SOMERSETT

STORM DRAINAGE

MASTER PLAN

WRC NEVADA, INC.

CONSULTING ENGINEERS

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Somersett
Storm Drainage Master Plan

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INTRODUCTION AND PURPOSE

INTRODUCTION

This report was prepared to provide a drainage master plan for the Somersett development project. This project lies on the south facing slope of Peavine Mountain (Figure 1) and will impact watersheds that contribute stormwater to existing development in the community of Mogul and to Interstate 80 in the Mogul area. Based upon field investigation and the results of previous studies, the culverts and channel improvements in the Mogul area do not have adequate capacity to convey the 100-year discharge. Therefore, the Somersett Development will incorporate stormwater detention in the design of the project to reduce downstream discharges entering the Mogul area. Because of the potential downstream impact of the drainage on the Mogul area, this master plan was developed to quantify the pre- and post-project discharges entering and exiting the Somersett Development and identify mitigation measures that will be necessary to reduce the post-project flows to a rate that is less than the pre-project rates at the project boundary and within the existing developed area of Mogul.

DESCRIPTION OF PROJECT AREA

The Somersett Development is located on the south slope of Peavine Mountain and the west boundary of the City of Reno in the vicinity of Northgate Golf Course and Mogul Meadows within Sections 1, 2, 3, 10 and 11, T19N, R18E. The project is a planned unit development (PUD) comprised of residential neighborhoods and commercial centers. Access to the project will be through roads and streets connecting to Mae Anne Avenue. The general topography of the site can be described as a combination of islands of gradually slopping terraces separated by very steep ravines. Therefore, the development of this site will be confined to the terraces and to the roadway crossing of the ravines. The 1700 acre PUD lies within a nine square mile watershed that contributes to two concentration points at Interstate 80 at Mogul Meadows.

The upper portion of the contributing watershed is near the top of Peavine Mountain at an elevation of 8300 feet. The lower portion of the watershed is in Mogul at an elevation of 4700 feet. Vegetation in the watershed is predominately sage brush and native grasses with some isolated small areas of Pinion and Juniper. The upper portion of the watershed experienced a brush fire in recent years and is less densely

vegetated. Vegetation cover density varies from approximately 30 to 40% in the lower portions of the watershed to approximately 20% in the upper reaches.

The project area is undeveloped but is traversed by several dirt roads which provide maintenance access to utilities or access to one residence and a water tank. The existing drainage facilities immediately downstream within the Mogul Area consist of earthen channels and box culverts at the roadways. The culverts have less capacity in comparison to the channel. Therefore, the existing culverts at I-80 and are the constraint in hydraulic capacity of the downstream system.

STUDY LIMITATIONS

This study was prepared for the limited purpose of estimating the 5 and 100-year peak discharges entering and exiting the Somersett Development and preliminary identification of detention basin sites to mitigate the impacts of development at a conceptual level of detail. At the time of final design of each unit, the recommendations of this master plan may require refinement or modification as the project undergoes modification.

This report does not address the onsite hydrologic analysis for each unit that will be required for tentative or final plat submittals. Those analyses will need to be performed at the time of final planning and design for each unit. It is assumed that the drainage patterns defined in this Master Plan will be adhered to with final design. ***Any modifications to these drainage patterns (watershed boundaries) will require re-evaluation of the conclusions of this Plan.***

This report should not be relied upon for any other purpose other than those explicitly stated herein, without written confirmation from WRC Nevada, Inc.

BACKGROUND

PREVIOUS STUDIES

The most significant existing drainage related studies that apply to the project are:

- Federal Emergency Management Agency (FEMA) *Flood Insurance Study* (1994) - The Federal Emergency Management Agency (FEMA) prepares floodplain maps for the most significant flooding hazards in the communities that participate in the National Flood Insurance Program (NFIP). As a condition of participation in the NFIP, the community must adopt a floodplain ordinance which enforces the minimum requirements of the NFIP. Washoe County entered the regular program of the NFIP on August 1, 1984. At that time a set of Flood Insurance Rate Maps (FIRM) were published. The *Flood Insurance Study* was originally completed in 1979 and published in 1984. Since that time, the study has been updated to reflect changes or to add additional floodplain areas. The current FEMA FIRMs for the project area became effective on September 30, 1994. The original study considered the eastern drainage in the Mogul area and an approximate 100-year floodplain was delineated for this watercourse (Figure 2) but the other watercourses in the project area were not deemed significant enough for inclusion in the *Flood Insurance Study*. Since the preparation of the original *Flood Insurance Study*, the maps have not been revised for the Mogul area or the project site. The entire site is in a Zone X which is defined as areas of minimal or undefined flood hazards.

- *Washoe County Concept Level Flood Control Master Plan* (Kennedy/Jenks/Chilton, 1991) - This study was prepared as the first step in the master planning process for flood control in the region. The Concept Level Flood Control Master Plan was intended to identify the most significant flood control deficiencies in the region. Volume 2 of this plan provides information regarding the size and capacity of the existing drainage improvements in the Mogul area. A set of flood control facilities were also identified to reduce the hazards for the purpose of determining the order-of-magnitude costs associated with the flood control program within Washoe County, Reno and Sparks. The plan states that the facilities identified were preliminary and were identified for the purpose of determining overall program costs and that the facilities would need to revised during the next step in the planning process when the facility plan can be prepared based on more in-depth analysis of costs and benefits, environmental impacts and other factors. The second phase

of the project was never completed due to funding limitations. With respect to the Somersett area, the plan showed two regional detention basins to address the deficiencies in the Mogul area. The next phase of the planning process may determine that conveyance improvements may be more cost effective. No effort has been made to secure land for these facilities or to prepare feasibility studies for the improvements.

- City of Reno, *Major Drainageways Plan* - The City of Reno has identified "major drainageways" based on the size of the contributing watershed. Figure 3 shows the location of the drainageways identified by Jeff Codega Planning/Design, Inc. based on the criteria established by the City of Reno for Major Drainageways. The goal of the project is to minimize disturbance of the major drainageways with the design and construction of this project. Disturbance of the major drainageways is necessary to accomplish stormwater detention. The disturbance will be minimized by use of roadway embankments for the detention basin embankment. The disturbance to the Major Drainageways will consist of roadway fill and upstream excavation of the channel area for sediment and water volume enhancements. Therefore, the analyses associated with the *Somersett Storm Drainage Master Plan* assumes that these natural channels are unaltered except where shown on the conceptual grading plans prepared by Jeff Codega Planning/Design.

STORMWATER DETENTION REQUIREMENTS

In order to mitigate the impact of the project on downstream peak discharges, the project is required by the City of Reno to provide stormwater detention to decrease the post-project discharges to pre-project rates downstream of the project site for the 5- and 100-year recurrence intervals. This master plan identifies 12 detention basin sites that are needed to accomplish this goal. Since the goal of the project is to minimize disturbance of the natural watercourses, the majority of the stormwater detention basins will be incorporated into the roadway embankments. At the locations where elevated roadway embankments provide significant potential storage volume, a drainage structure will be designed with a low level outlet and a riser with an emergency overflow to meter the flow rate behind the embankment to provide detention of the offsite flows. These basins will be discussed in more detail in later sections of this report.

TOPOGRAPHIC DATA

Topographic mapping for the project site was prepared by Nevada Aerial Mapping based on aerial photographs taken on May 9, 1997. This mapping was prepared with a contour interval of one foot.

PRELIMINARY GRADING PLANS

Preliminary grading information and a watershed map for the proposed condition was provided to WRC by JCPD. These plans have been prepared at a conceptual level of detail and may be subject to change with final design.

HYDROLOGIC ANALYSES

SELECTION OF HYDROLOGIC MODEL

The Corps of Engineers Flood Hydrograph Package, HEC1E is the hydrologic model recommended in the Draft Hydrologic Criteria and Drainage Design Manual (HCDDM) prepared for Washoe County (WRC, 1996). This is the model that was selected for use in this study. The extended version of HEC-1 (HEC-1E) was used to allow the use of shorter computational time intervals for modeling the detention basins.

The methods employed as a part of this study are based on the U.S. Soil Conservation Service (SCS) methods (1972, 1986) as describe in the HCDDM. This section describes those methods and the critical assumptions used in this analysis.

DESIGN RECURRENCE INTERVAL

As required by the City of Reno, the recurrence intervals of primary interest for this project are the 5- and 100-year events. At this stage in the planning process, other return periods were not evaluated.

DRAINAGE AREA

The drainage areas were delineated based on the site topographic mapping prepared by Nevada Aerial Mapping and USGS 7.5 minute topographic maps. The watersheds were digitized and measured by Jeff Codega Planning/Design. Since this project will be constructed in phases, the drainage boundaries after the completion of each phase differ. This fact was important for the evaluation of the hydrology for each phase of development. Figures 4, 5, 6 and 7 show the watershed boundaries after the completion of Phases 1, 2, 3 and 4, respectively. Figure 8 shows the existing watershed boundaries and Figure 9 shows the watershed boundaries after the project is completed, based upon the preliminary grading information provided by Jeff Codega Planning/Design.

DESIGN RAINFALL DATA

Rainfall depths for each duration and recurrence interval were computed using the rainfall maps presented in the HCDDM. These maps represent the preliminary results of a study by the National Weather Service to replace NOAA Atlas 2. The rainfall values presented are greater than the values in NOAA Atlas 2 for the study area resulting in higher estimates of flow for the study area in comparison to previous studies. Because of the significant rainfall differences between the lower and upper ends of the watershed, it was necessary to develop independent estimates of rainfall depths for each sub-basin. The resulting values are included in Appendix A.

The design rainfall is entered into the model using a PH record with produces a triangular hyetograph with the peak rainfall occurring in the center of the 24 hour rainfall duration. This type of distribution contains the peak rainfall values for every duration within a 24 hour period and is generally considered conservative since it includes potential thunderstorm rainfall and longer duration values as well.

ESTIMATION OF RUNOFF CURVE NUMBER

The SCS rainfall-runoff modeling procedures are based on a loss function that is described with a single parameter identified as the runoff curve number. The SCS has developed curve numbers based on empirical studies and present tables of approximate values based upon soil type, relative soil moisture content, vegetation type and vegetation cover density.

Soil type is typically derived from the SCS soil surveys. These soil surveys classify all soils contained in the survey into one of four "hydrologic soil groups"; A, B, C and D. Type A soils have a very low runoff potential and are typically very porous soils such as sandy and cobbly soils. Type D soils are soils which have a high runoff potential such as a very rocky soils, soils with a well developed desert pavement or soils with a shallow impervious layer. Soils from this study were identified using the SCS soil survey of Washoe County (1983). This soil survey data includes a description of each major association and its characteristics and hydrologic soil group. The soils found in the study area are shown on Figures 4 and 5 by soil unit number.

Another factor that impacts the curve number estimate is relative soil moisture content. This factor is described by the SCS using a relative term described as "antecedent moisture condition" (AMC). The

SCS has identified three different antecedent moisture conditions; AMC I, AMC II, and AMC III. AMC I is a condition in which the soil moisture has been depleted by a relatively long period of no rainfall and is assumed to be the condition that represents the condition when the soil has its highest infiltration rate. AMC II is an average condition and is the condition usually assumed to be present in the watershed for most hydrologic studies for drainage design. AMC III is the condition in which soil moisture is high due to recent rainfall or snowmelt. This condition is assumed to be the condition in which the soil infiltration capacity is at its lowest point and is usually used for probable maximum discharge studies. AMC II is the condition used for this study.

Vegetation type refers to the type of land use or plant community which occupies the watershed. The SCS has identified curve numbers for various typical plant communities and typical land use types. The vegetation types which best describe the plant communities encountered in the study area include; sage-grass and residential (with densities from 4 to 6 units per acre).

WATERSHED LAG TIME

Watershed lag time is defined by the SCS as the time difference between the centroid of the rainfall excess and peak runoff from the watershed. This parameter can be estimated using a variety of methods. The method used in this study is a velocity based method described in the HCDDM that divides the watershed into an overland flow reach and channel reaches to determine the travel time from the watershed divide to the outlet. This travel time is then multiplied by an empirical factor (SCS, 1974) to estimate lag time. The results were compared to the modified version of the U.S. Bureau of Reclamation (USBR) method as presented in the HCDDM.

In order to estimate the velocities in the channel reaches, typical channel dimensions were determined for each typical reach. Where flow is in natural or unlined channels on steep slopes, it was assumed that the flow depths would be at critical depth. Previous research has shown that supercritical flows in natural channels are very rare and unstable. Therefore, flows less than critical depth (normal depth) do not usually occur for significant distances or durations in natural channels. Based on the typical channel geometries selected, critical slope was consistently less than actual slope which simplified the velocity estimation technique since the velocities were only dependant on discharge rather than channel slope. A summary methods of analysis and results is presented in Appendix B.

HYDROLOGIC ROUTING

Computed hydrographs must be routed downstream to the next concentration point in the model. HEC-1 provides a number of methods for routing those hydrographs downstream to the next concentration point. All channel routing reaches in the model have been analyzed using the Muskingum-Cunge method. The detention basins were routed using the Modified Puls reservoir routing method.

DETENTION BASIN OUTLET PARAMETERS

The location of the proposed detention basins are shown on Figure 10. The preliminary configuration of each basin is contained in Appendix E with supporting calculations for each.

The HEC-1 model for the nine detention basins described in this plan use an orifice configuration for the pipe inlet. These orifice configurations can be generally described as multiple outlets or staged outlets. An orifice size was selected for each event, the 5-year and the 100-year event, and a stage vs discharge curve was either calculated by hand, or the orifice parameters were entered into the model as SS and SL cards. Where detention routing of the peak discharge was desired for both the 5 year event and the 100 year event, the discharge form both curves were added together and entered at the given elevation. Where detention routing of the peak discharge was desired for only one event, then only the curve for that orifice was entered into the model of the parameters were directly entered into the SS and SL cards. An orifice coefficient of 0.60 was used in all of the orifice flow calculations. The final outlet configuration was determined as the combination of opening areas at optimum depths that provided the maximum detention routing of the peak discharge in both the events. Some of the detention sites do not allow for the routing of both the 5-year and 100-year events. In cases the outlet was sized to detain only one event. In the case where only the 5-year event was to be detained, the high flow outlet was oversized to allow unobstructed flow. In the case where only the 100-year event was to be detained, no low flow outlet was specified.

At the time of final design, the detention basin routing will need to be modified to reflect the final design configuration and refined to accurately reflect the design condition with respect to both volume and hydraulic performance.

MODELS PREPARED

Three sets of analyses performed to evaluate the Somersett project:

- Pre-Project Condition Analysis - An HEC-1 model was prepared to represent the existing condition. The watershed boundaries and major concentration points are shown on Figure 4 for the existing condition without any of the subdivision or roadway improvements associated with the Somersett project. The HEC-1 models for the 5-year analysis is contained in Appendix C. The 100-year models are included in Appendix D.

- Post-Project Condition Without Mitigation - The existing condition model was revised in the project area to reflect the changes in flow patterns, impervious area and drainage improvements associated with the Somersett Development as currently proposed by Jeff Codega Planning/Design. The watershed boundaries for the post-project condition are shown on Figure 10. The HEC-1 models for the 5-year analysis is contained in Appendix C. The 100-year models are included in Appendix D.

- Post-Project Condition With Detention - As described above, the project will include several detention basins to detain stormwater in the major watercourse behind the proposed roadway embankments. This third model is identical to the Post-Project condition model with exception to the addition of the detention basins. The locations of the proposed detention basins are noted on Figure 10. The HEC-1 models for the 5-year analysis is contained in Appendix C. The 100-year models are included in Appendix D.

- Interim Post-Project Conditions - A model was prepared for each phase of development as shown on Figure 11. Appendix F contains these models.

RESULTS

The results of the hydrologic analyses are summarized in Table 1 for the 5- and 100-year events. Table 2 presents the results at each of the downstream points after the completion of each phase of development. The HEC-1 models for the 5-year analysis is contained in Appendix C. The 100-year models are included in Appendix D. The results of the hydrologic analysis reveal the following significant results and

conclusions:

- The drainage structures in the Mogul area have sufficient capacity for approximately the 5-year recurrence interval. Flow rates in excess of the 5-year may result in some localized overtopping of roadways at some of the channel crossings and at the I-80 frontage road and underpass. In a 100-year event flows will exceed channel and culvert capacities in the Mogul area and cause flooding of private properties in the vicinity of the channel and in areas inundated by backwater from roadway embankments.

- The proposed condition for Somersett, without mitigation, would increase the peak discharges to the Mogul area significantly. Therefore, mitigation of these potential increases utilizing stormwater detention as necessary. Twelve stormwater detention basins have been identified and preliminary design concepts have been developed and included in the Master Plan models.

- The analysis of the post-project condition with the proposed detention basins for the 5- and 100-year recurrence intervals show decrease in the peak flow rates downstream of the project. At CP1, the 100-year post-project flows show only a minor decrease over pre-project conditions (232 cfs reduced to 219 cfs). There is a significant decreases in downstream flows in the 100-year event in the eastern Mogul channel identified as CP2 (from 3448 cfs to 2094cfs) and at the I-80 Interchange (CP 10) (from 2660 cfs to 1944 cfs).

CONCLUSIONS AND RECOMMENDATIONS

Use of the roadway embankments for the purpose of providing stormwater detention minimizes the disturbance of the major drainageways and provides a location of the outlet that can be more easily monitored and maintained. However, the stormwater detention/flood control needs of the project will need to supercede the goals of the Major Drainageways Plan with respect to the goal of utilizing large span structures at the channel location. Performing detention at other locations would likely result in greater disturbance of the watercourse and adjoining areas in order to increase storage volume through excavation and construction of the outlet structure and maintenance access roadways.

The mitigation measures identified in this Master Plan significantly reduce the predicted peak discharges for the two largest watercourses that pass through the Mogul area. However, the drainage facilities under I-80 and within the Mogul area still will not be inadequate to pass the detained flows. Therefore, this project will significantly reduce, but not eliminate, the flooding potential within the Mogul area.

At the time of final design, the design of the roadway embankment and associated drainage facilities will need to consider the following:

- Sediment storage volume will need to be provided at the inlet of the culvert to prevent obstruction of the culvert opening.

- Detention Basin 11 stores 34 acre-feet at the time of peak stage. Since this volume is over 20 acre-feet, a dam safety permit may be required from the State Engineer for this basin at the time of final design.

- Debris control and trash racks will be needed on the inlets of the drainage structure to prevent clogging that will reduce hydraulic capacity.

- The drainage structures will need to include emergency overflow risers to prevent overtopping of the roadway embankment should the primary outlet become obstructed.

- The embankment will need to be designed to provide maintenance access to the inlet of the structure and sediment storage area(s).

- The culvert outlet will need to included erosion control and energy dissipation structures to be determined during final design.

- The culvert will need to be designed with headwalls and potentially cutoff walls to prevent piping around the culvert under "high head" conditions.

- The geotechnical engineer will need to provide recommendations regarding the placement and specifications for the roadway fill which considers the impoundment depths and durations anticipated.

- Excavation of the area upstream of the roadway should be considered for increasing stormwater storage volume and augmentation of the performance of the detention basins.

CONSTRUCTION PHASING

As can be seen from the results, the detention basins provided within each phase of development as shown on Figure 11 provide adequate mitigation for that phase of the development. Since the site grading modifies the drainage boundaries and disturbance of the site during construction will increase the runoff potential, it will be necessary to construct the detention basins that are a part of that phase at the time that site grading begins. Therefore, at the beginning of the construction of Phase 1, detention basins 1, 3, 4 and 11 will need to be constructed. At the beginning of the construction of Phase 2, detention basins 2 and 13 will need to be constructed. At the beginning of the construction of Phase 3, detention basin 12 will need to be constructed. At the beginning of the construction of Phase 4, detention basins 6, 9 and 10 will need to be constructed. At the beginning of the construction of Phase 5, detention basins 5, 8 and 14 will need to be constructed.

LIMITATIONS

This master plan was prepared for the limited purpose of evaluating the preliminary design of the Somersett Development and development of concept level stormwater detention basins needed to mitigate project impacts. The analysis was based on preliminary grading plans provided by Jeff Codega Planning/Design (April 1997). At the time of final design the hydrologic and hydraulic analyses must be

updated and more detailed hydraulic design will be necessary. Should changes be made to the location of roadway improvements, site grading, location of detention basins or other significant site changes, revisions to the hydrologic analyses will be necessary. The results of this analysis should not be used for any other purpose other than those explicitly stated above without written verification from WRC.

REFERENCES

Sources of information used in this analysis included the following references:

Federal Emergency Management Agency. September 30, 1994. Flood Insurance Study, Washoe County, Nevada.

