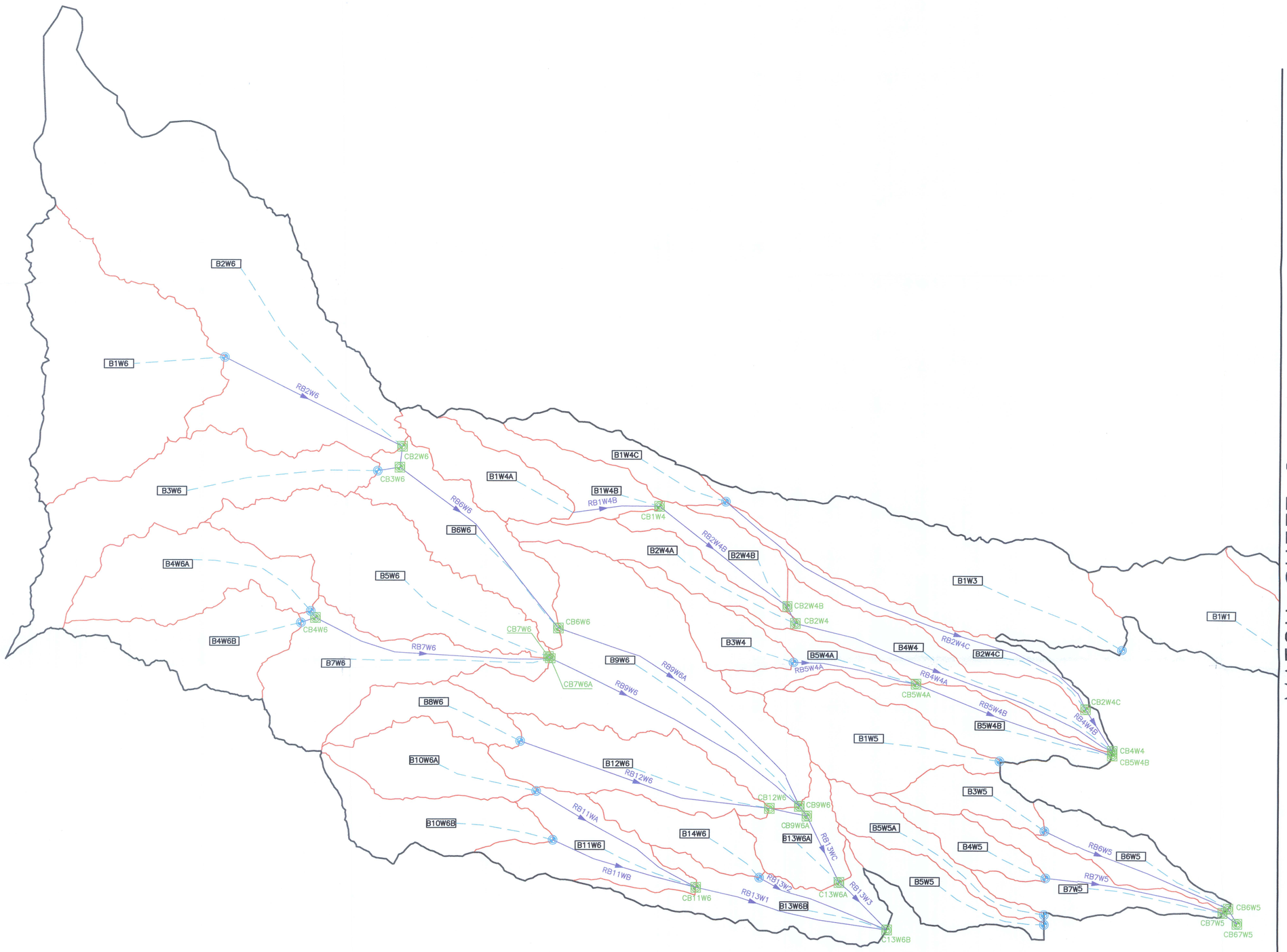


MATCH SHEET 2

Flood Control District of Maricopa County

RIO VERDE AREA
DRAINAGE MASTER PLAN

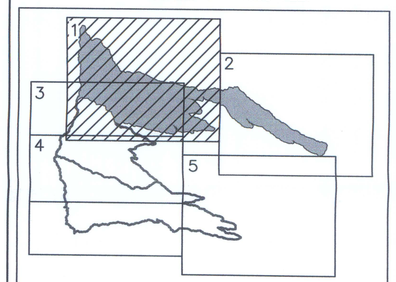
F.D.C. CONTRACT NO. 2001C056

LEGEND

SUB-BASIN LABEL	B6W6
FLOW ROUTING	RB6W6
SUB-BASIN RUNOFF	
HYDROGRAPH BASIN OUTLET	
HYDROGRAPH COMBINE POINT	CP5W4
HYDROGRAPH BASIN OUTLET & DIVERSION POINT	
HYDROGRAPH COMBINE & DIVERSION POINT	CP11C4
STORAGE TANK	
SUB-BASIN BOUNDARY	
WATERSHED BOUNDARY	

N

1000' 0' 1000' 2000'
SCALE: 1"= 1000 FEET



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RIO VERDE ADMP
HYDROLOGY FLOW SCHEMATIC

NORTH-NORTH BASIN

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

	BY	DATE
DESIGN	JTB	08/31/06
DESIGN CHK.	CCC	08/31/06
PLANS	GTS	08/31/06
PLANS CHK.	CCC	08/31/06

SHEET 1 OF 5

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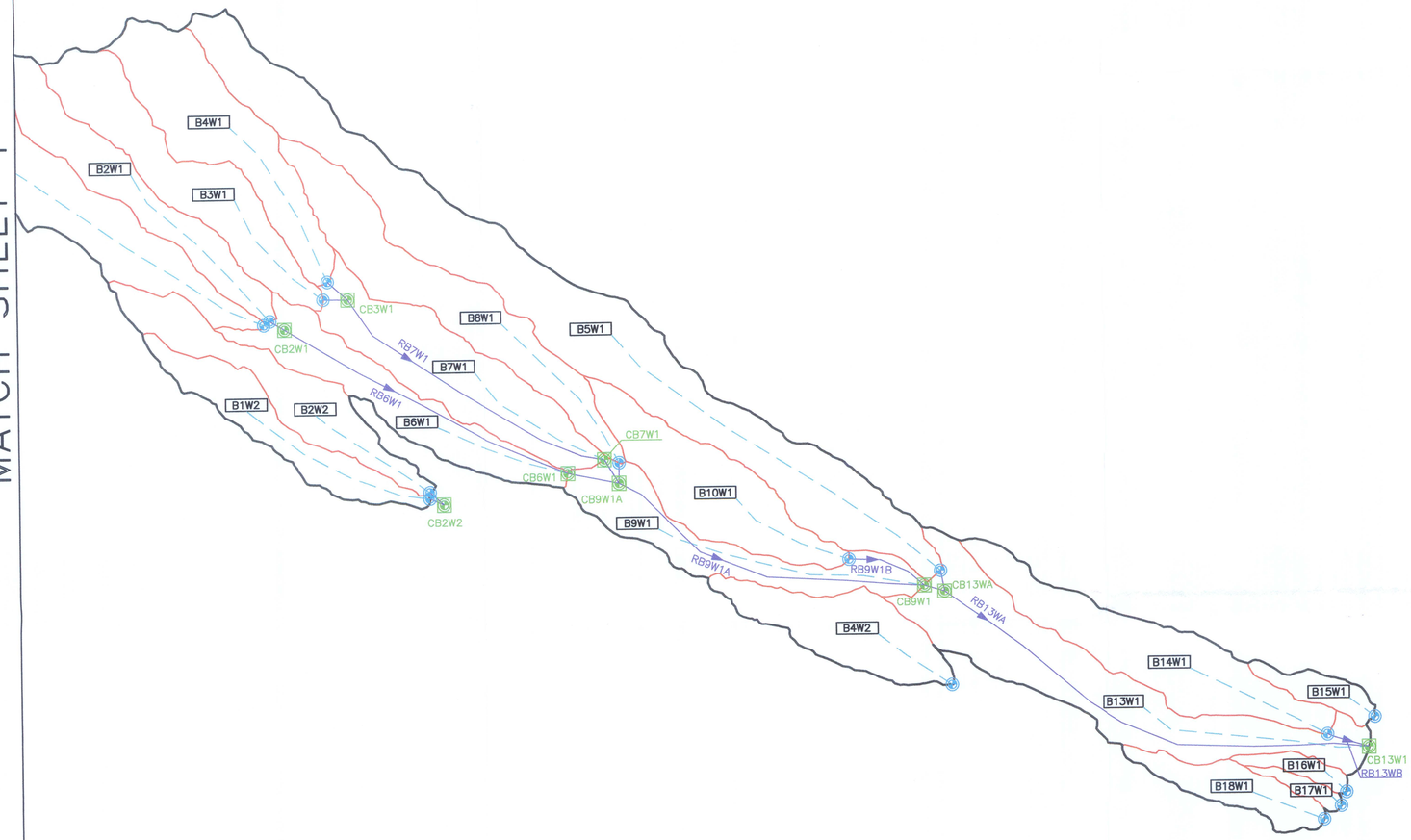
MATCH SHEET 1