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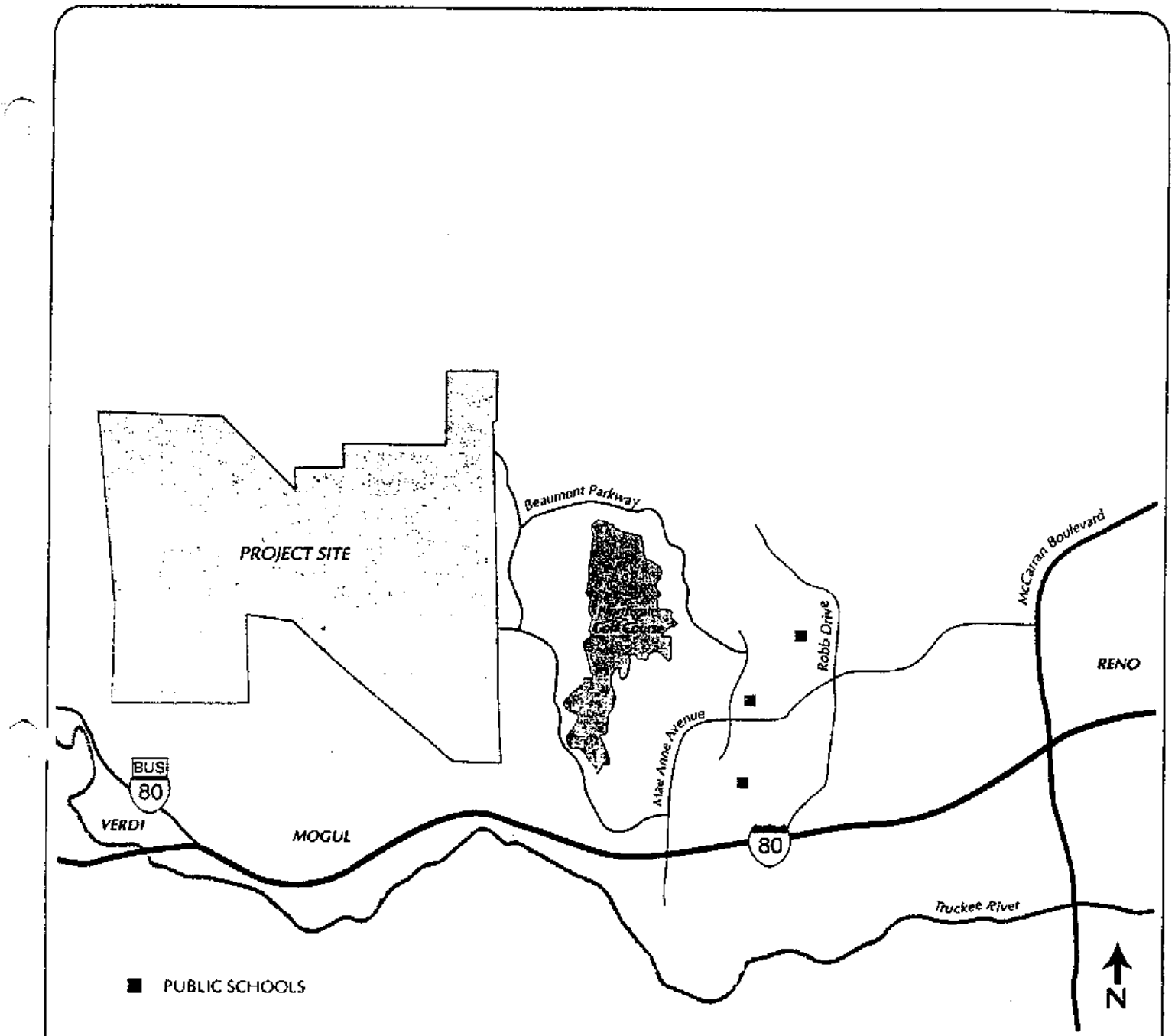
Table 1
Estimate of 5- and 100-year Peak Discharges

Concentration Point	HEC-1 ID	Existing 5-year Discharge (cfs)	No Detention 5-year Discharge (cfs)	With Detention 5-year Discharge (cfs)	Existing 100-year Discharge (cfs)	No Detention 100-year Discharge (cfs)	With Detention 100-year Discharge (cfs)
CP1	MogulW	43	66	44	232	313	219
CP2	MogulE	600	616	371	3448	3505	2094
CP3	CP CB1	591	603	362	3367	3412	2052
CP4	CP B1	252	295	196	1452	1539	1178
CP5	CP B11	149	122	122	821	745	745
CP6	SA B8A	44	41	41	214	219	219
CP7	DB11	328	322	177	1708	1696	1187
CP8	CP C7	245	243	243	1207	1202	1202
CP9	SA C8	71	57	57	256	256	256
CP10	I-80	451	601	429	2660	2900	1944
CP11	CP A2	387	400	314	2128	2068	1422
CP12	CP4811	375	380	294	2031	1987	1359
CP13	CP A5	142	141	90	763	739	569
CP14	CP A7	125	116	116	633	612	612
CP15	CPA910	158	187	142	784	500	538
CP16	CP E4	59	177	92	388	713	400
CP17	SA E2	1	1	1	39	38	38

Table 2
Evaluation of Interim Conditions After Completion of Each Phase

Concentratio Point	HEC-1 ID	Existing 5-year Discharge (cfs)	Phase I Only With Detention 5-year Discharge (cfs)	Phase I And II Onl With Detention 5-year Discharge (cfs)	Phase I To III Only With Detention 5-year Discharge (cfs)	Phase I To IV Only With Detention 5-year Discharge (cfs)	Phase I To V With Detention 5-year Discharge (cfs)
CP1	MogulW	43	43	44	44	44	44
CP2	MogulE	600	372	369	372	372	371
CP10	I-80	451	451	451	412	361	429

Concentratio Point	HEC-1 ID	Existing 100-year Discharge (cfs)	Phase I Only With Detention 100-year Discharg (cfs)	Phase I And II Onl With Detention 100-year Discharg (cfs)	Phase I To III Only With Detention 100-year Discharg (cfs)	Phase I To IV Only With Detention 100-year Discharge (cfs)	Phase I To V With Detention 100-year Discharg (cfs)
CP1	MogulW	232	232	219	219	219	219
CP2	MogulE	3448	1987	2069	2094	2094	2094
CP10	I-80	2660	2660	2660	2160	1896	1944



SOMERSETT

JEFF CODEGA PLANNING/DESIGN, INC.
1466.0003 December 26,1997

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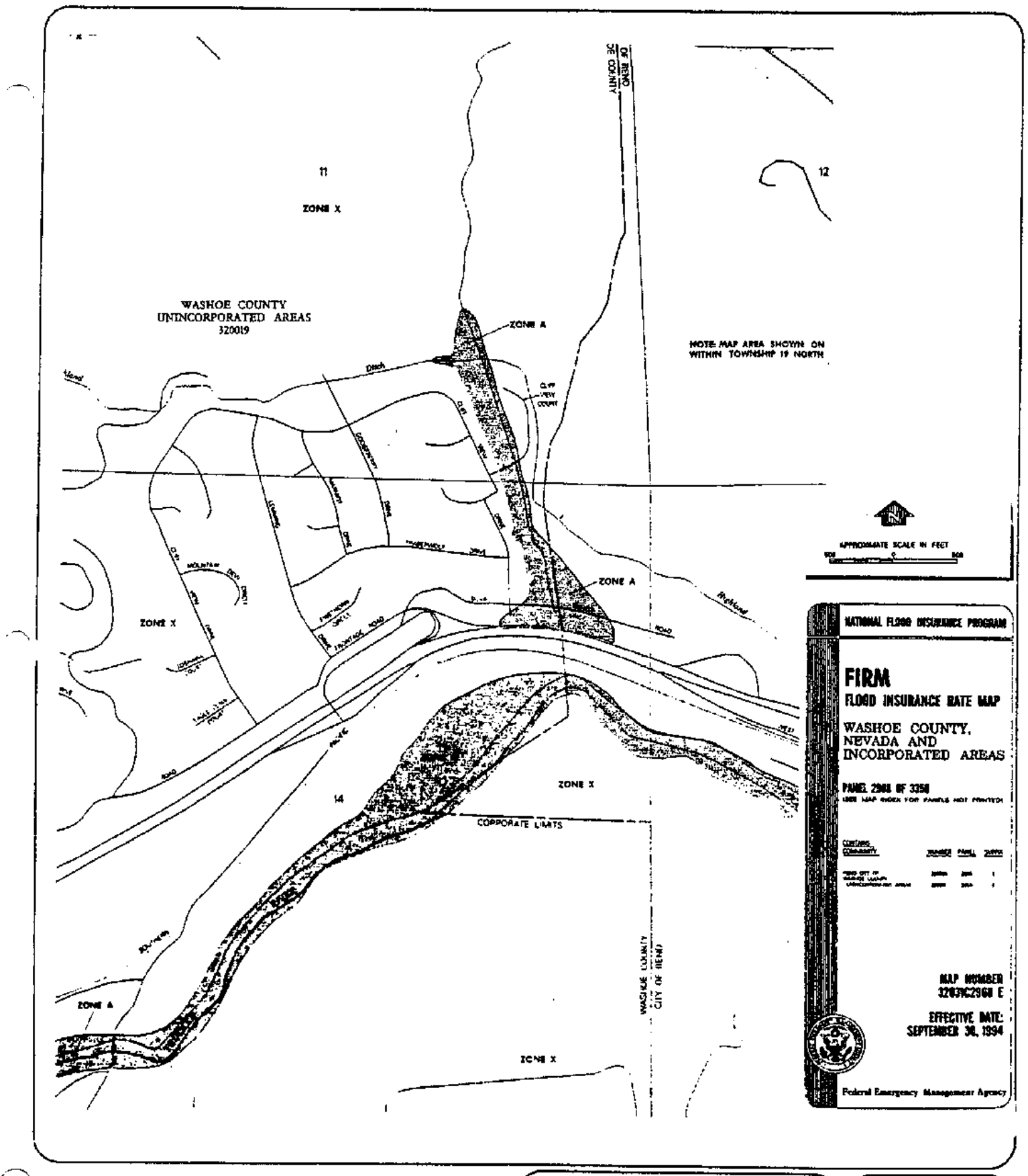
Somersett
Storm Drainage Master Plan

Location Map

Figure 1



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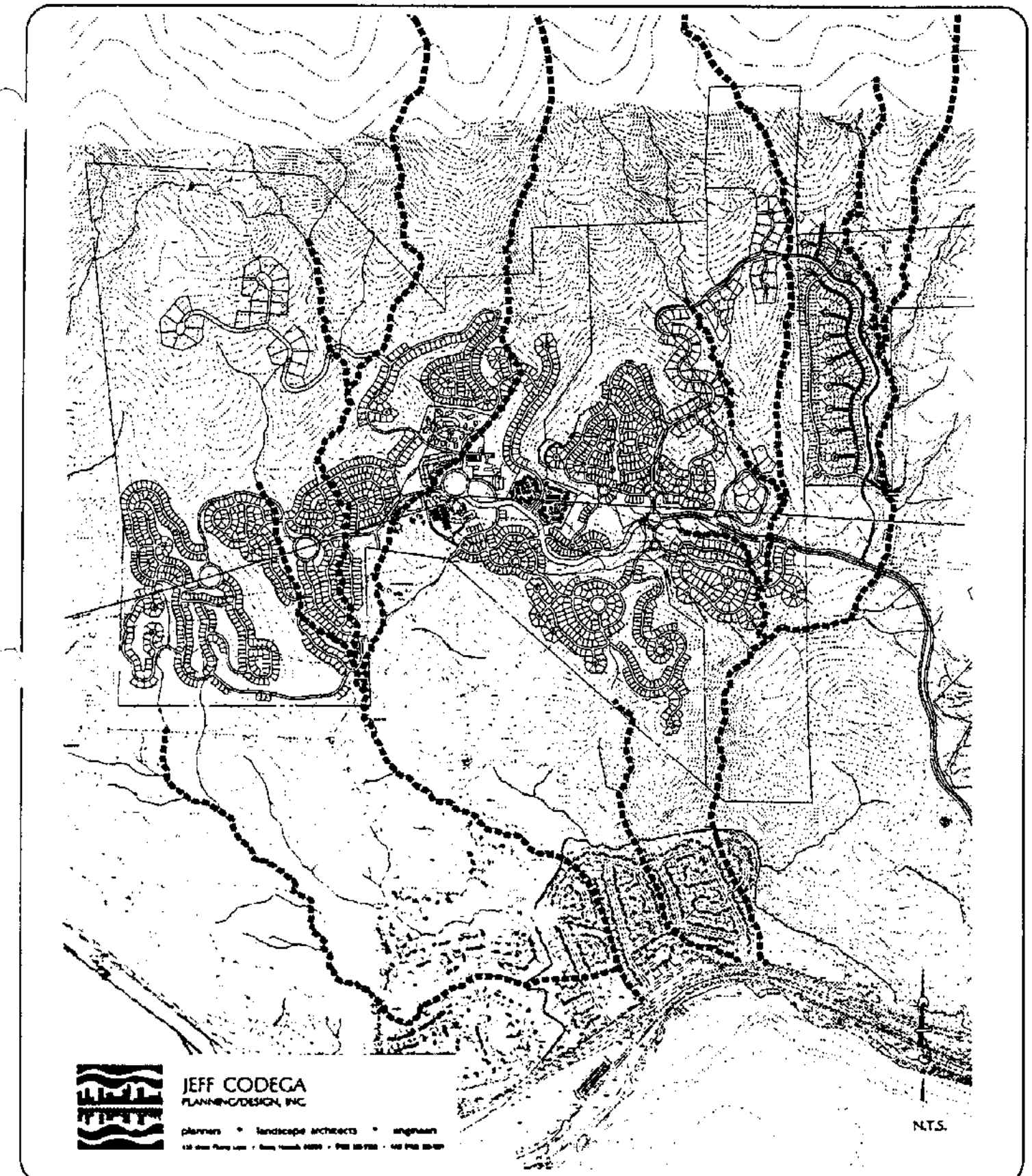
FEMA Flood Insurance Rate Map

Figure 2



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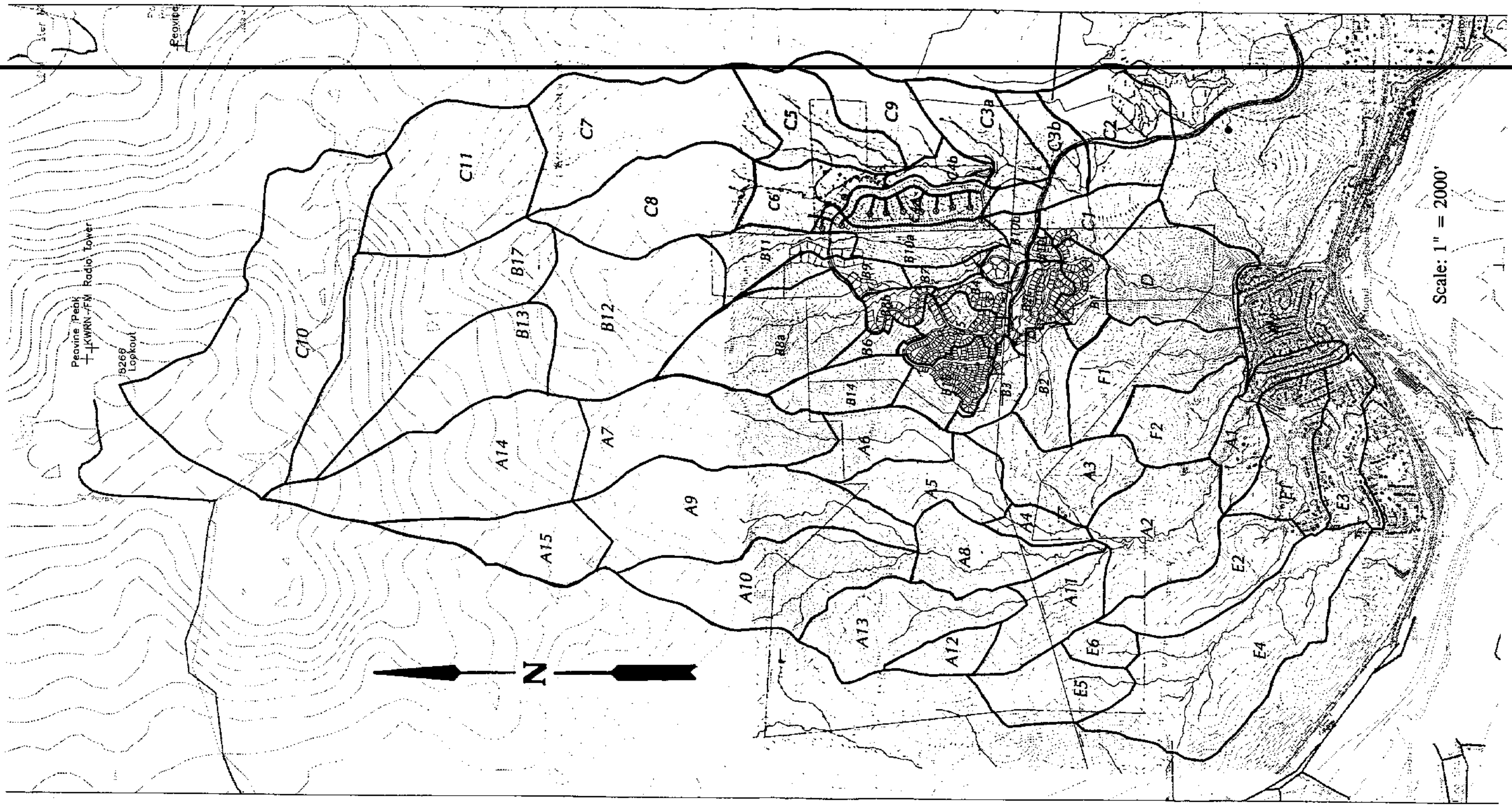
Somersett
Storm Drainage Master Plan
Major Drainageways
City of Reno

Figure 3



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Somersett
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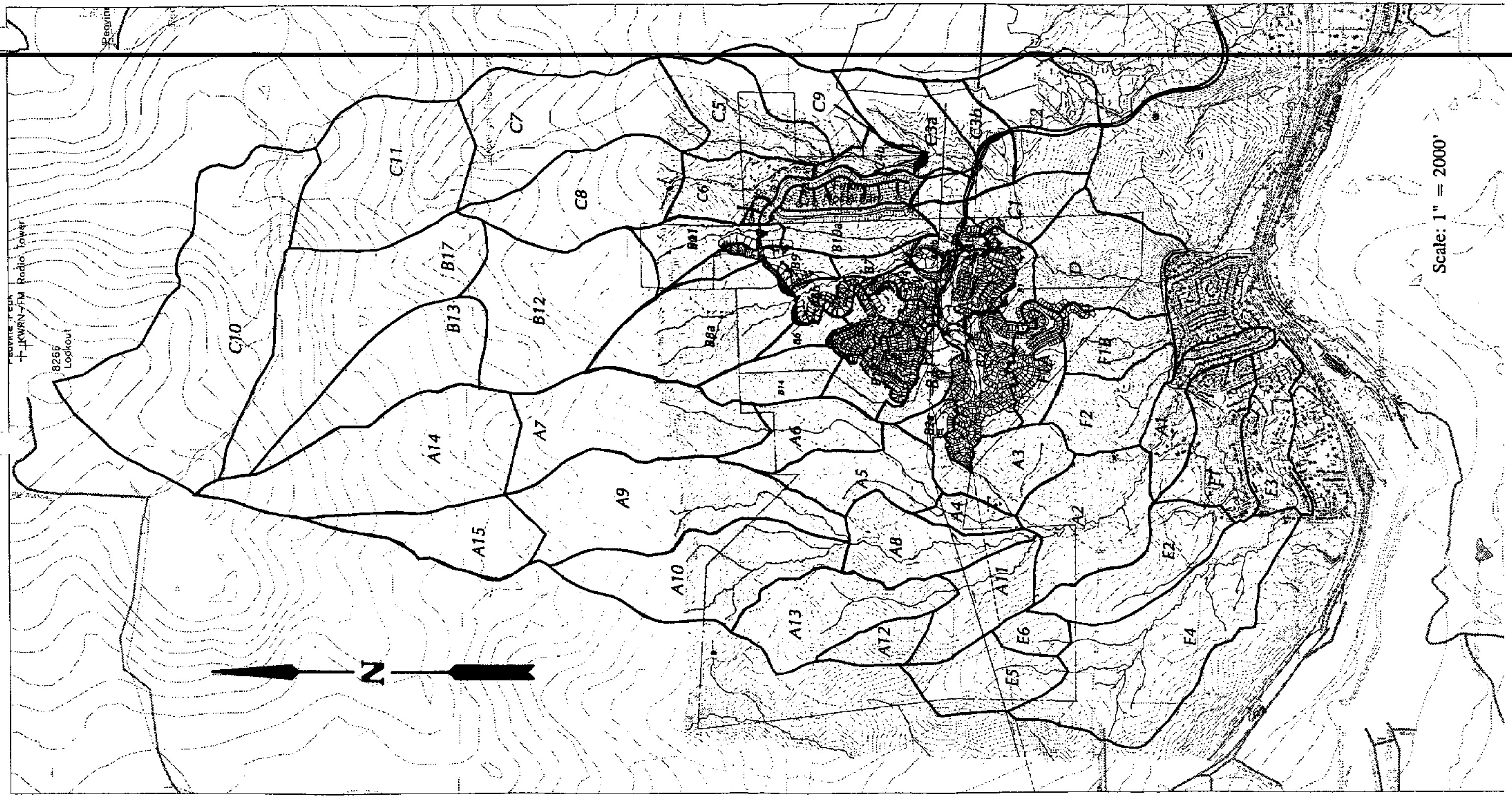
Watershed Map
Proposed Condition-Phase I

Figure 4



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Somersett
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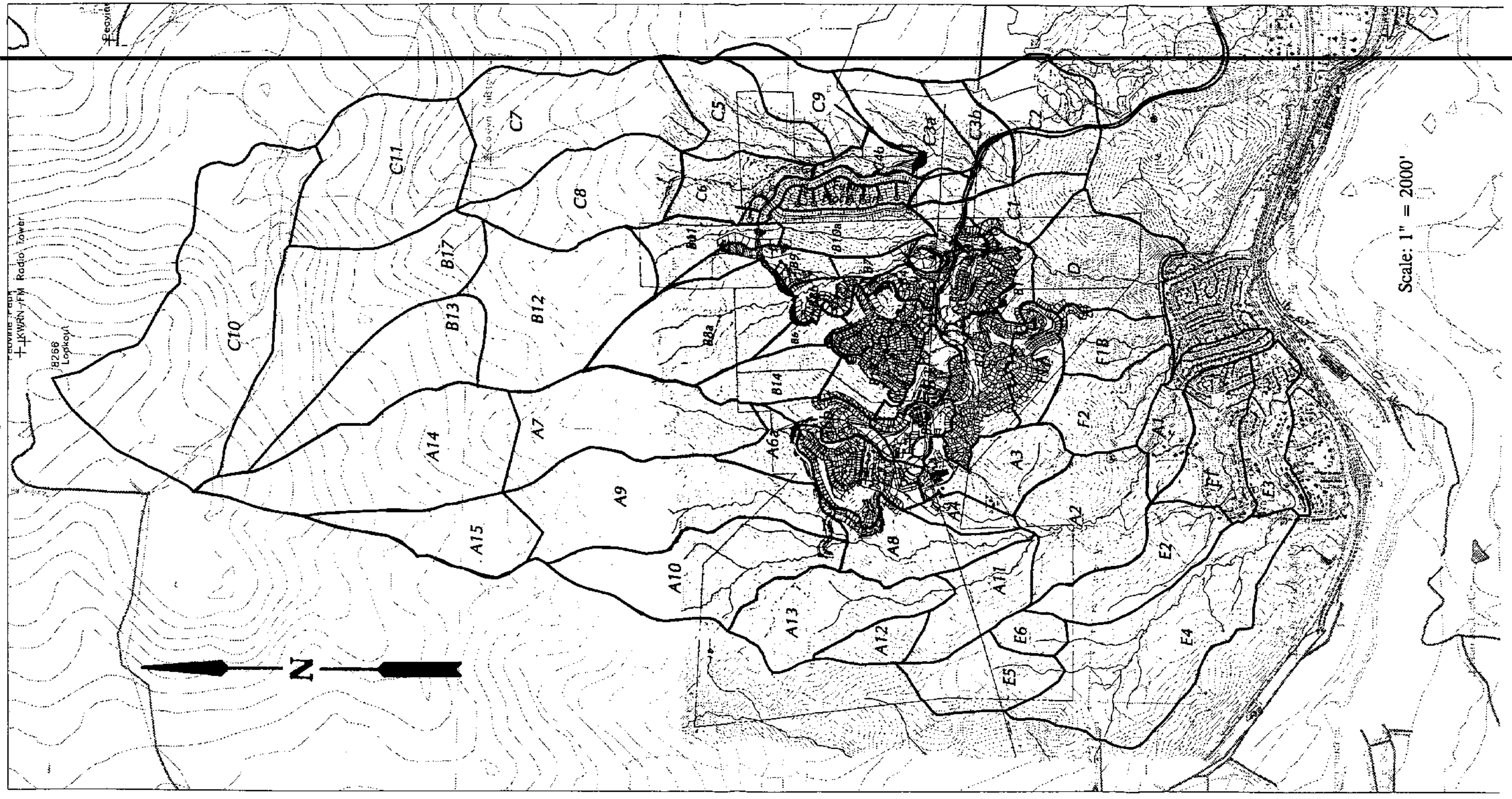
Watershed Map
Proposed Condition -
Phase I - II

Figure 5



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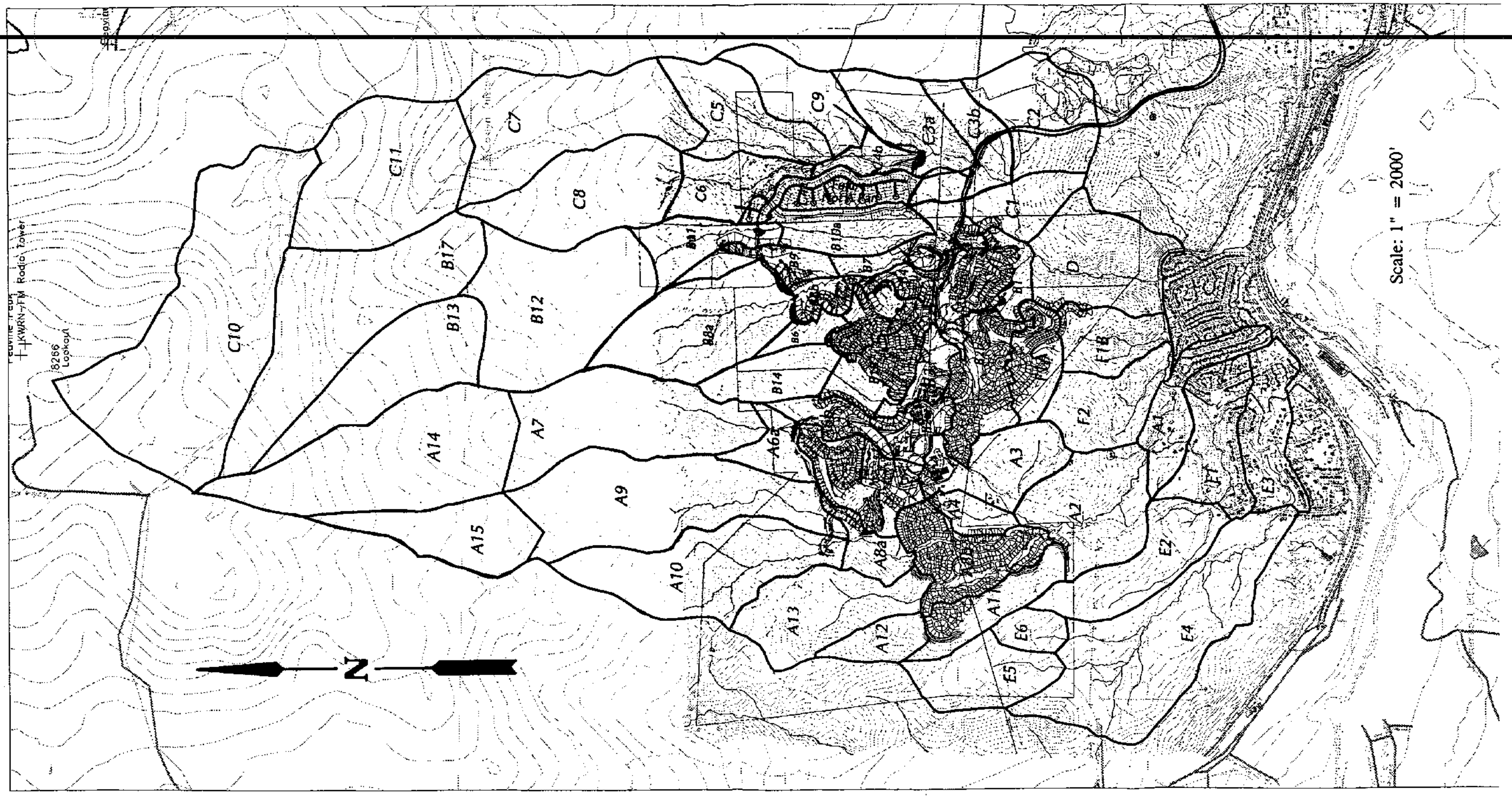
Watershed Map
Proposed Condition -
Phase I - III

Figure 6



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Somersett
Storm Drainage Master Plan
Watershed Map
Proposed Condition -
Phase I - IV

Figure 7

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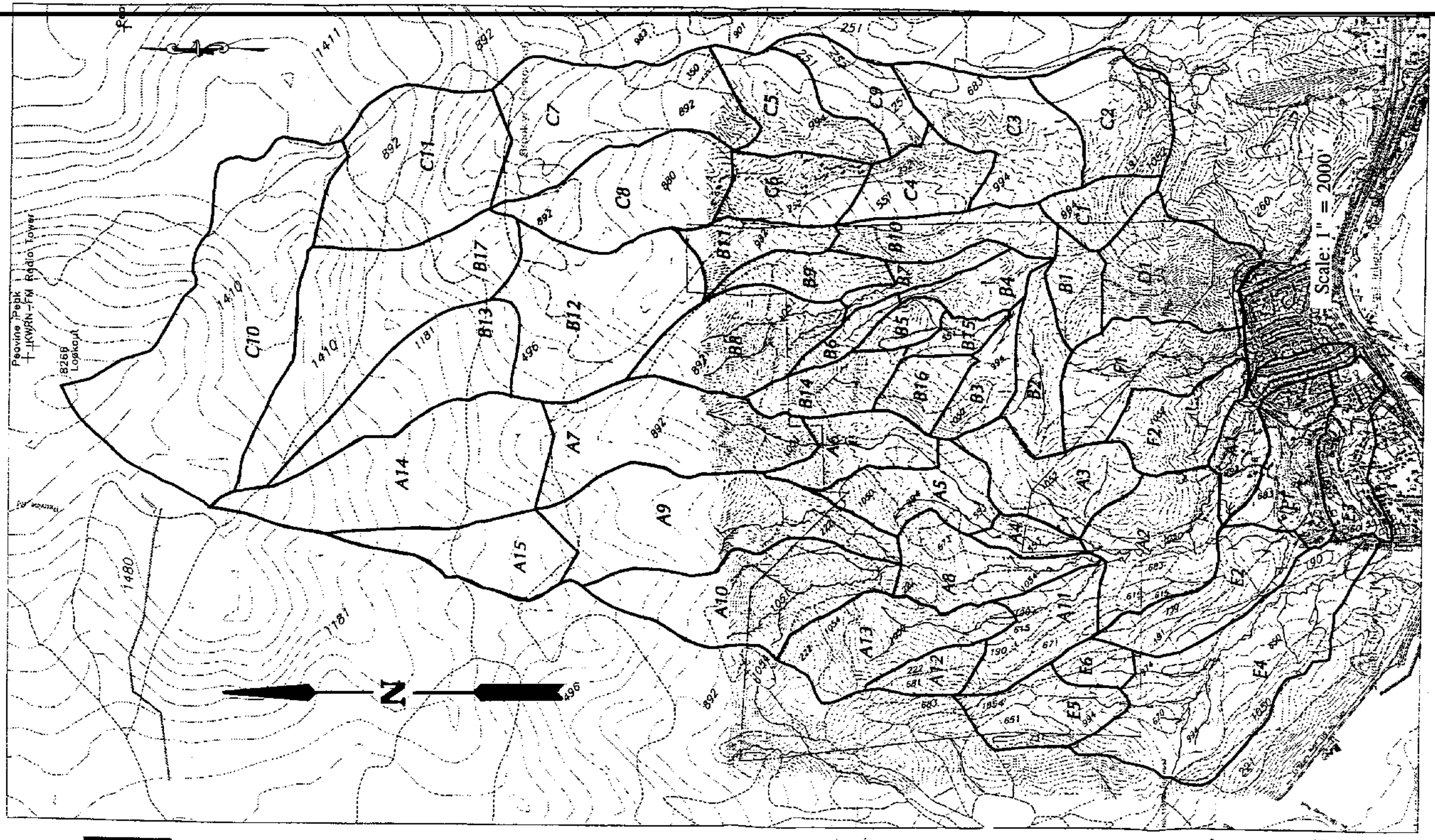

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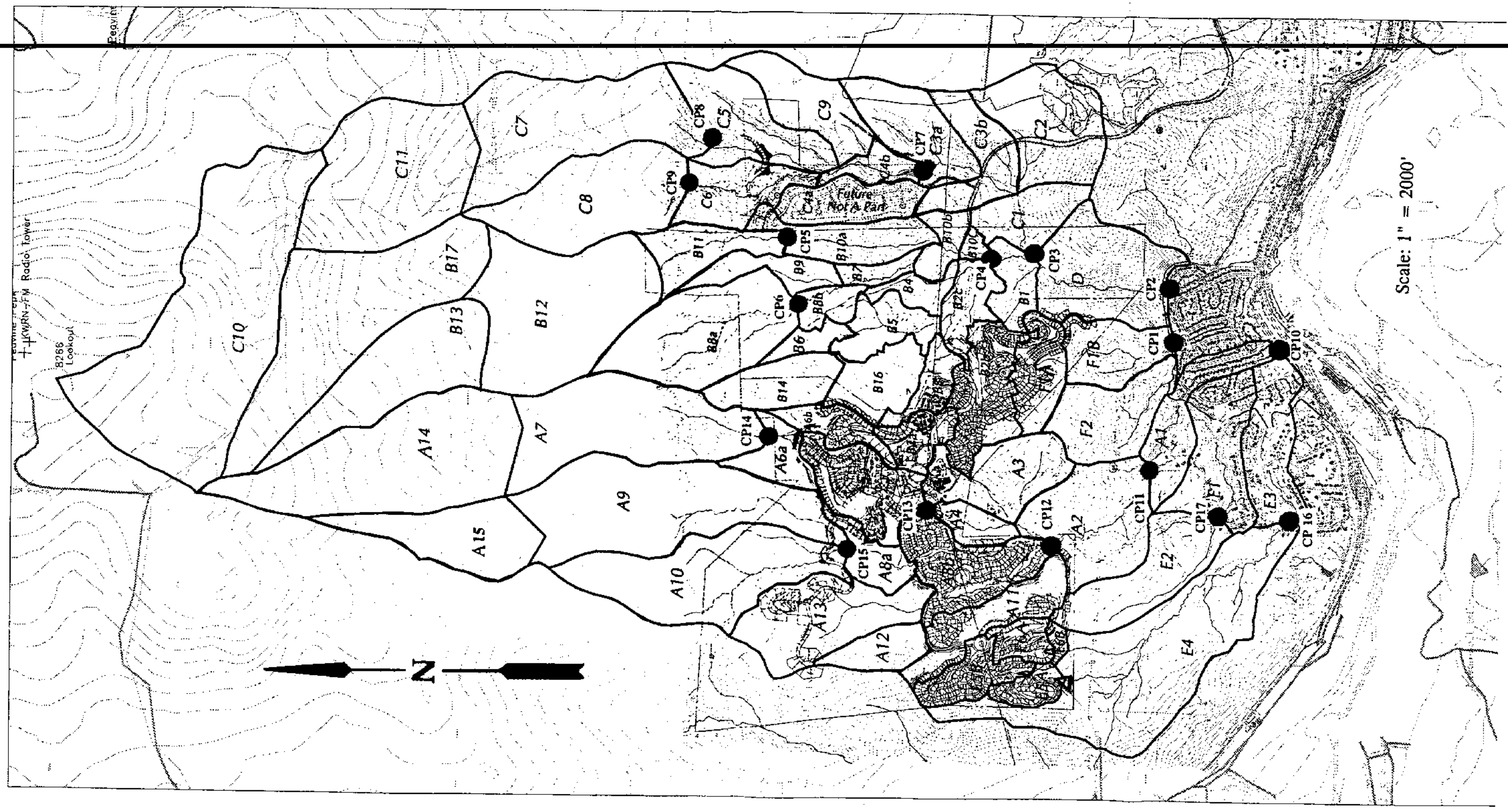
Somersett
Storm Drainage Master Plan

Watershed Map
Existing Condition

Figure 8



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Somersett
Storm Drainage Master Plan
Watershed Map
Proposed Condition

Figure 9

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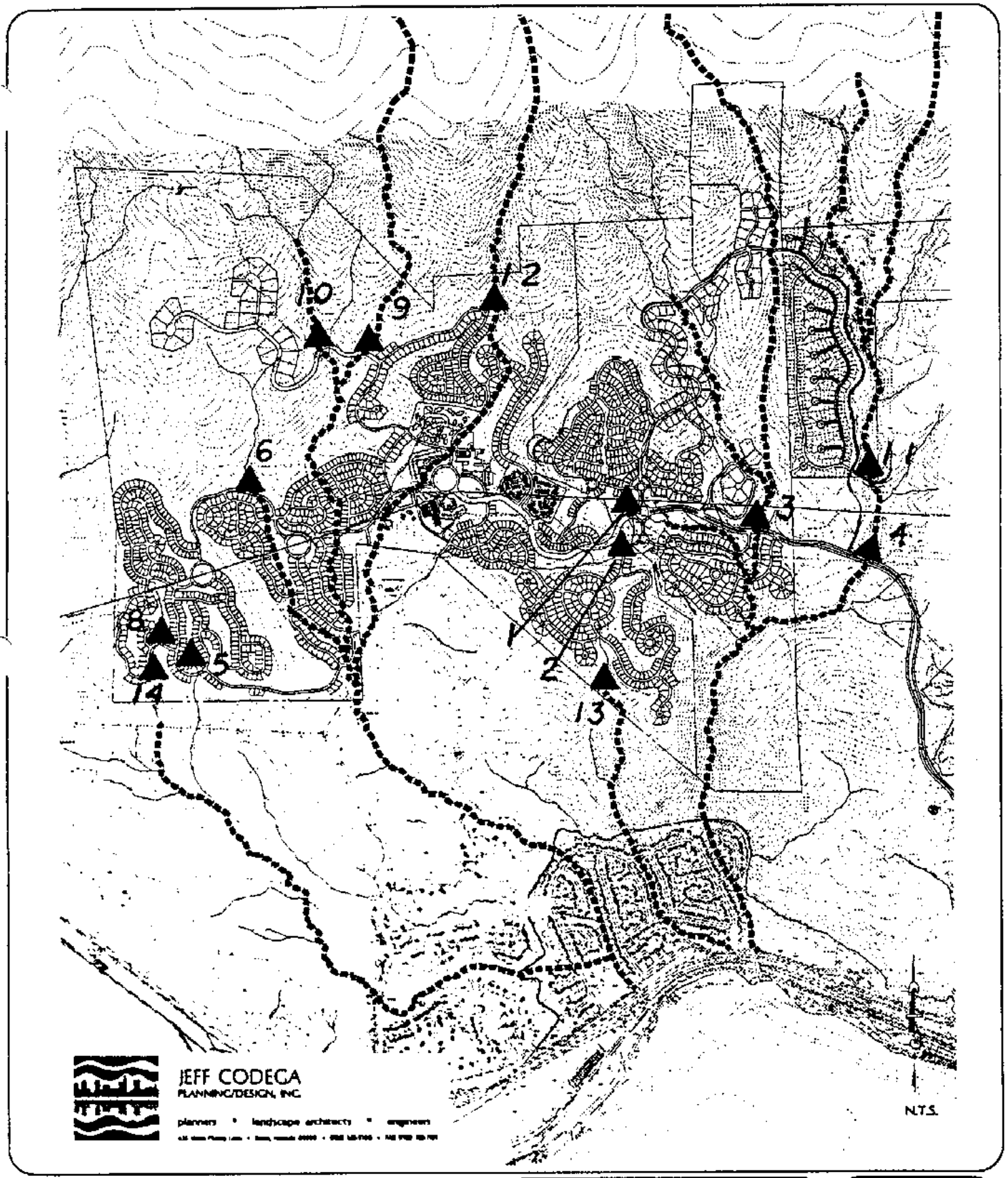

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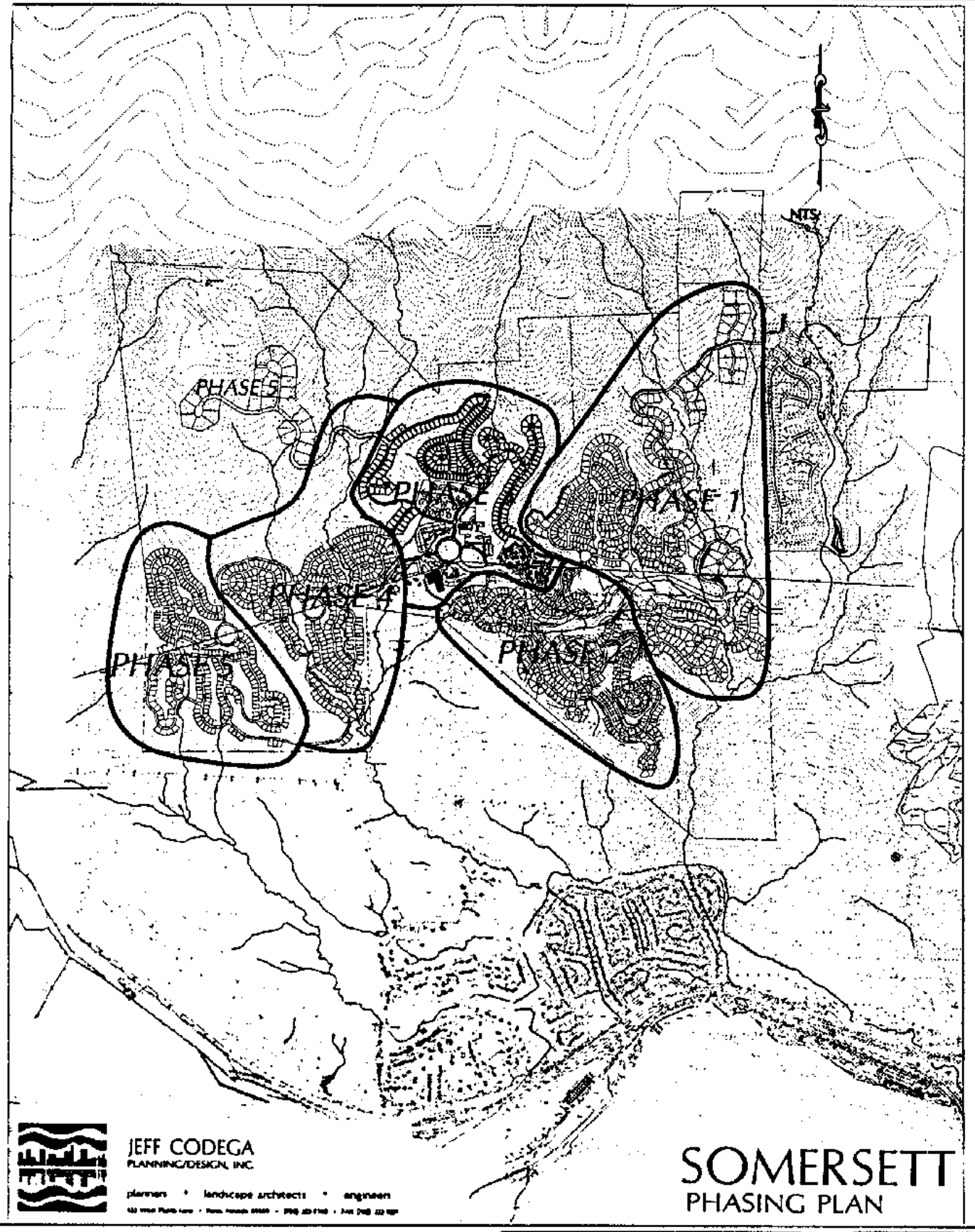
Somersett
Storm Drainage Master Plan
Proposed Detention Basin Sites

Figure 10



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Somersett
Storm Drainage Master Plan
Phasing Plan

Figure 11

APPENDIX A
Rainfall

APPENDIX A - RAINFALL

NOAA 14

Rainfall Depth-Duration Frequency Analysis

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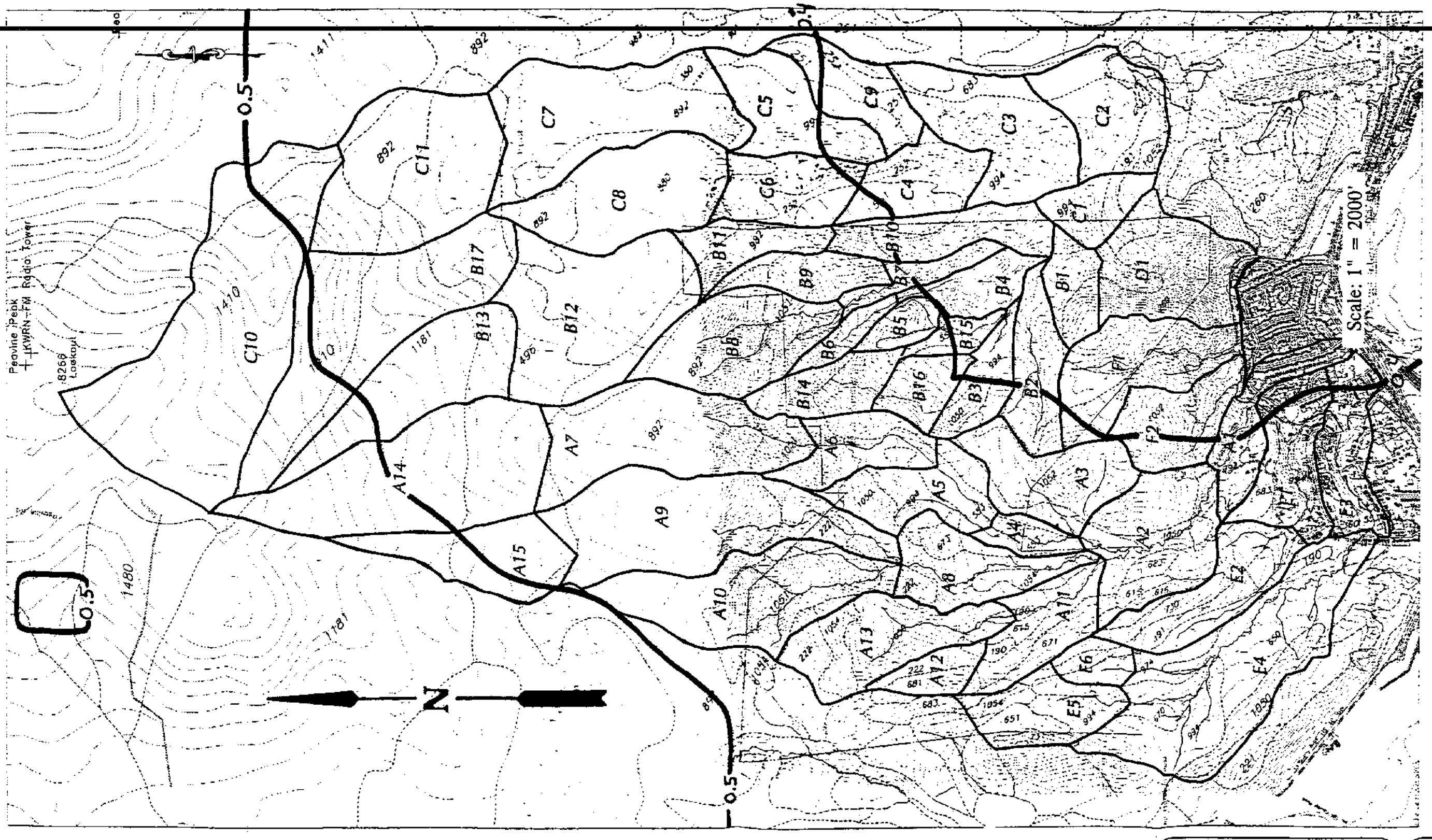
April 17, 1998