Flood Control District of Maricopa County

RIO VERDE AREA
DRAINAGE MASTER PLAN

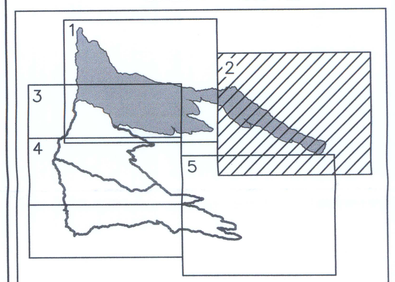
F.D.C. CONTRACT NO. 2001C056

LEGEND

SUB-BASIN LABEL	B6W6
FLOW ROUTING	RB6W6
SUB-BASIN RUNOFF	
HYDROGRAPH BASIN OUTLET	
HYDROGRAPH COMBINE POINT	CP5W4
HYDROGRAPH BASIN OUTLET & DIVERSION POINT	
HYDROGRAPH COMBINE & DIVERSION POINT	CP11C4
STORAGE TANK	
SUB-BASIN BOUNDARY	
WATERSHED BOUNDARY	

N

1000' 0' 1000' 2000'
SCALE: 1"= 1000 FEET



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RIO VERDE ADMP
HYDROLOGY FLOW SCHEMATIC

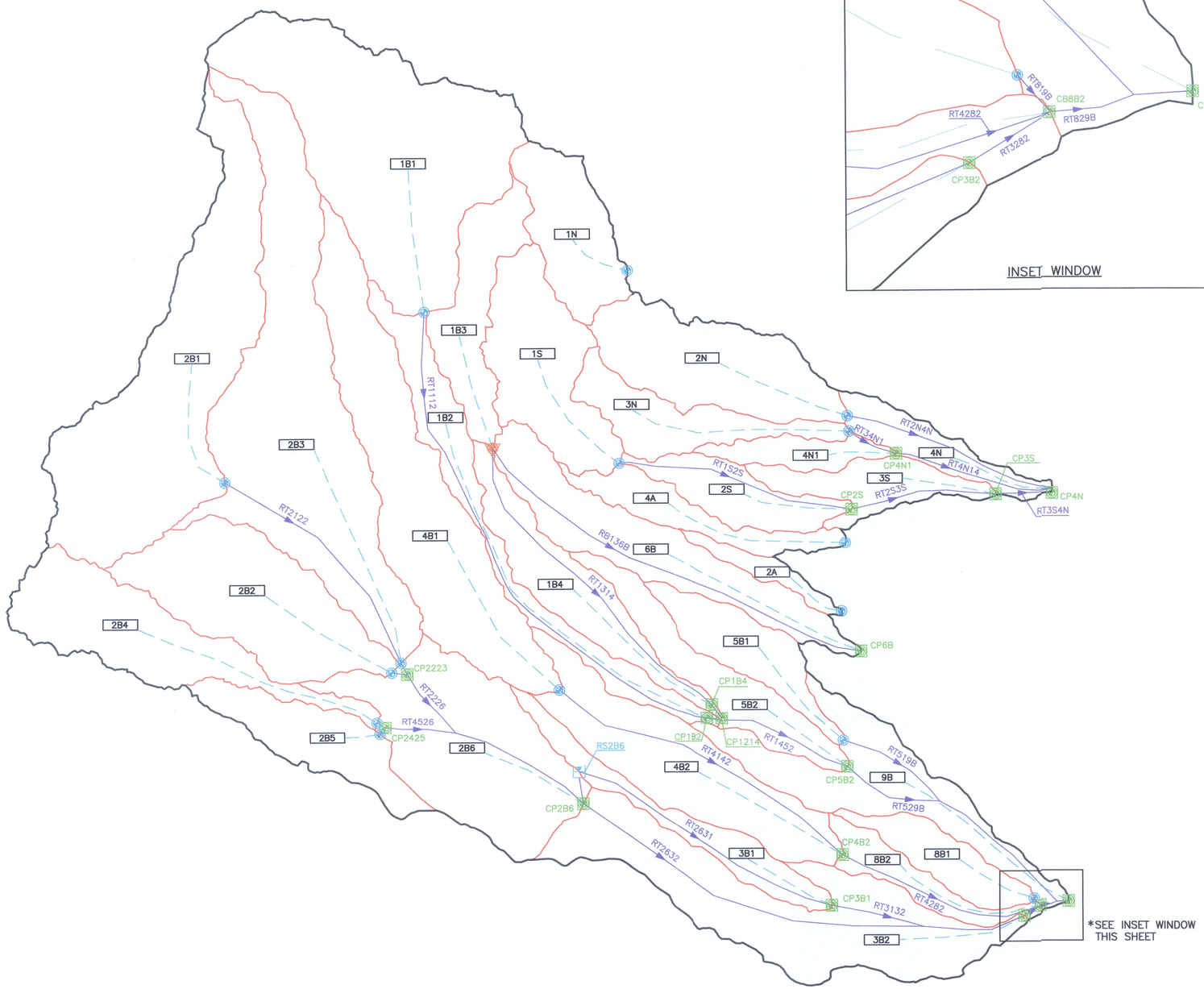
NORTH-NORTH BASIN

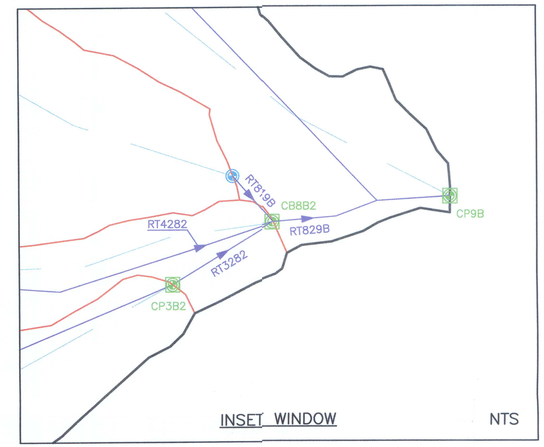
DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

	BY	DATE
DESIGN	JTB	08/31/06
DESIGN CHK.	CCC	08/31/06
PLANS	GTS	08/31/06
PLANS CHK.	CCC	08/31/06

SHEET 2 OF 5

FILE:J:\10-0203\10-0203 Phase 2_and_3\ACAD\0203DR-FD2.dwg DATE:Sep. 18, 2006 TIME: 08:17 am