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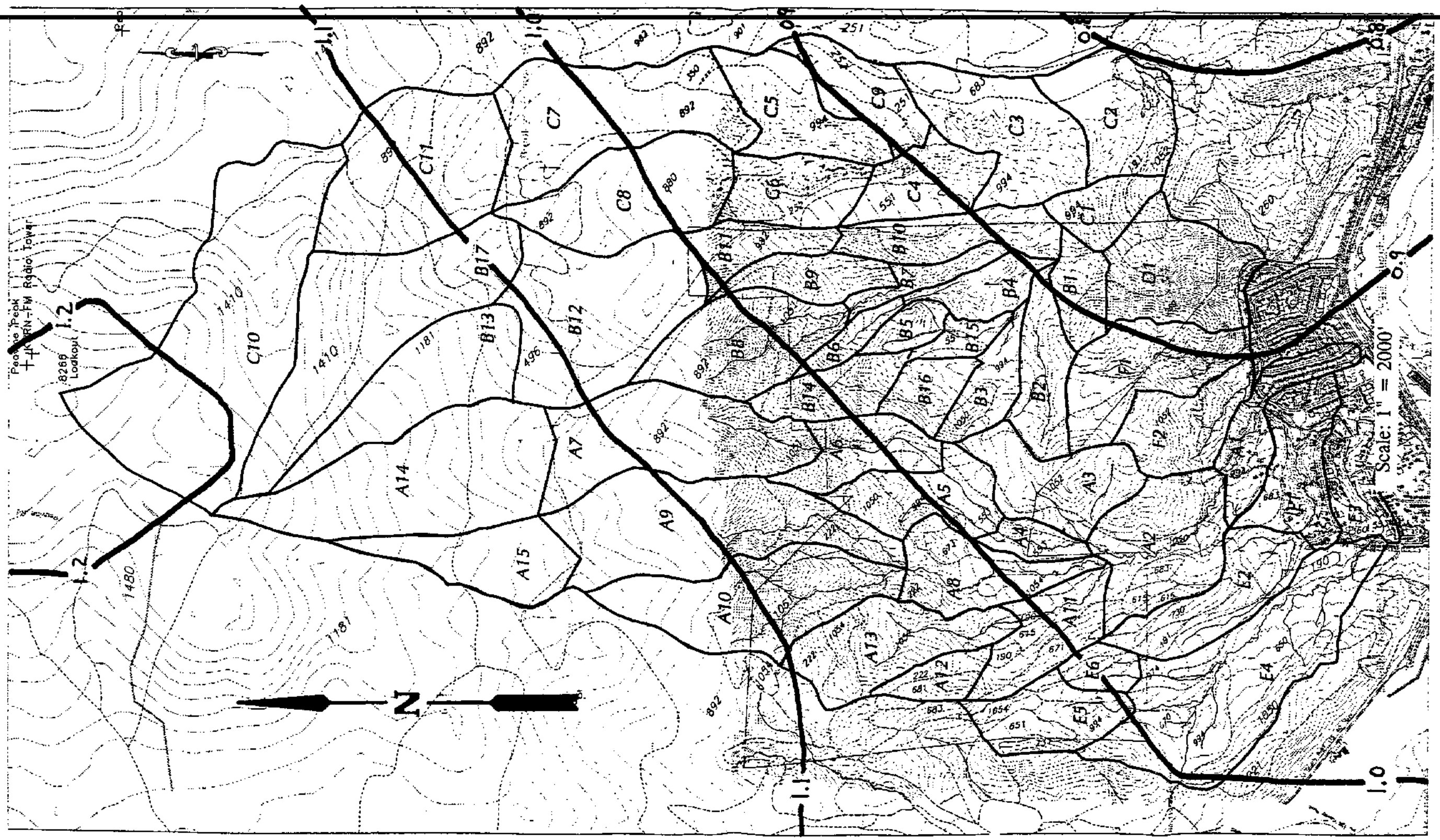
Somersett
Storm Drainage Master Plan
2 Year 1 Hour
Precipitation Event
Existing Watersheds

Appendix
A



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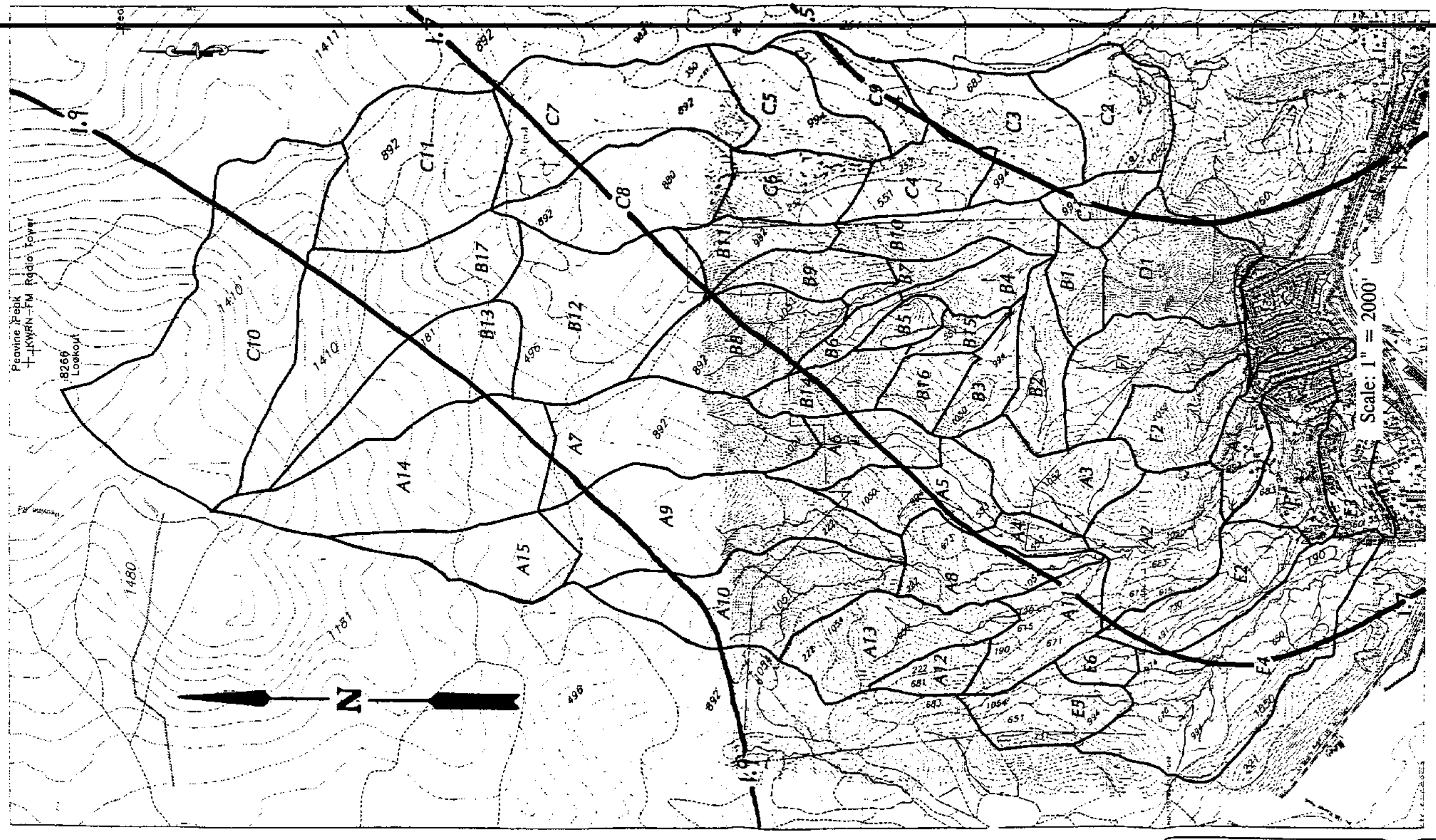
WRC NEVADA, INC.

Somersett
Storm Drainage Master Plan
2 Year 6 Hour
Precipitation Event
Existing Watersheds

Appendix A



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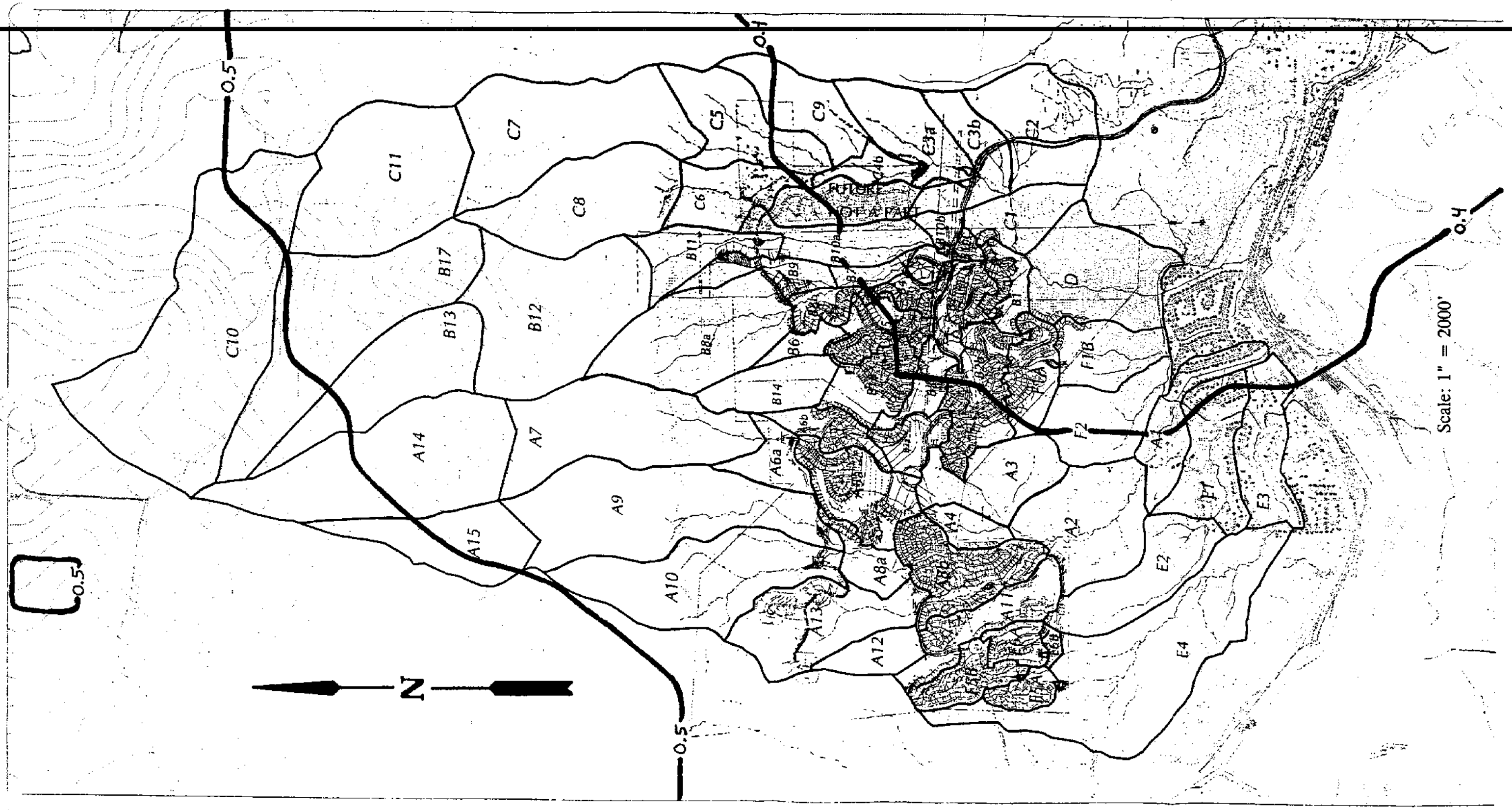
Somersett
Storm Drainage Master Plan
2 Year 24 Hour
Precipitation Event
Existing Watersheds

Appendix A



Scale: 1" = 2000'

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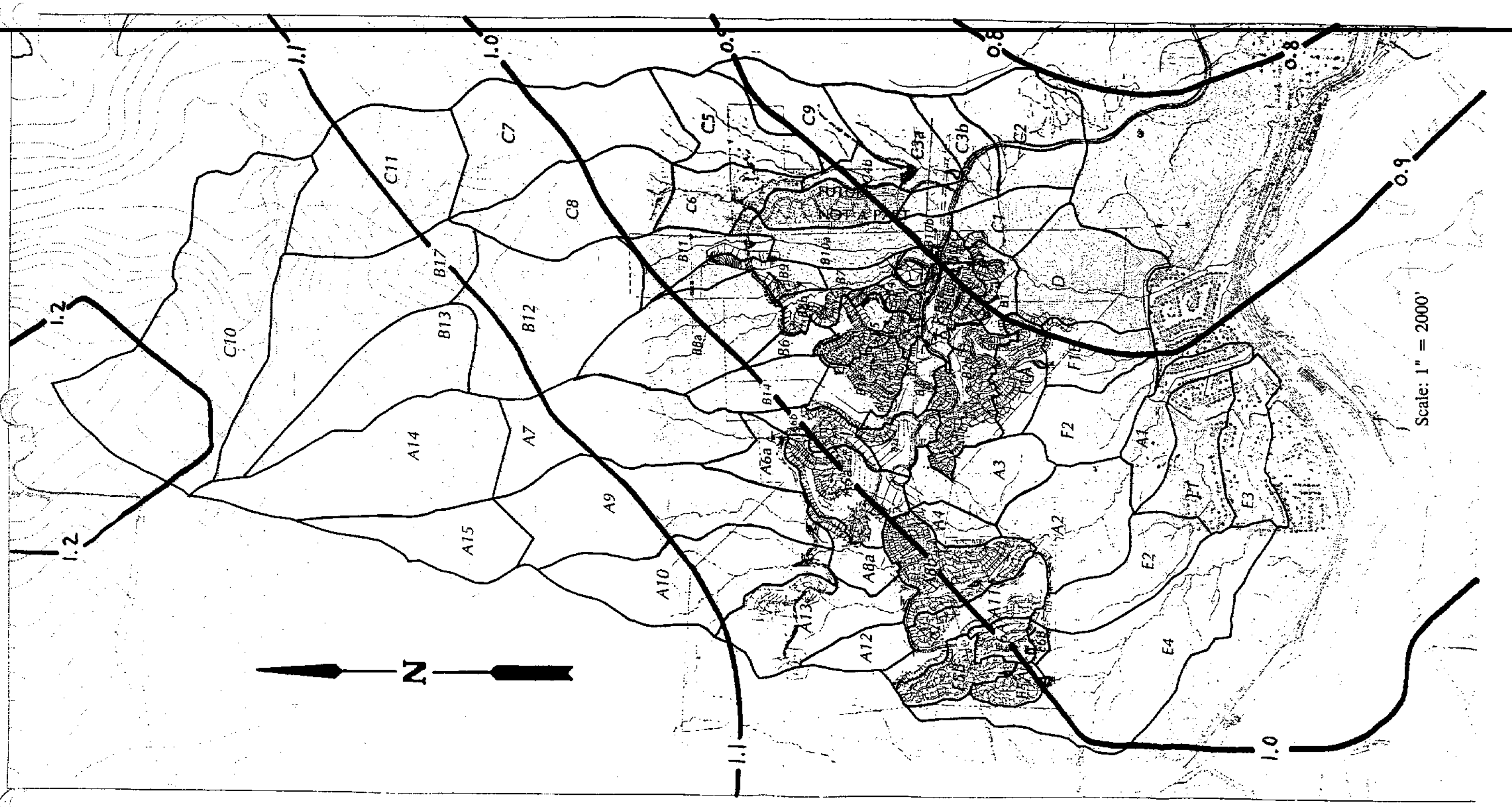
WRC NEVADA, INC.

Somersett
Storm Drainage Master Plan
2 Year 1 Hour
Precipitation Event
Proposed Watersheds

Appendix A



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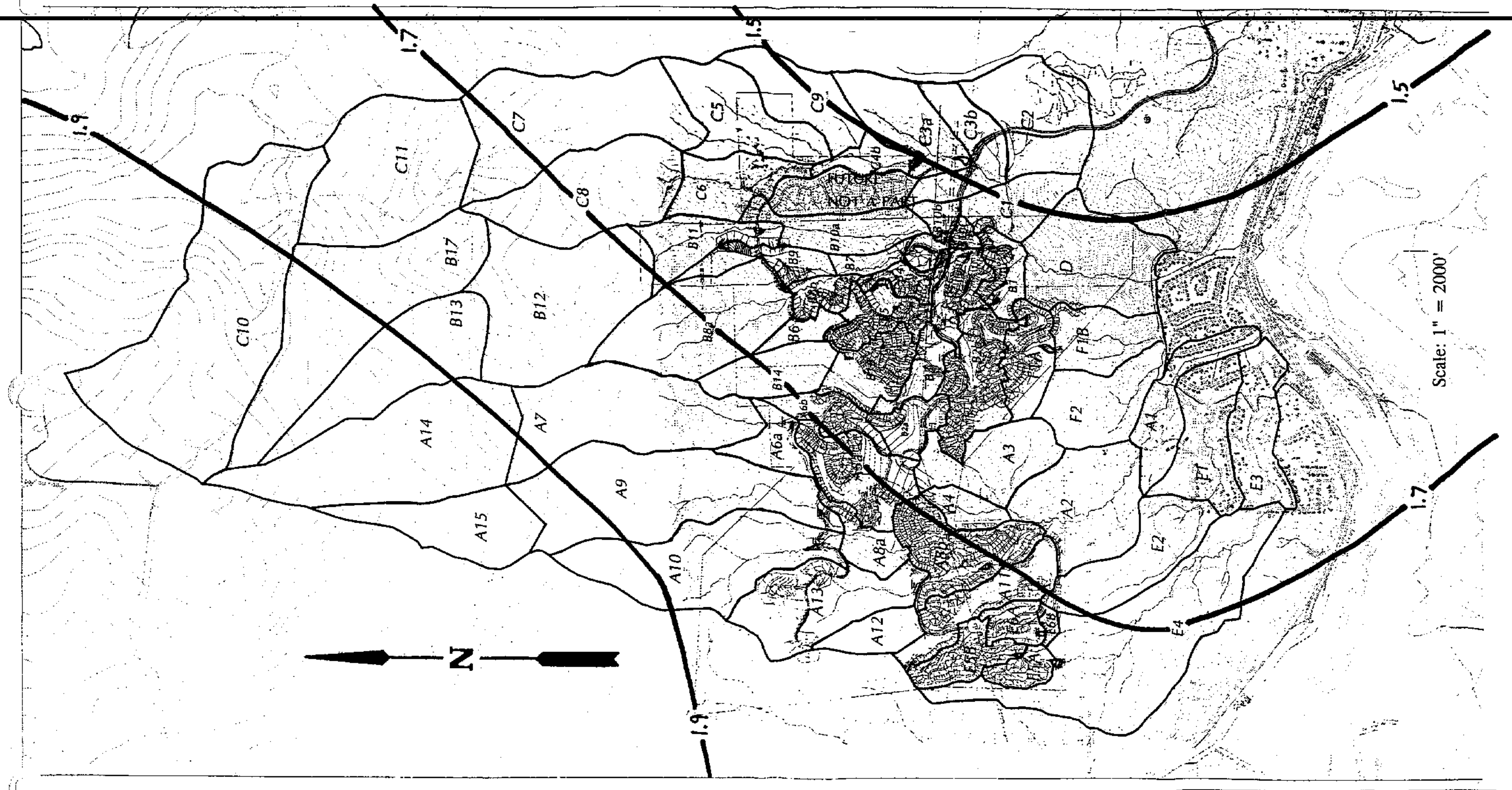
WRC NEVADA, INC.

Somersett
Storm Drainage Master Plan
2 Year 6 Hour
Precipitation Event
Proposed Watersheds

Appendix A



Scale: 1" = 2000'

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Somersett
Storm Drainage Master Plan
2 Year 24 Hour
Precipitation Event
Proposed Watersheds

Appendix A

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

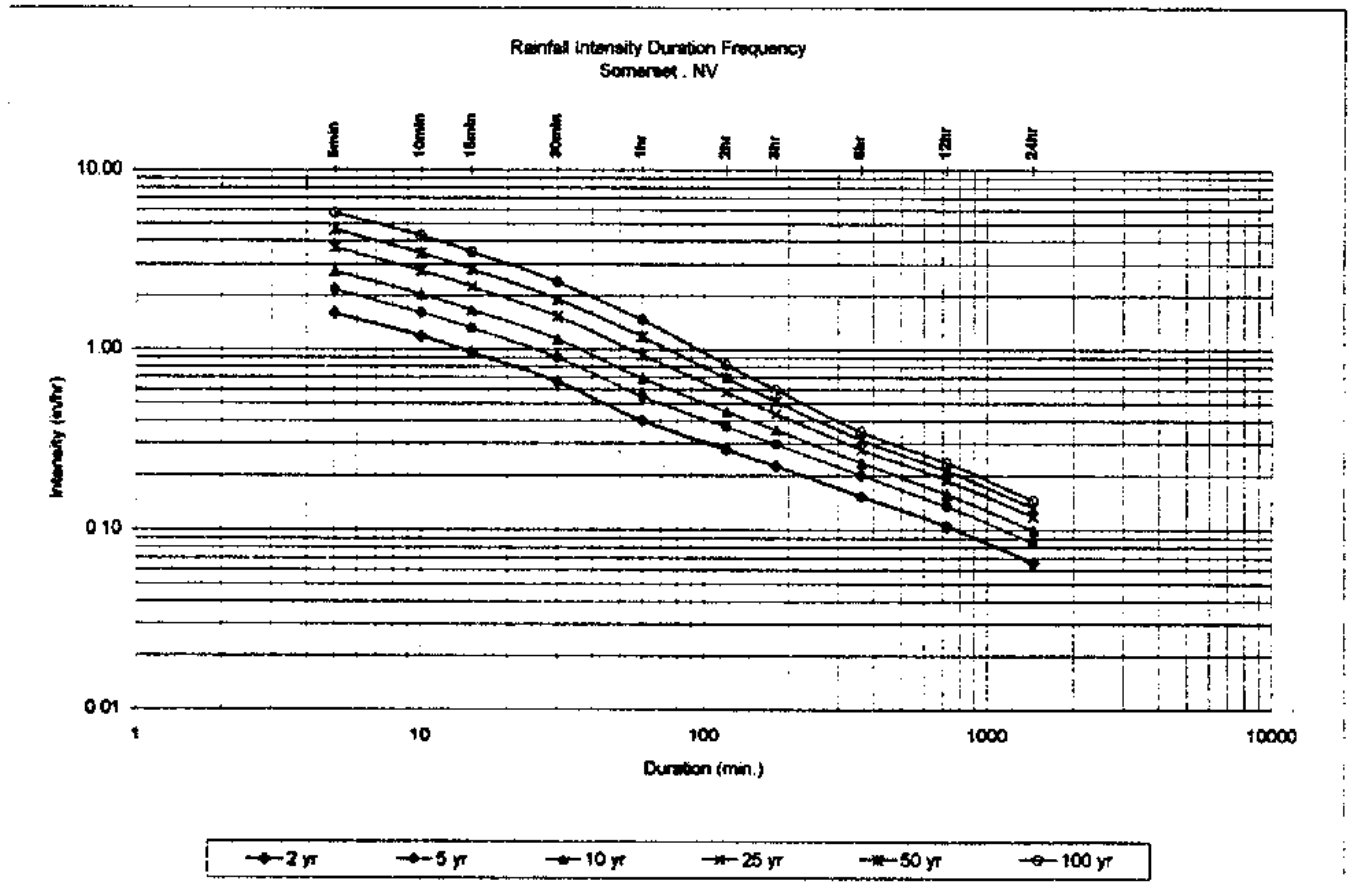
Watershed name: A1
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.40
2 yr- 6hr	0.92
2 yr- 24hr	1.58

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.20	0.24	0.33	0.40	0.56	0.67	0.92	1.25	1.58
5 yr	0.18	0.27	0.33	0.45	0.54	0.74	0.89	1.20	1.61	2.02
10 yr	0.23	0.34	0.41	0.56	0.69	0.90	1.06	1.40	1.88	2.37
25 yr	0.31	0.45	0.56	0.76	0.93	1.15	1.32	1.67	2.25	2.83
50 yr	0.38	0.57	0.70	0.95	1.16	1.38	1.64	1.88	2.53	3.18
100 yr	0.48	0.71	0.87	1.19	1.45	1.64	1.78	2.08	2.79	3.51

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.58	1.18	0.96	0.66	0.40	0.28	0.22	0.15	0.10	0.07
5 yr	2.15	1.60	1.31	0.89	0.54	0.37	0.30	0.20	0.13	0.08
10 yr	2.72	2.02	1.65	1.13	0.69	0.45	0.35	0.23	0.16	0.10
25 yr	3.67	2.73	2.23	1.52	0.93	0.57	0.44	0.28	0.19	0.12
50 yr	4.61	3.42	2.79	1.91	1.16	0.69	0.51	0.31	0.21	0.13
100 yr	5.73	4.26	3.48	2.37	1.45	0.82	0.59	0.35	0.23	0.15



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Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

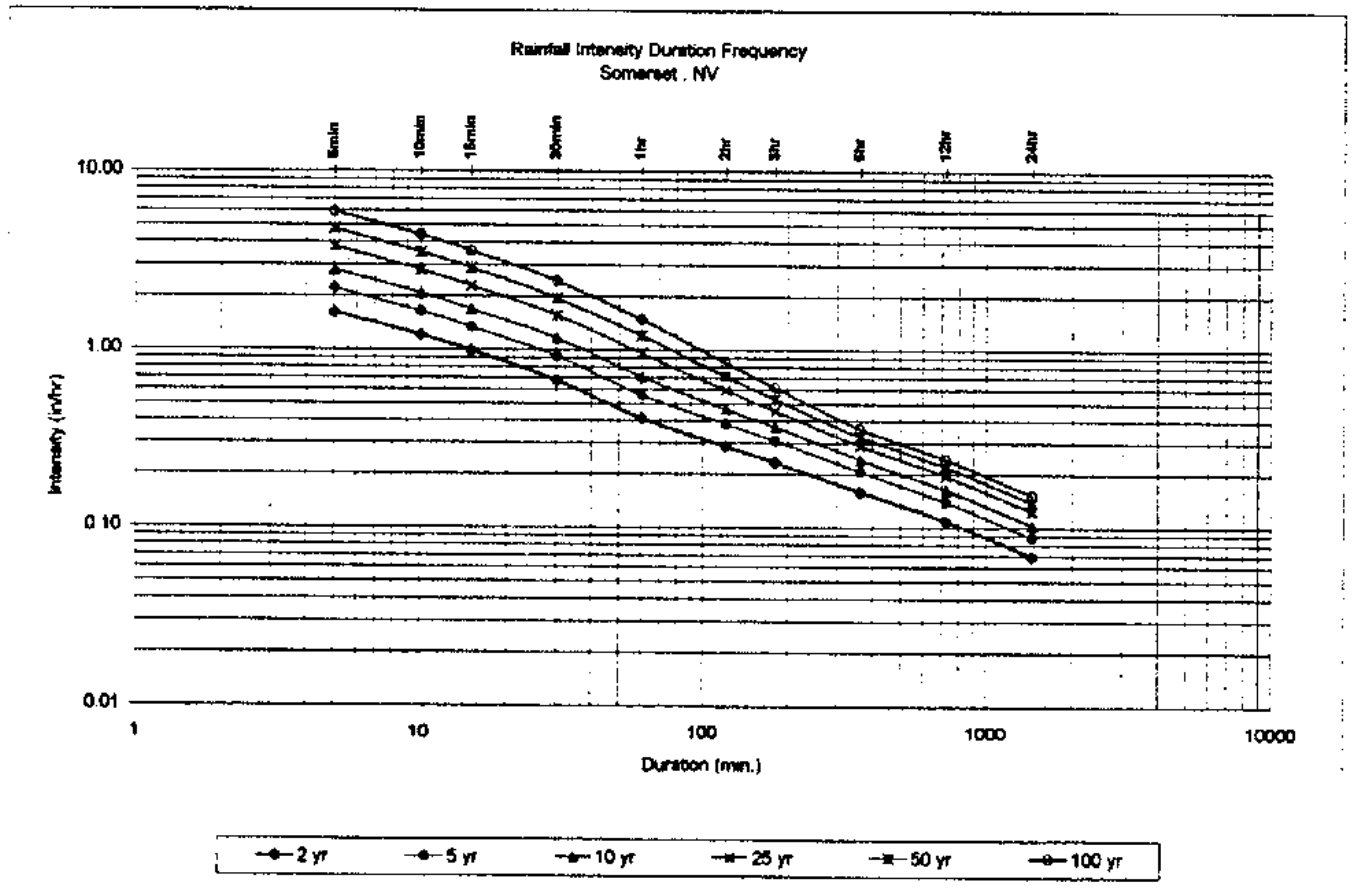
Watershed name: A2
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.95
2 yr- 24hr	1.65

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (Inches)									
2 yr	0.14	0.20	0.25	0.34	0.41	0.57	0.69	0.95	1.30	1.65
5 yr	0.18	0.27	0.33	0.46	0.56	0.76	0.91	1.24	1.67	2.11
10 yr	0.23	0.35	0.42	0.58	0.71	0.93	1.09	1.44	1.96	2.48
25 yr	0.31	0.47	0.57	0.78	0.95	1.18	1.36	1.72	2.34	2.95
50 yr	0.38	0.58	0.72	0.98	1.19	1.42	1.58	1.94	2.63	3.32
100 yr	0.49	0.73	0.89	1.22	1.48	1.66	1.83	2.15	2.91	3.66

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.29	0.23	0.16	0.11	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.38	0.30	0.21	0.14	0.09
10 yr	2.79	2.07	1.69	1.16	0.71	0.48	0.36	0.24	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.59	0.45	0.29	0.19	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.71	0.53	0.32	0.22	0.14
100 yr	5.88	4.36	3.56	2.43	1.48	0.84	0.61	0.36	0.24	0.15



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

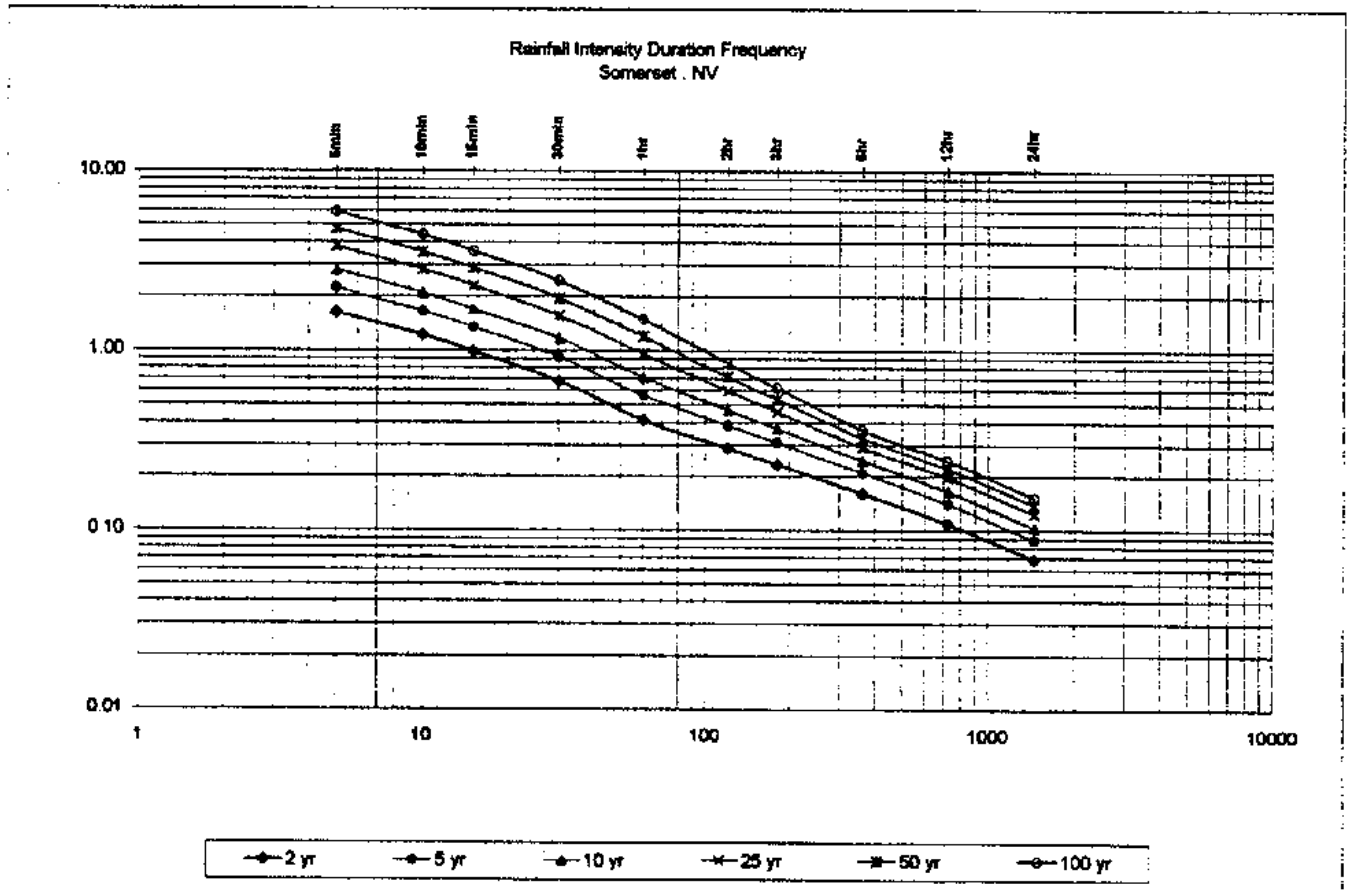
Watershed name: A3
Project; Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.96
2 yr- 24hr	1.68

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.20	0.25	0.34	0.41	0.57	0.70	0.96	1.31	1.65
5 yr	0.18	0.27	0.33	0.46	0.56	0.76	0.92	1.25	1.68	2.11
10 yr	0.23	0.35	0.42	0.58	0.71	0.93	1.10	1.46	1.97	2.48
25 yr	0.31	0.47	0.57	0.78	0.95	1.19	1.36	1.74	2.35	2.95
50 yr	0.39	0.58	0.72	0.98	1.19	1.42	1.60	1.98	2.64	3.32
100 yr	0.49	0.73	0.89	1.22	1.48	1.69	1.84	2.17	2.92	3.66

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.29	0.23	0.16	0.11	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.38	0.31	0.21	0.14	0.09
10 yr	2.79	2.07	1.69	1.16	0.71	0.47	0.37	0.24	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.59	0.45	0.29	0.20	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.71	0.53	0.33	0.22	0.14
100 yr	5.88	4.36	3.56	2.43	1.48	0.84	0.61	0.36	0.24	0.15



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Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

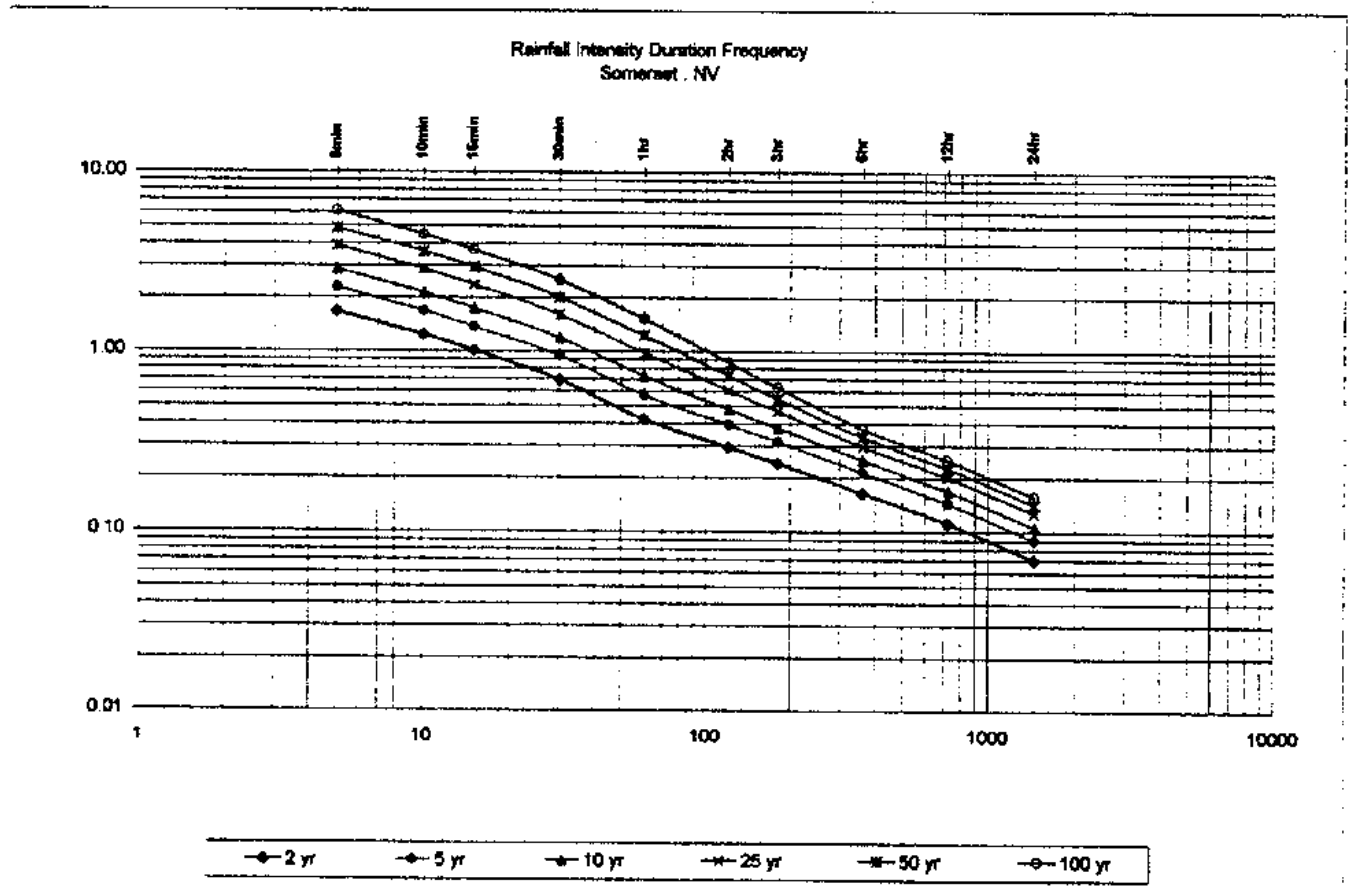
Watershed name: A4
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	0.98
2 yr- 24hr	1.69

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.21	0.25	0.34	0.42	0.59	0.71	0.98	1.34	1.69
5 yr	0.19	0.28	0.34	0.47	0.57	0.78	0.94	1.27	1.72	2.16
10 yr	0.24	0.35	0.43	0.59	0.72	0.95	1.13	1.49	2.01	2.54
25 yr	0.32	0.46	0.58	0.80	0.97	1.21	1.38	1.77	2.40	3.03
50 yr	0.40	0.60	0.73	1.00	1.22	1.45	1.63	2.00	2.70	3.40
100 yr	0.50	0.74	0.91	1.25	1.52	1.73	1.89	2.21	2.98	3.75

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.69	1.23	1.01	0.69	0.42	0.29	0.24	0.16	0.11	0.07
5 yr	2.26	1.68	1.37	0.94	0.57	0.39	0.31	0.21	0.14	0.09
10 yr	2.86	2.12	1.73	1.18	0.72	0.48	0.38	0.25	0.17	0.11
25 yr	3.66	2.66	2.34	1.60	0.97	0.61	0.46	0.30	0.20	0.13
50 yr	4.84	3.59	2.93	2.00	1.22	0.73	0.54	0.33	0.22	0.14
100 yr	6.02	4.47	3.65	2.49	1.52	0.86	0.63	0.37	0.25	0.16



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

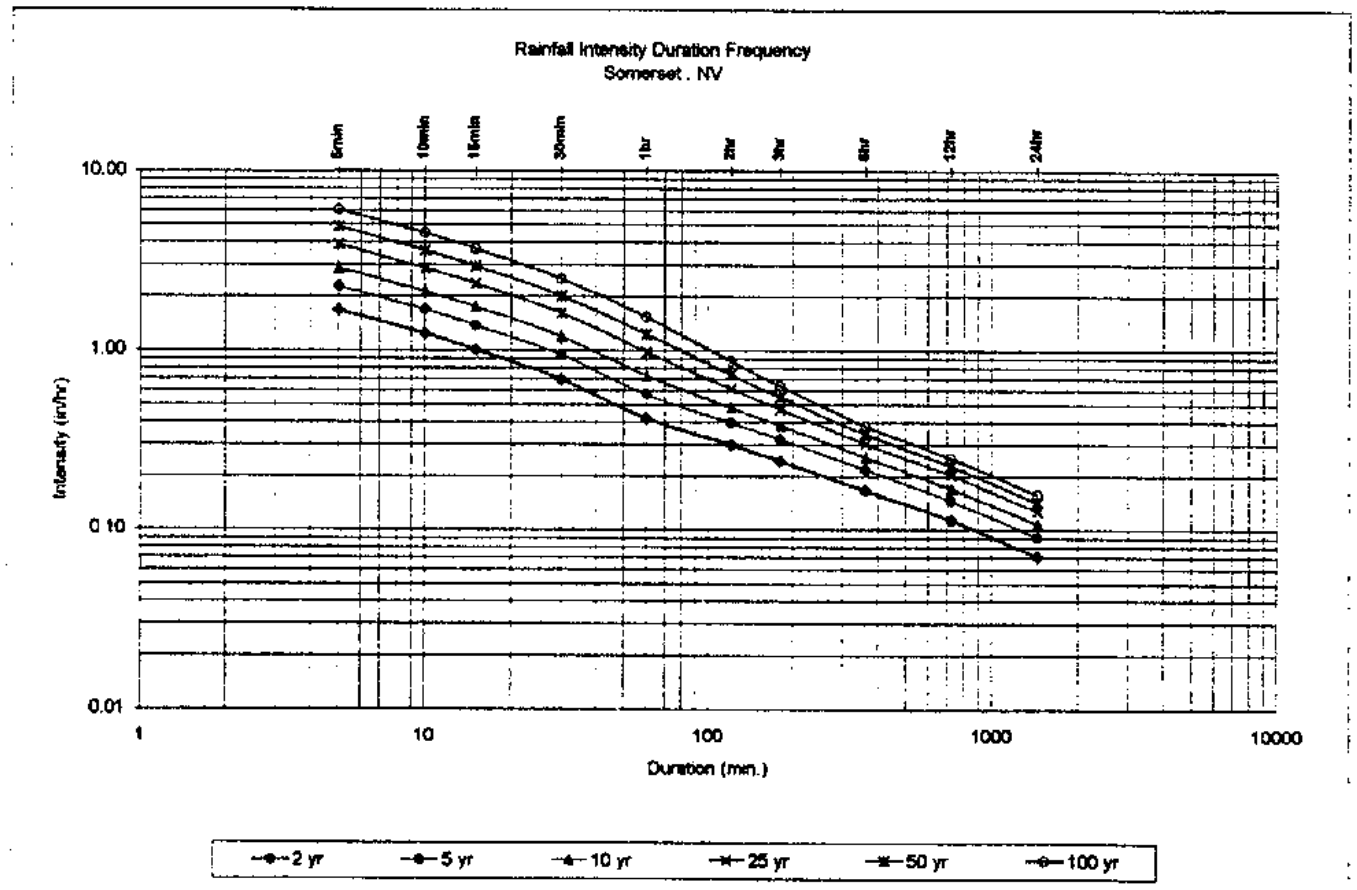
Watershed name: A5
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	1.00
2 yr- 24hr	1.70

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (Inches)					
2 yr	0.14	0.21	0.25	0.34	0.42	0.59	0.73	1.00	1.35	1.70
5 yr	0.19	0.28	0.34	0.47	0.57	0.79	0.95	1.30	1.74	2.18
10 yr	0.24	0.35	0.43	0.59	0.72	0.96	1.14	1.52	2.04	2.55
25 yr	0.32	0.48	0.58	0.80	0.97	1.22	1.41	1.81	2.43	3.04
50 yr	0.40	0.60	0.73	1.00	1.22	1.47	1.65	2.04	2.73	3.42
100 yr	0.50	0.74	0.91	1.25	1.52	1.74	1.91	2.26	3.02	3.77

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.66	1.23	1.01	0.69	0.42	0.30	0.24	0.17	0.11	0.07
5 yr	2.26	1.68	1.37	0.94	0.57	0.39	0.32	0.22	0.14	0.09
10 yr	2.86	2.12	1.73	1.18	0.72	0.48	0.38	0.25	0.17	0.11
25 yr	3.66	2.86	2.34	1.60	0.97	0.61	0.47	0.30	0.20	0.13
50 yr	4.84	3.59	2.93	2.00	1.22	0.73	0.55	0.34	0.23	0.14
100 yr	6.02	4.47	3.65	2.49	1.52	0.87	0.64	0.38	0.25	0.16



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Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

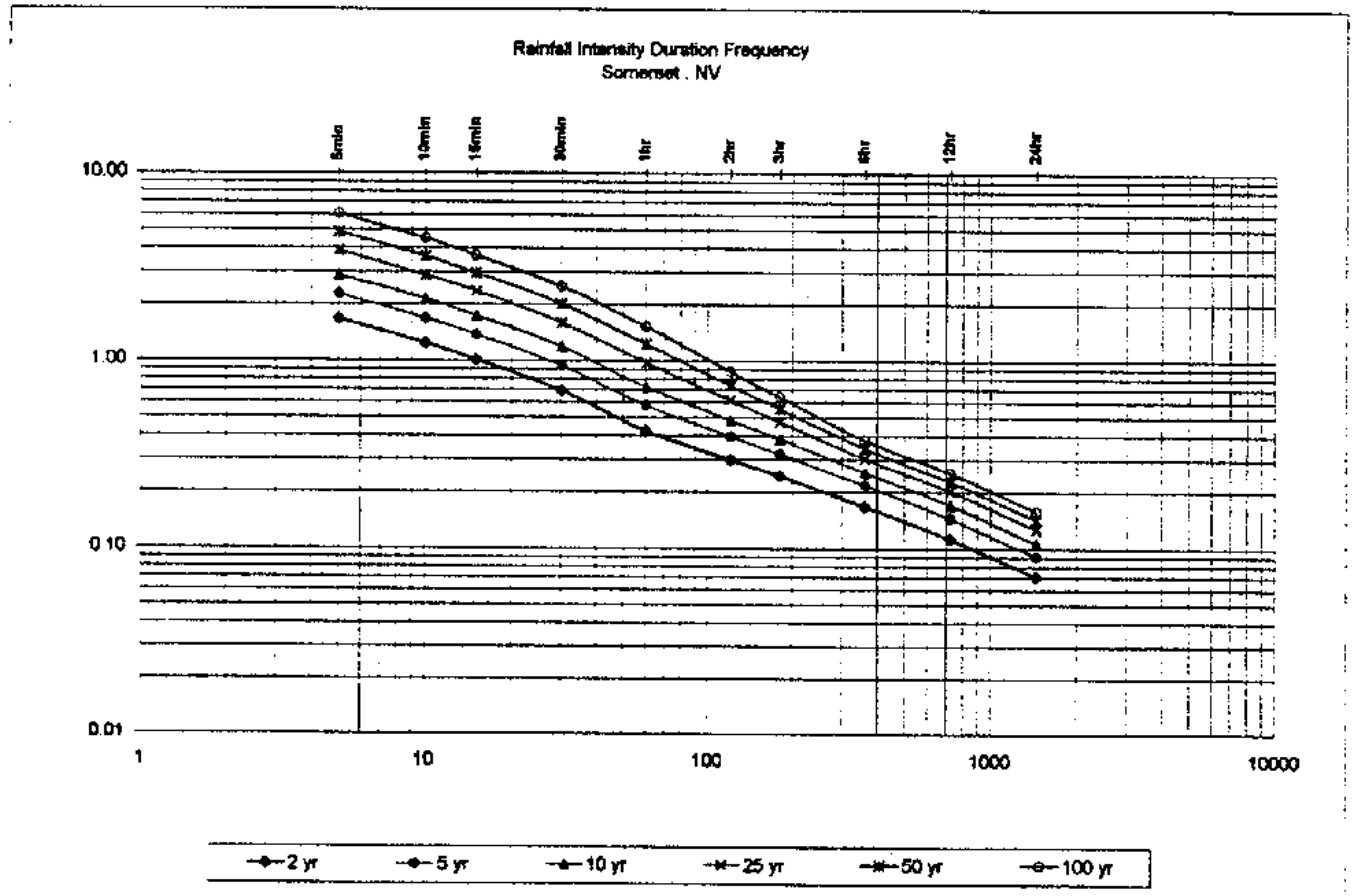
Watershed name: A6
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	1.00
2 yr- 24hr	1.70