Flood Control District of Maricopa County

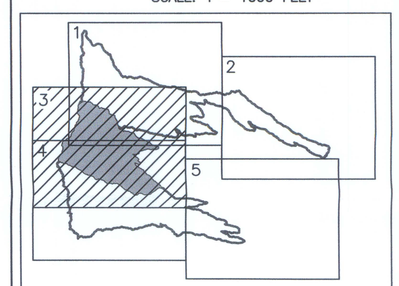
RIO VERDE AREA
DRAINAGE MASTER PLAN
F.D.C. CONTRACT NO. 2001C056

LEGEND

SUB-BASIN LABEL	B6W6
FLOW ROUTING	RB6W6
SUB-BASIN RUNOFF	
HYDROGRAPH BASIN OUTLET	
HYDROGRAPH COMBINE POINT	CP5W4
HYDROGRAPH BASIN OUTLET & DIVERSION POINT	
HYDROGRAPH COMBINE & DIVERSION POINT	CP11C4
STORAGE TANK	
SUB-BASIN BOUNDARY	
WATERSHED BOUNDARY	

N

1000' 0' 1000' 2000'
SCALE: 1"= 1000 FEET



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RIO VERDE ADMP
HYDROLOGY FLOW SCHEMATIC

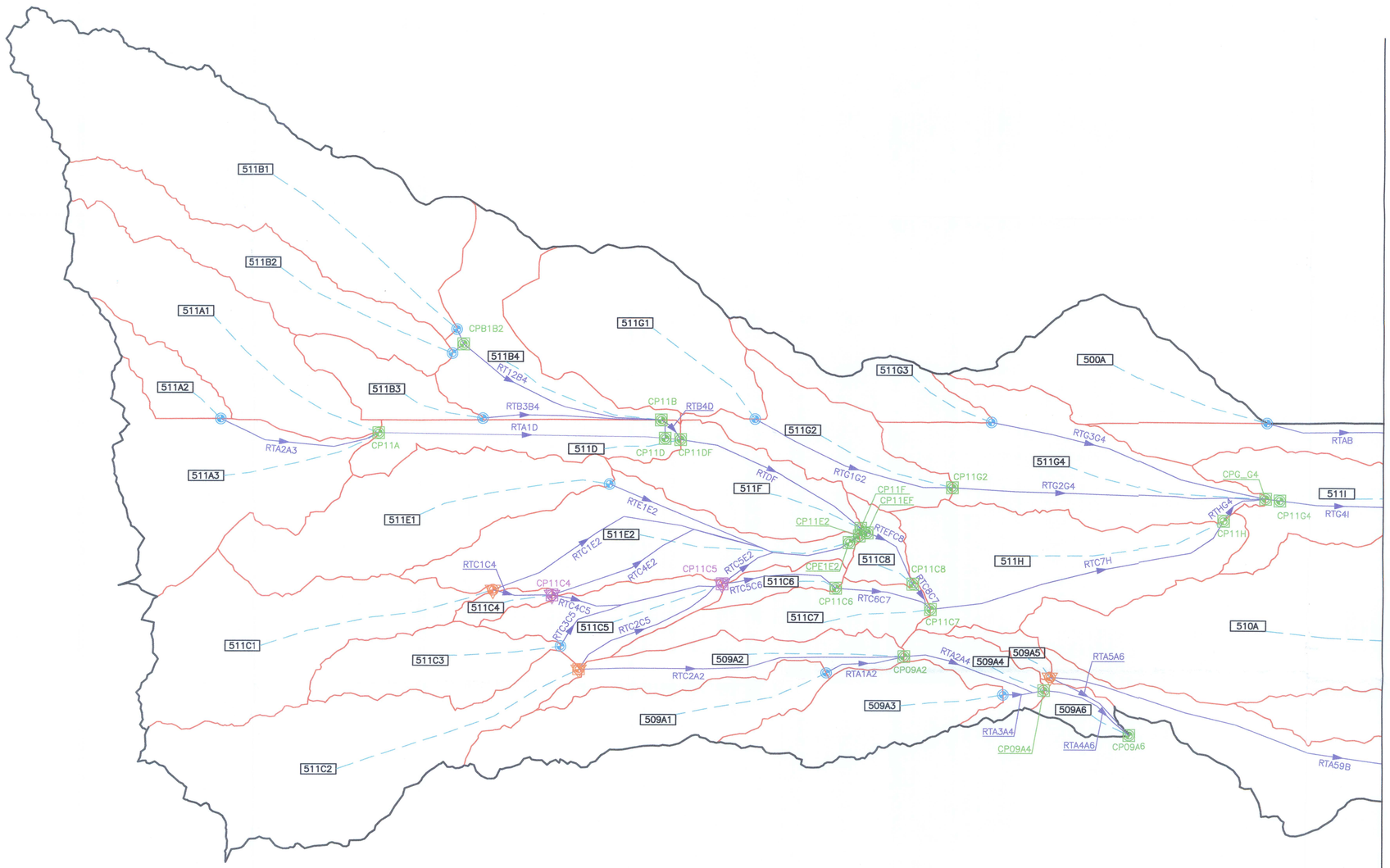
NORTH–SOUTH BASIN

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1952

	BY	DATE
DESIGN	JTB	08/31/06
DESIGN CHK.	CCC	08/31/06
PLANS	GTS	08/31/06
PLANS CHK.	CCC	08/31/06

SHEET 3 OF 5

FILE:u:\10-0203\10-0203 Phase 2_and_3\ACAD\02030R-FD2.dwg DATE:Sep. 18 2006 TIME: 08:18 am



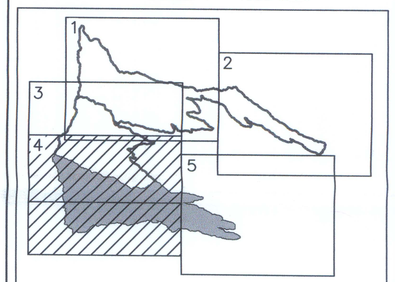
RIO VERDE AREA
DRAINAGE MASTER PLAN
F.D.C. CONTRACT NO. 2001C056

LEGEND

SUB-BASIN LABEL	B6W6
FLOW ROUTING	RB6W6
SUB-BASIN RUNOFF	
HYDROGRAPH BASIN OUTLET	
HYDROGRAPH COMBINE POINT	CP5W4
HYDROGRAPH BASIN OUTLET & DIVERSION POINT	
HYDROGRAPH COMBINE & DIVERSION POINT	CP11C4
STORAGE TANK	
SUB-BASIN BOUNDARY	
WATERSHED BOUNDARY	

N

1000' 0' 1000' 2000'
SCALE: 1"= 1000 FEET



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RIO VERDE ADMP
HYDROLOGY FLOW SCHEMATIC