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.21	0.25	0.34	0.42	0.59	0.73	1.00	1.35	1.70
5 yr	0.19	0.28	0.34	0.47	0.57	0.79	0.95	1.30	1.74	2.18
10 yr	0.24	0.35	0.43	0.59	0.72	0.96	1.14	1.52	2.04	2.55
25 yr	0.32	0.48	0.58	0.80	0.97	1.22	1.41	1.81	2.43	3.04
50 yr	0.40	0.60	0.73	1.00	1.22	1.47	1.65	2.04	2.73	3.42
100 yr	0.50	0.74	0.91	1.25	1.52	1.74	1.91	2.26	3.02	3.77

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.66	1.23	1.01	0.69	0.42	0.30	0.24	0.17	0.11	0.07
5 yr	2.26	1.68	1.37	0.94	0.57	0.39	0.32	0.22	0.14	0.09
10 yr	2.86	2.12	1.73	1.18	0.72	0.48	0.38	0.25	0.17	0.11
25 yr	3.66	2.86	2.34	1.60	0.97	0.61	0.47	0.30	0.20	0.13
50 yr	4.64	3.59	2.93	2.00	1.22	0.73	0.55	0.34	0.23	0.14
100 yr	6.02	4.47	3.65	2.49	1.52	0.87	0.64	0.36	0.25	0.16



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data

Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: A7
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

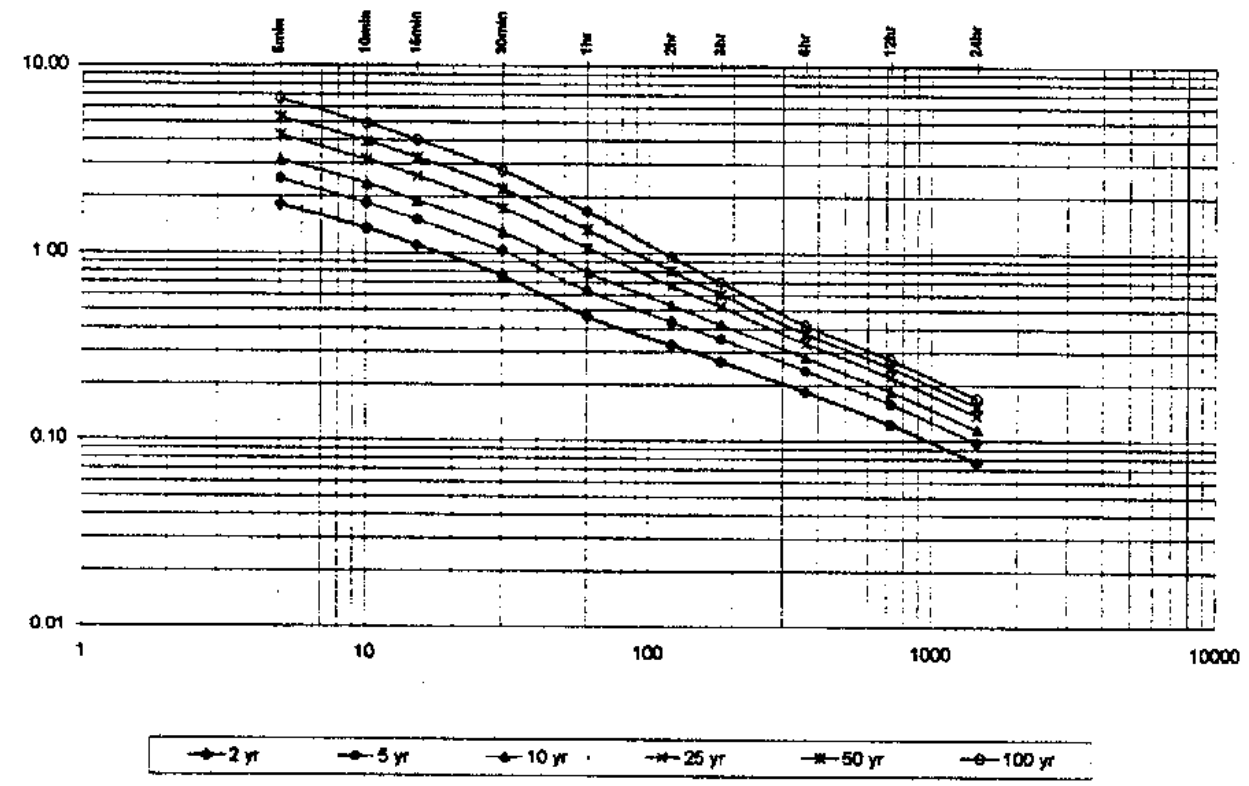
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.46
2 yr- 6hr	1.10
2 yr- 24hr	1.83

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.15	0.23	0.28	0.38	0.46	0.65	0.80	1.10	1.47	1.83
5 yr	0.21	0.31	0.38	0.51	0.63	0.87	1.05	1.43	1.89	2.34
10 yr	0.26	0.39	0.47	0.65	0.79	1.05	1.25	1.67	2.21	2.75
25 yr	0.35	0.52	0.64	0.88	1.07	1.34	1.55	1.99	2.63	3.28
50 yr	0.44	0.66	0.80	1.10	1.34	1.61	1.81	2.24	2.96	3.68
100 yr	0.55	0.82	1.00	1.37	1.67	1.91	2.10	2.49	3.27	4.06

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.82	1.35	1.10	0.75	0.46	0.33	0.27	0.18	0.12	0.08
5 yr	2.48	1.84	1.50	1.03	0.63	0.43	0.35	0.24	0.16	0.10
10 yr	3.13	2.33	1.90	1.30	0.79	0.53	0.42	0.28	0.18	0.11
25 yr	4.23	3.14	2.56	1.75	1.07	0.67	0.52	0.33	0.22	0.14
50 yr	5.30	3.94	3.21	2.20	1.34	0.80	0.60	0.37	0.25	0.15
100 yr	6.59	4.90	4.00	2.73	1.67	0.96	0.70	0.41	0.27	0.17

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC.

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

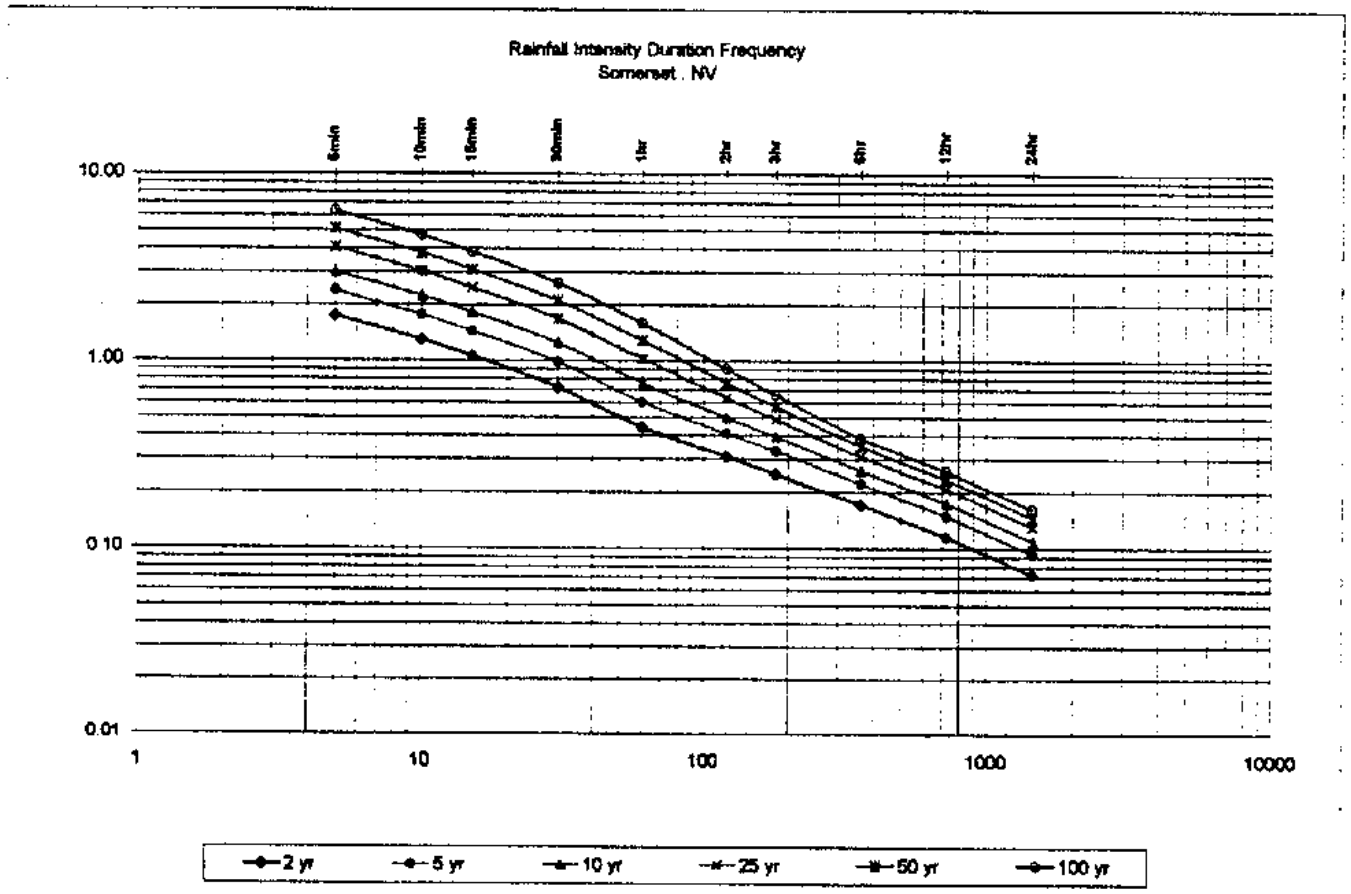
Watershed name: A8
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.44
2 yr- 6hr	1.02
2 yr- 24hr	1.74

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.26	0.36	0.44	0.61	0.75	1.02	1.38	1.74
5 yr	0.20	0.29	0.36	0.49	0.60	0.82	0.98	1.33	1.78	2.23
10 yr	0.25	0.37	0.45	0.62	0.76	0.99	1.17	1.55	2.08	2.61
25 yr	0.34	0.50	0.61	0.84	1.02	1.27	1.45	1.85	2.48	3.11
50 yr	0.42	0.63	0.77	1.05	1.28	1.52	1.70	2.08	2.79	3.50
100 yr	0.53	0.78	0.96	1.31	1.59	1.81	1.97	2.31	3.08	3.86

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.74	1.29	1.08	0.72	0.44	0.31	0.25	0.17	0.12	0.07
5 yr	2.37	1.76	1.44	0.98	0.60	0.41	0.33	0.22	0.15	0.09
10 yr	3.00	2.22	1.82	1.24	0.76	0.50	0.39	0.26	0.17	0.11
25 yr	4.04	3.00	2.45	1.67	1.02	0.63	0.48	0.31	0.21	0.13
50 yr	5.07	3.76	3.07	2.10	1.28	0.76	0.57	0.35	0.23	0.15
100 yr	6.31	4.68	3.82	2.61	1.59	0.90	0.66	0.38	0.26	0.16



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

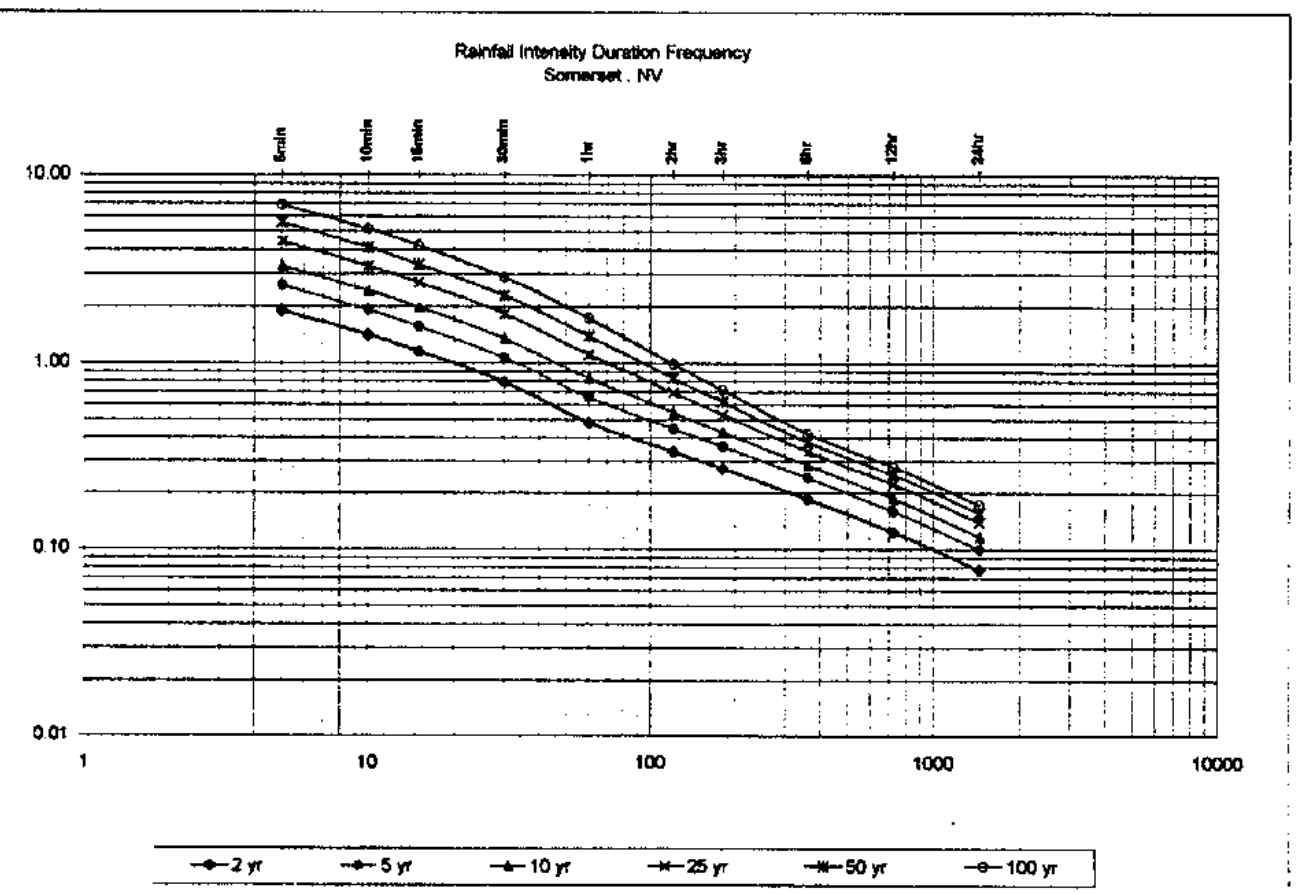
Watershed name: A9
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.48
2 yr- 6hr	1.11
2 yr- 24hr	1.86

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.16	0.24	0.29	0.39	0.48	0.67	0.81	1.11	1.49	1.86
5 yr	0.22	0.32	0.39	0.54	0.66	0.89	1.07	1.44	1.91	2.38
10 yr	0.27	0.40	0.50	0.68	0.83	1.08	1.28	1.69	2.24	2.79
25 yr	0.37	0.55	0.67	0.91	1.11	1.38	1.58	2.01	2.67	3.33
50 yr	0.46	0.68	0.84	1.15	1.40	1.66	1.85	2.26	3.00	3.74
100 yr	0.57	0.85	1.04	1.42	1.74	1.97	2.14	2.51	3.32	4.13

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.90	1.41	1.15	0.79	0.48	0.33	0.27	0.19	0.12	0.08
5 yr	2.58	1.92	1.57	1.07	0.65	0.44	0.36	0.24	0.16	0.10
10 yr	3.27	2.43	1.98	1.35	0.83	0.54	0.43	0.28	0.19	0.12
25 yr	4.41	3.27	2.67	1.83	1.11	0.69	0.53	0.33	0.22	0.14
50 yr	5.53	4.11	3.35	2.29	1.40	0.83	0.62	0.38	0.25	0.16
100 yr	6.88	5.11	4.17	2.85	1.74	0.96	0.71	0.42	0.28	0.17



WRC NEVADA, INC.

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

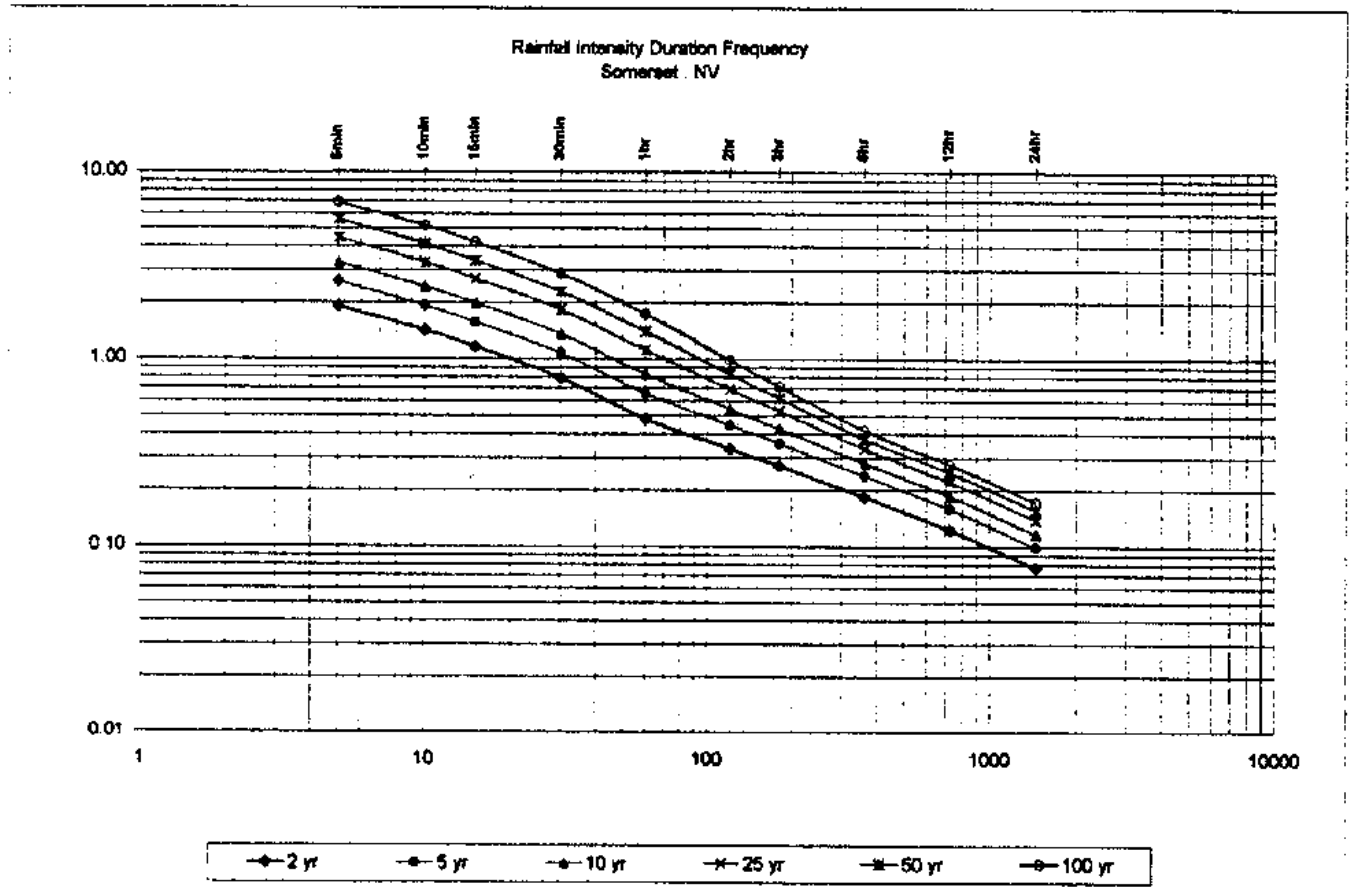
Watershed name: A10
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurrence	Depth (inch)
2 yr-1hr	0.48
2 yr- 6hr	1.10
2 yr- 24hr	1.85

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.16	0.24	0.29	0.39	0.48	0.67	0.81	1.10	1.48	1.85
5 yr	0.22	0.32	0.39	0.54	0.65	0.89	1.08	1.43	1.90	2.37
10 yr	0.27	0.40	0.50	0.68	0.83	1.08	1.27	1.67	2.22	2.76
25 yr	0.37	0.55	0.67	0.91	1.11	1.38	1.58	1.99	2.65	3.31
50 yr	0.46	0.68	0.84	1.15	1.40	1.65	1.84	2.24	2.98	3.72
100 yr	0.57	0.85	1.04	1.42	1.74	1.98	2.13	2.49	3.30	4.11

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.90	1.41	1.15	0.79	0.48	0.33	0.27	0.18	0.12	0.08
5 yr	2.59	1.92	1.57	1.07	0.65	0.44	0.35	0.24	0.16	0.10
10 yr	3.27	2.43	1.98	1.35	0.83	0.54	0.42	0.28	0.19	0.12
25 yr	4.41	3.27	2.67	1.83	1.11	0.69	0.53	0.33	0.22	0.14
50 yr	5.53	4.11	3.35	2.29	1.40	0.83	0.61	0.37	0.25	0.15
100 yr	6.88	5.11	4.17	2.85	1.74	0.98	0.71	0.41	0.27	0.17