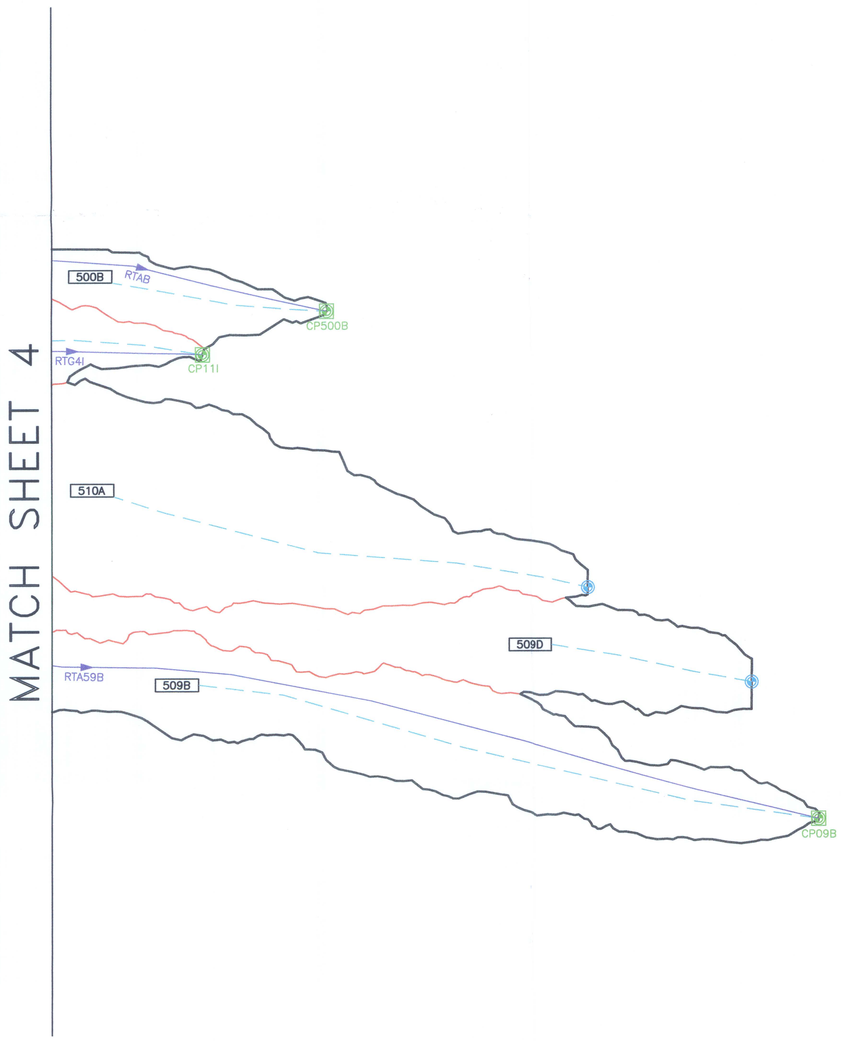
SOUTH BASIN

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1982

	BY	DATE
DESIGN	JTB	08/31/06
DESIGN CHK.	CCC	08/31/06
PLANS	GTS	08/31/06
PLANS CHK.	CCC	08/31/06

SHEET 4 OF 5

FILE:U:\10-0203\10-0203 Phase 2_and_3\ACAD\0203DR-FD2.dwg DATE:Sep. 18 2006 TIME: 08:18 am



RIO VERDE AREA
DRAINAGE MASTER PLAN

F.D.C. CONTRACT NO. 2001C056

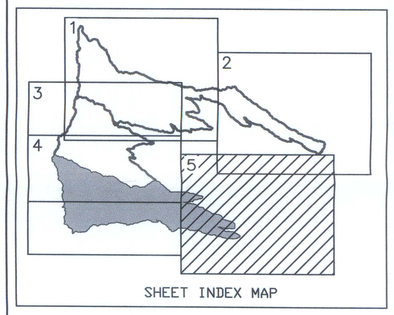
LEGEND

SUB-BASIN LABEL	B6W6
FLOW ROUTING	RB6W6
SUB-BASIN RUNOFF	
HYDROGRAPH BASIN OUTLET	
HYDROGRAPH COMBINE POINT	CP5W4
HYDROGRAPH BASIN OUTLET & DIVERSION POINT	
HYDROGRAPH COMBINE & DIVERSION POINT	CP11C4
STORAGE TANK	
SUB-BASIN BOUNDARY	
WATERSHED BOUNDARY	

N

1000' 0' 1000' 2000'

SCALE: 1"= 1000 FEET



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RIO VERDE ADMP
HYDROLOGY FLOW SCHEMATIC

SOUTH BASIN

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1952

	BY	DATE
DESIGN	JTB	08/31/06
DESIGN CHK.	CCC	08/31/06
PLANS	GTS	08/31/06
PLANS CHK.	CCC	08/31/06

SHEET 5 OF 5

FILE:J:\10-0203\10-0203 Phase 2 and 3\ACAD\0203DR-FD2.dwg DATE:Sep. 18 2006 TIME: 08:18 am