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

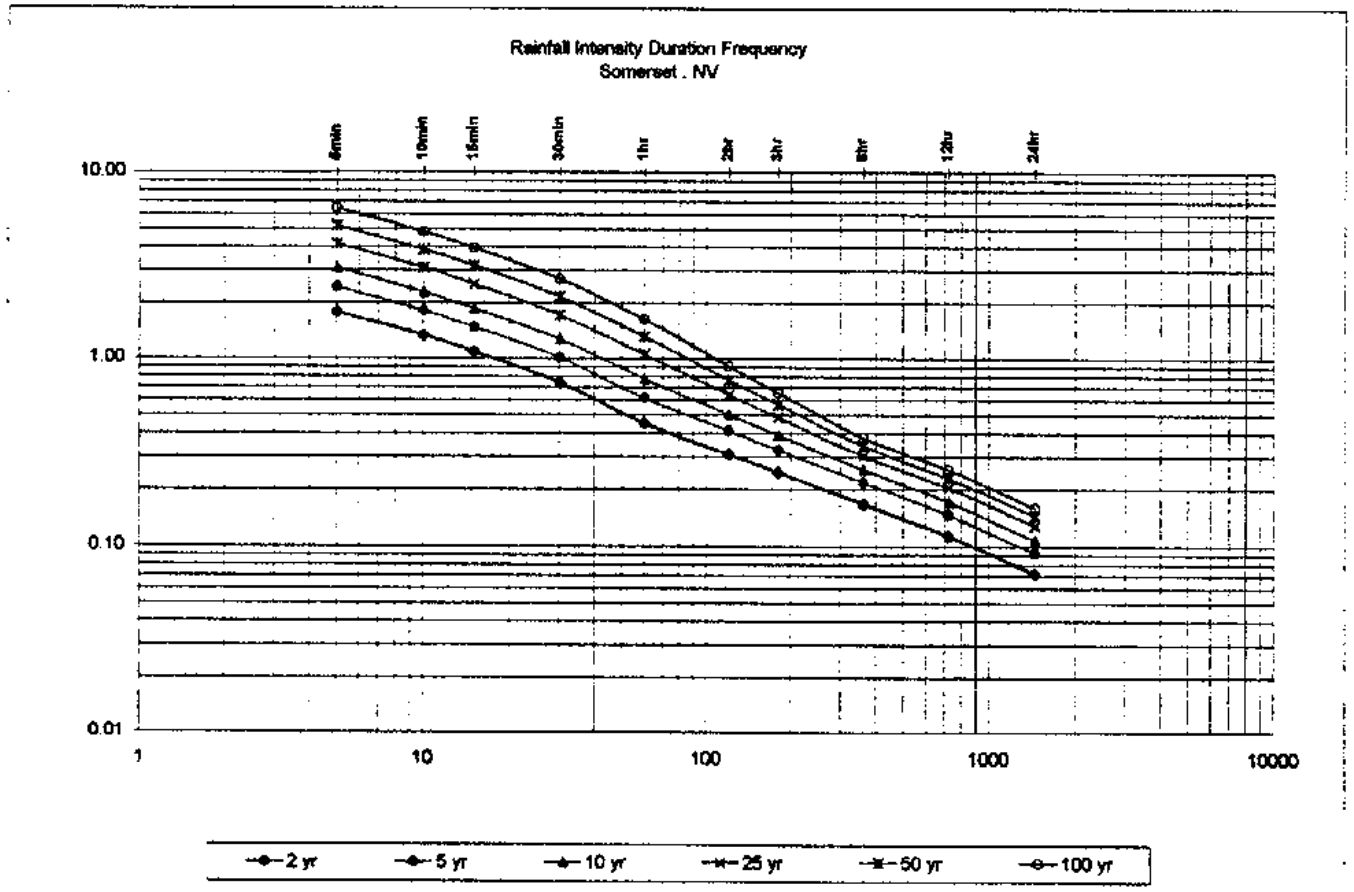
Watershed name: A11
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.48
2 yr- 6hr	1.00
2 yr- 24hr	1.72

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.27	0.37	0.45	0.61	0.74	1.00	1.36	1.72
5 yr	0.20	0.30	0.37	0.50	0.61	0.82	0.97	1.30	1.75	2.20
10 yr	0.26	0.38	0.46	0.63	0.77	1.00	1.17	1.52	2.05	2.58
25 yr	0.34	0.51	0.63	0.86	1.04	1.27	1.45	1.81	2.44	3.06
50 yr	0.43	0.64	0.79	1.07	1.31	1.53	1.69	2.04	2.75	3.46
100 yr	0.54	0.80	0.98	1.34	1.63	1.82	1.96	2.26	3.04	3.82

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.78	1.32	1.08	0.74	0.45	0.31	0.25	0.17	0.11	0.07
5 yr	2.42	1.80	1.47	1.00	0.61	0.41	0.32	0.22	0.15	0.09
10 yr	3.07	2.28	1.86	1.27	0.77	0.50	0.39	0.25	0.17	0.11
25 yr	4.13	3.07	2.51	1.71	1.04	0.64	0.48	0.30	0.20	0.13
50 yr	5.19	3.85	3.14	2.15	1.31	0.76	0.56	0.34	0.23	0.14
100 yr	6.45	4.79	3.91	2.67	1.63	0.91	0.65	0.38	0.25	0.16



WRC NEVADA, Inc

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: A12
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

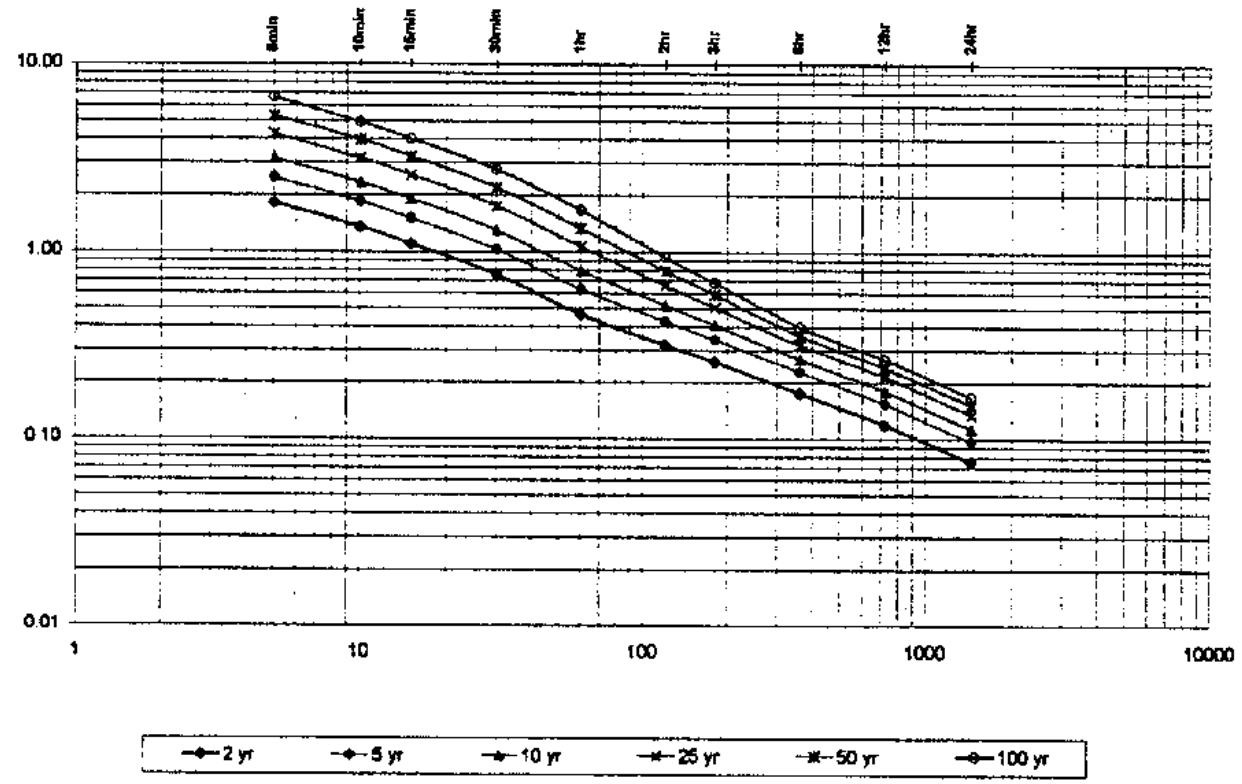
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.46
2 yr- 6hr	1.05
2 yr- 24hr	1.80

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.15	0.23	0.28	0.38	0.46	0.64	0.77	1.05	1.43	1.80
5 yr	0.21	0.31	0.38	0.51	0.63	0.85	1.01	1.37	1.83	2.30
10 yr	0.26	0.39	0.47	0.65	0.79	1.03	1.21	1.60	2.15	2.70
25 yr	0.35	0.52	0.64	0.88	1.07	1.32	1.51	1.90	2.56	3.22
50 yr	0.44	0.66	0.80	1.10	1.34	1.58	1.76	2.14	2.88	3.62
100 yr	0.55	0.82	1.00	1.37	1.67	1.88	2.04	2.37	3.18	4.00

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.82	1.35	1.10	0.75	0.46	0.32	0.26	0.18	0.12	0.08
5 yr	2.48	1.84	1.50	1.03	0.63	0.42	0.34	0.23	0.15	0.10
10 yr	3.13	2.33	1.90	1.30	0.79	0.52	0.40	0.27	0.18	0.11
25 yr	4.23	3.14	2.56	1.75	1.07	0.66	0.50	0.32	0.21	0.13
50 yr	5.30	3.94	3.21	2.20	1.34	0.79	0.59	0.36	0.24	0.15
100 yr	6.59	4.90	4.00	2.73	1.67	0.94	0.68	0.40	0.27	0.17

Rainfall Intensity Duration Frequency
Somerset , NV



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: A13
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

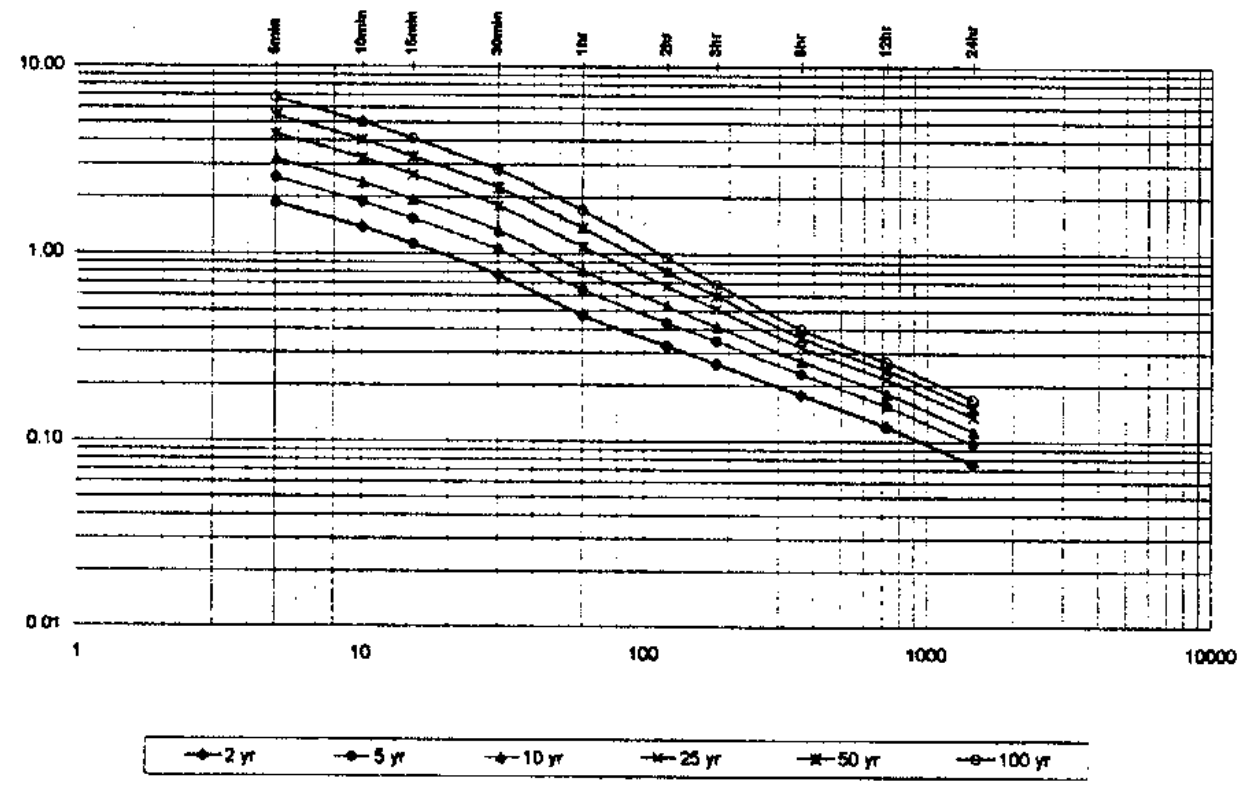
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.47
2 yr- 6hr	1.06
2 yr- 24hr	1.81

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.18	0.23	0.28	0.39	0.47	0.65	0.78	1.06	1.44	1.81
5 yr	0.21	0.31	0.36	0.52	0.64	0.86	1.03	1.38	1.85	2.32
10 yr	0.27	0.40	0.49	0.68	0.81	1.05	1.23	1.61	2.16	2.72
25 yr	0.36	0.53	0.65	0.89	1.09	1.34	1.53	1.92	2.58	3.24
50 yr	0.45	0.67	0.82	1.12	1.37	1.61	1.79	2.16	2.90	3.64
100 yr	0.56	0.83	1.02	1.40	1.70	1.91	2.07	2.40	3.21	4.02

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.86	1.38	1.19	0.77	0.47	0.32	0.26	0.18	0.12	0.08
5 yr	2.53	1.88	1.53	1.05	0.64	0.43	0.34	0.23	0.15	0.10
10 yr	3.20	2.38	1.94	1.33	0.81	0.52	0.41	0.27	0.18	0.11
25 yr	4.32	3.21	2.62	1.79	1.09	0.67	0.51	0.32	0.21	0.13
50 yr	5.42	4.02	3.28	2.24	1.37	0.80	0.60	0.36	0.24	0.15
100 yr	6.74	5.00	4.08	2.79	1.70	0.95	0.69	0.40	0.27	0.17

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

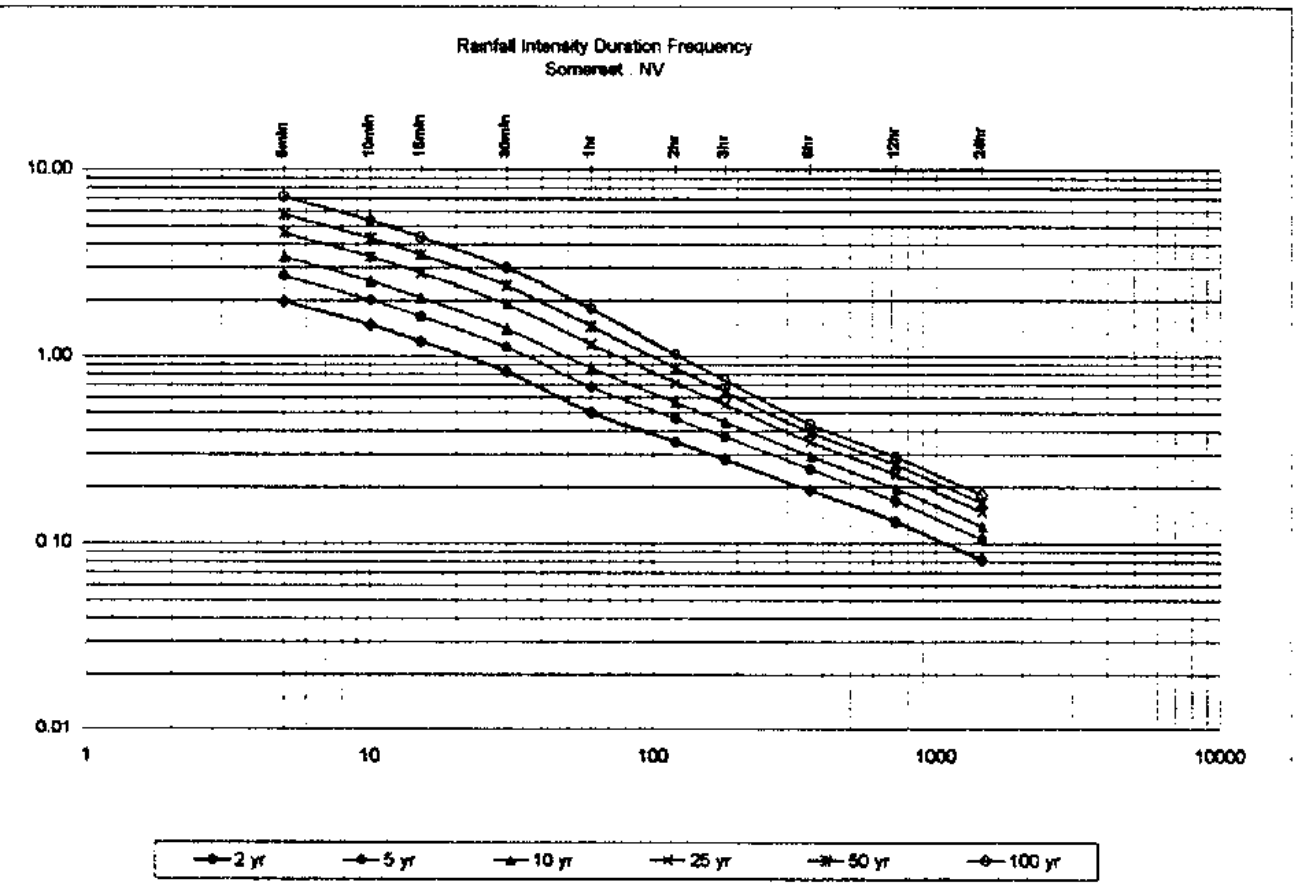
Watershed name: A14
Project; Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.80
2 yr- 6hr	1.15
2 yr- 24hr	1.96

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.17	0.25	0.30	0.41	0.50	0.69	0.84	1.15	1.56	1.96
5 yr	0.22	0.33	0.41	0.56	0.68	0.92	1.11	1.50	2.00	2.51
10 yr	0.28	0.42	0.52	0.71	0.86	1.13	1.33	1.75	2.34	2.94
25 yr	0.38	0.57	0.70	0.95	1.16	1.44	1.64	2.08	2.78	3.51
50 yr	0.48	0.71	0.87	1.19	1.46	1.72	1.92	2.35	3.14	3.94
100 yr	0.60	0.89	1.09	1.48	1.81	2.05	2.23	2.60	3.48	4.35

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.98	1.47	1.20	0.82	0.50	0.35	0.28	0.19	0.13	0.08
5 yr	2.69	2.00	1.63	1.12	0.68	0.46	0.37	0.25	0.17	0.10
10 yr	3.41	2.53	2.06	1.41	0.86	0.56	0.44	0.29	0.20	0.12
25 yr	4.59	3.41	2.78	1.90	1.16	0.72	0.55	0.35	0.23	0.15
50 yr	5.76	4.28	3.49	2.39	1.46	0.86	0.64	0.39	0.26	0.16
100 yr	7.17	5.32	4.34	2.97	1.81	1.02	0.74	0.43	0.29	0.18



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: A15
Project; Somerset
WRC Job No. 3011
Date: 1-Jan-98

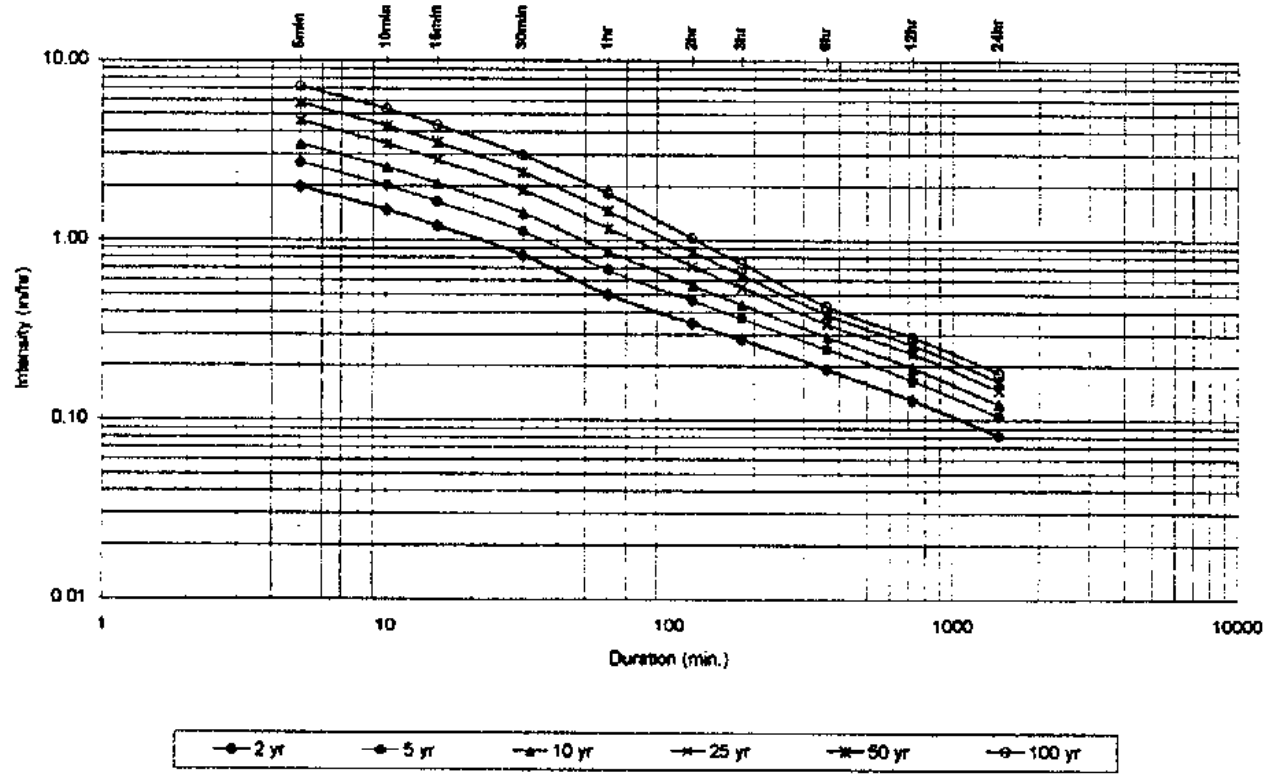
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.50
2 yr- 6hr	1.14
2 yr- 24hr	1.98

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.17	0.25	0.30	0.41	0.50	0.69	0.84	1.14	1.55	1.98
5 yr	0.22	0.33	0.41	0.56	0.68	0.92	1.10	1.48	2.00	2.51
10 yr	0.28	0.42	0.52	0.71	0.86	1.12	1.32	1.73	2.34	2.84
25 yr	0.38	0.57	0.70	0.95	1.16	1.43	1.64	2.08	2.79	3.51
50 yr	0.48	0.71	0.87	1.19	1.46	1.72	1.91	2.33	3.13	3.94
100 yr	0.60	0.89	1.09	1.48	1.81	2.04	2.21	2.58	3.46	4.35

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.98	1.47	1.20	0.82	0.50	0.36	0.28	0.19	0.13	0.08
5 yr	2.69	2.00	1.63	1.12	0.68	0.48	0.37	0.25	0.17	0.10
10 yr	3.41	2.53	2.06	1.41	0.86	0.56	0.44	0.29	0.19	0.12
25 yr	4.58	3.41	2.78	1.90	1.16	0.72	0.55	0.34	0.23	0.15
50 yr	5.76	4.28	3.49	2.39	1.46	0.86	0.64	0.39	0.26	0.16
100 yr	7.17	5.32	4.34	2.97	1.81	1.02	0.74	0.43	0.29	0.18

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC.

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

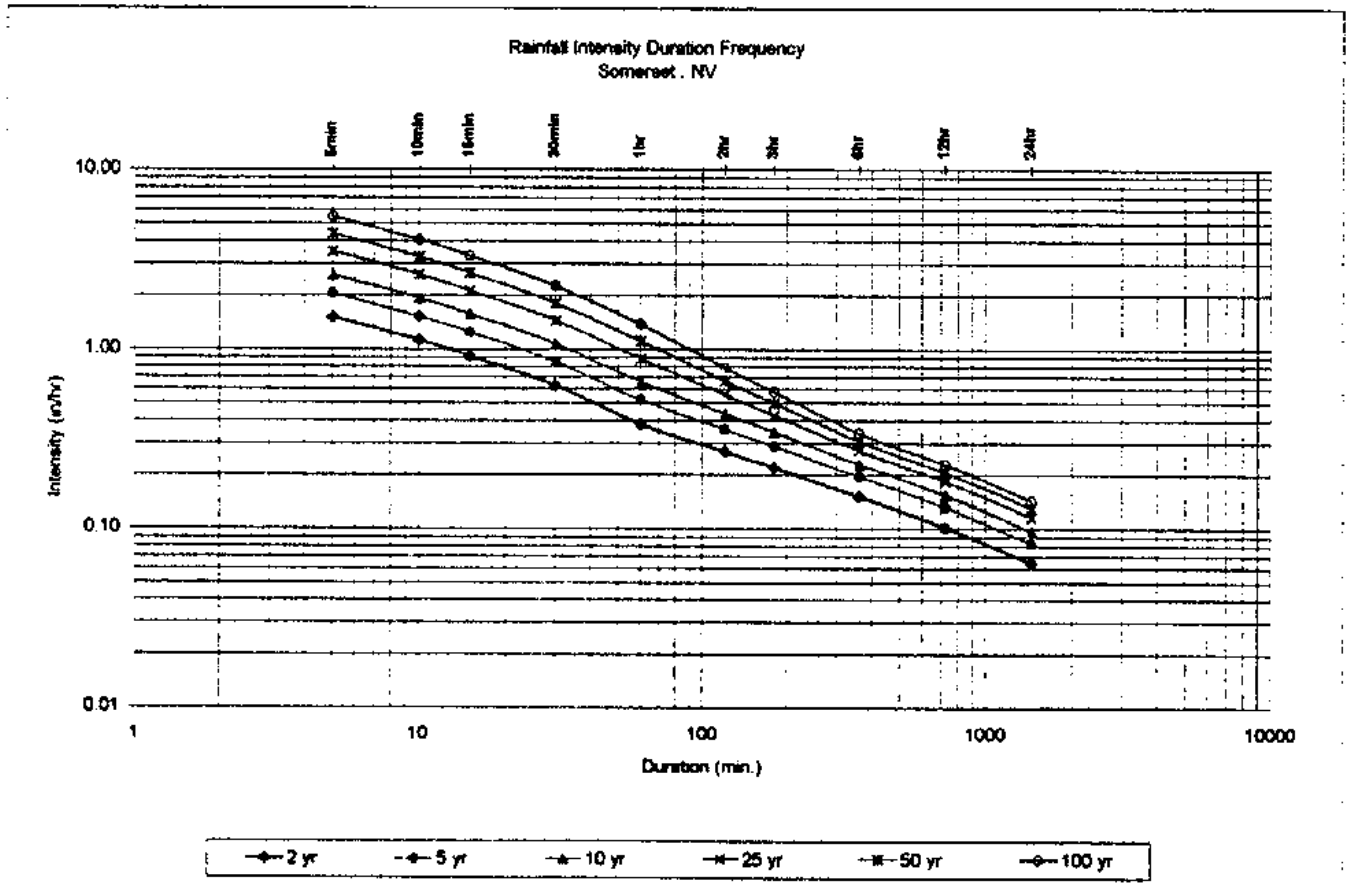
Watershed name: B1
Project; Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.38
2 yr- 6hr	0.90
2 yr- 24hr	1.54

Rainfall Depth in inches, Calculated Following the Equations in Section 8 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.13	0.19	0.23	0.31	0.38	0.54	0.65	0.90	1.22	1.54
5 yr	0.17	0.25	0.31	0.42	0.52	0.71	0.86	1.17	1.57	1.97
10 yr	0.22	0.32	0.39	0.54	0.65	0.87	1.03	1.37	1.84	2.31
25 yr	0.29	0.43	0.53	0.72	0.88	1.11	1.27	1.63	2.19	2.76
50 yr	0.36	0.54	0.66	0.91	1.11	1.32	1.49	1.84	2.47	3.10
100 yr	0.45	0.67	0.83	1.13	1.38	1.57	1.72	2.03	2.73	3.42

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.50	1.12	0.91	0.62	0.38	0.27	0.22	0.15	0.10	0.06
5 yr	2.05	1.52	1.24	0.85	0.52	0.36	0.29	0.20	0.13	0.08
10 yr	2.59	1.92	1.57	1.07	0.65	0.43	0.34	0.23	0.15	0.10
25 yr	3.49	2.59	2.12	1.45	0.88	0.55	0.42	0.27	0.18	0.11
50 yr	4.38	3.25	2.65	1.81	1.11	0.66	0.50	0.31	0.21	0.13
100 yr	5.45	4.04	3.30	2.26	1.38	0.79	0.57	0.34	0.23	0.14



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

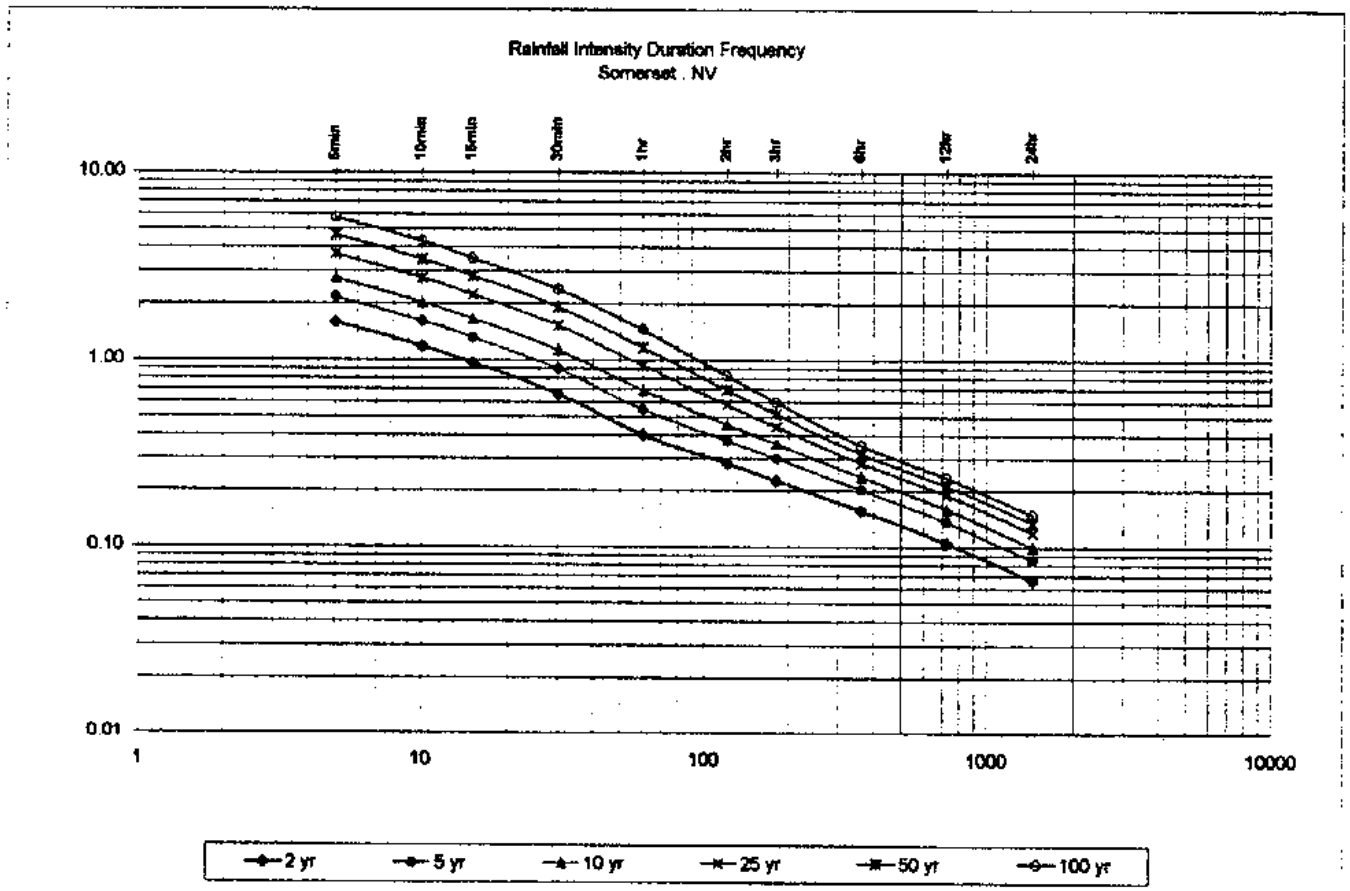
Watershed name: B2
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.40
2 yr- 6hr	0.93
2 yr- 24hr	1.56

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.20	0.24	0.33	0.40	0.56	0.68	0.93	1.26	1.56
5 yr	0.18	0.27	0.33	0.45	0.54	0.74	0.89	1.21	1.62	2.04
10 yr	0.23	0.34	0.41	0.56	0.69	0.90	1.07	1.41	1.90	2.39
25 yr	0.31	0.45	0.56	0.76	0.93	1.15	1.33	1.68	2.26	2.85
50 yr	0.38	0.57	0.70	0.95	1.16	1.38	1.55	1.90	2.55	3.20
100 yr	0.48	0.71	0.87	1.19	1.45	1.64	1.79	2.10	2.82	3.53

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.58	1.18	0.96	0.66	0.40	0.28	0.23	0.16	0.11	0.07
5 yr	2.15	1.60	1.31	0.89	0.54	0.37	0.30	0.20	0.14	0.08
10 yr	2.72	2.02	1.65	1.13	0.69	0.45	0.36	0.24	0.16	0.10
25 yr	3.67	2.73	2.23	1.52	0.93	0.58	0.44	0.28	0.19	0.12
50 yr	4.61	3.42	2.79	1.91	1.16	0.69	0.52	0.32	0.21	0.13
100 yr	5.73	4.26	3.48	2.37	1.45	0.82	0.60	0.35	0.23	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: B3
Project; Somerset
WRC Job No. 3011
Date: 1-Jan-98

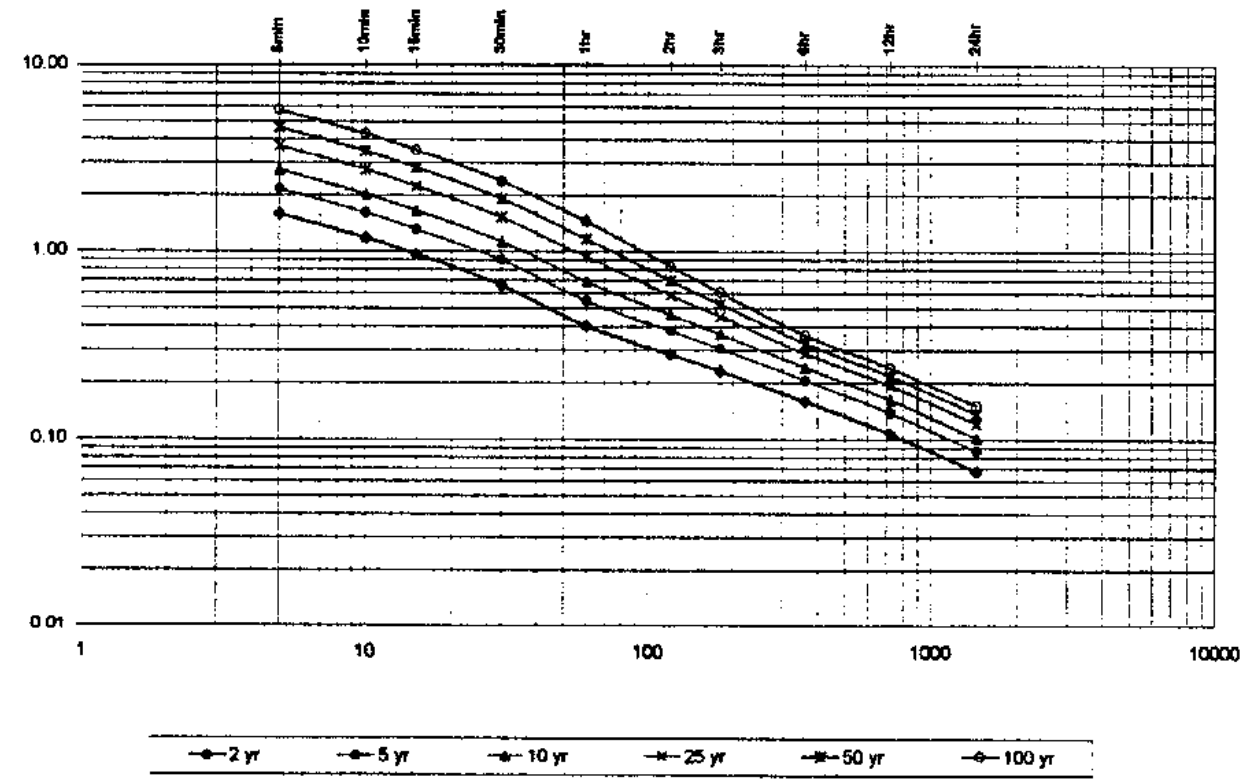
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.40
2 yr- 6hr	0.98
2 yr- 24hr	1.62

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.20	0.24	0.33	0.40	0.56	0.69	0.95	1.29	1.62
5 yr	0.18	0.27	0.33	0.45	0.54	0.75	0.91	1.24	1.65	2.07
10 yr	0.23	0.34	0.41	0.56	0.69	0.91	1.09	1.44	1.94	2.43
25 yr	0.31	0.45	0.56	0.76	0.93	1.16	1.34	1.72	2.31	2.90
50 yr	0.38	0.57	0.70	0.95	1.16	1.40	1.57	1.94	2.60	3.26
100 yr	0.46	0.71	0.87	1.19	1.45	1.68	1.82	2.15	2.67	3.60

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.58	1.18	0.96	0.66	0.40	0.28	0.23	0.16	0.11	0.07
5 yr	2.15	1.60	1.31	0.89	0.54	0.38	0.30	0.21	0.14	0.09
10 yr	2.72	2.02	1.65	1.13	0.69	0.46	0.36	0.24	0.16	0.10
25 yr	3.67	2.73	2.23	1.52	0.93	0.58	0.45	0.29	0.19	0.12
50 yr	4.61	3.42	2.79	1.91	1.16	0.70	0.52	0.32	0.22	0.14
100 yr	5.73	4.26	3.48	2.37	1.45	0.83	0.61	0.38	0.24	0.15

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

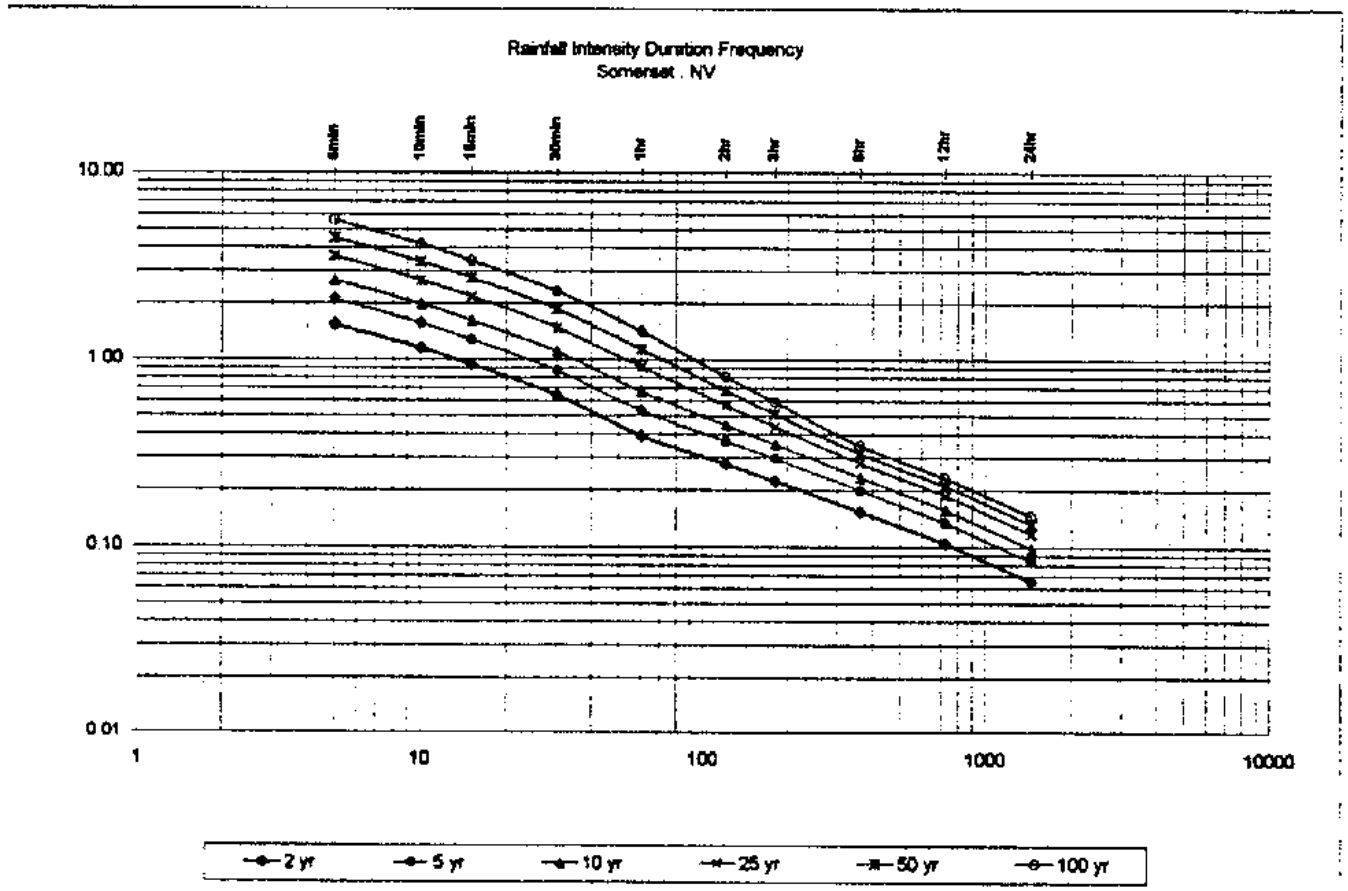
Watershed name: B4
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.39
2 yr- 6hr	0.92
2 yr- 24hr	1.57

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.32	0.39	0.55	0.67	0.92	1.25	1.57
5 yr	0.18	0.26	0.32	0.43	0.53	0.73	0.88	1.20	1.60	2.01
10 yr	0.22	0.33	0.40	0.55	0.67	0.89	1.05	1.40	1.88	2.36
25 yr	0.30	0.44	0.54	0.74	0.90	1.13	1.30	1.67	2.24	2.81
50 yr	0.37	0.56	0.68	0.93	1.13	1.36	1.53	1.88	2.52	3.16
100 yr	0.47	0.69	0.85	1.16	1.41	1.61	1.76	2.08	2.78	3.49

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.54	1.15	0.94	0.64	0.39	0.27	0.22	0.15	0.10	0.07
5 yr	2.10	1.58	1.27	0.87	0.53	0.36	0.29	0.20	0.13	0.08
10 yr	2.66	1.97	1.61	1.10	0.67	0.44	0.35	0.23	0.16	0.10
25 yr	3.58	2.66	2.17	1.48	0.90	0.57	0.43	0.28	0.19	0.12
50 yr	4.49	3.34	2.72	1.86	1.13	0.68	0.51	0.31	0.21	0.13
100 yr	5.59	4.15	3.39	2.32	1.41	0.81	0.59	0.35	0.23	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

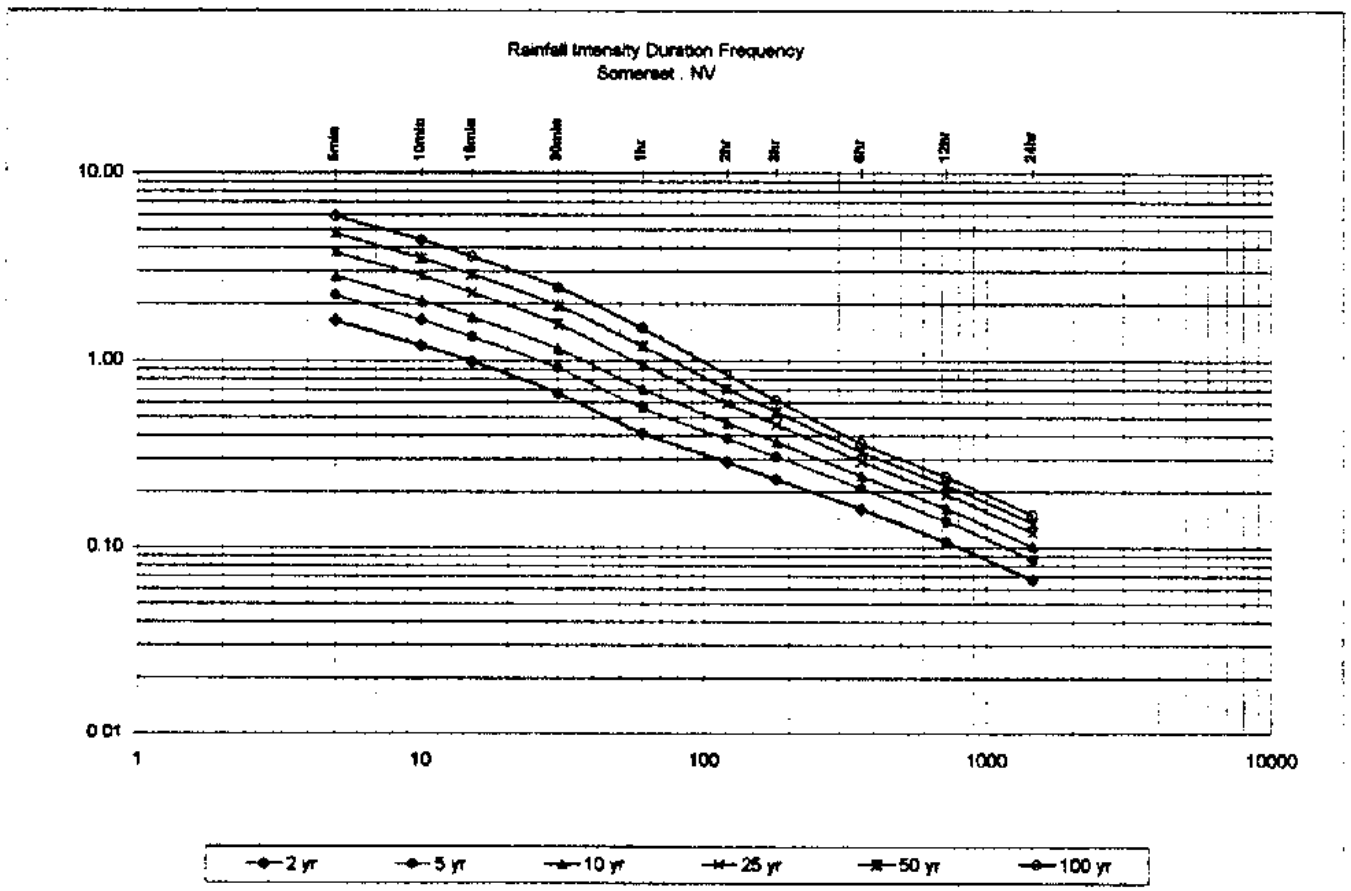
Watershed name:	B5
Project;	Somerset
WRC Job No.	3011
Date:	1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.96
2 yr- 24hr	1.61

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.20	0.25	0.34	0.41	0.57	0.70	0.96	1.29	1.61
5 yr	0.18	0.27	0.33	0.46	0.56	0.76	0.92	1.25	1.65	2.06
10 yr	0.23	0.35	0.42	0.58	0.71	0.93	1.10	1.46	1.94	2.42
25 yr	0.31	0.47	0.57	0.78	0.95	1.19	1.38	1.74	2.31	2.88
50 yr	0.39	0.58	0.72	0.98	1.19	1.42	1.60	1.96	2.60	3.24
100 yr	0.49	0.73	0.89	1.22	1.48	1.69	1.84	2.17	2.87	3.57

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.29	0.23	0.16	0.11	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.38	0.31	0.21	0.14	0.09
10 yr	2.79	2.07	1.69	1.16	0.71	0.47	0.37	0.24	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.59	0.45	0.29	0.19	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.71	0.53	0.33	0.22	0.13
100 yr	5.89	4.36	3.56	2.43	1.48	0.84	0.61	0.36	0.24	0.15



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: B6
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

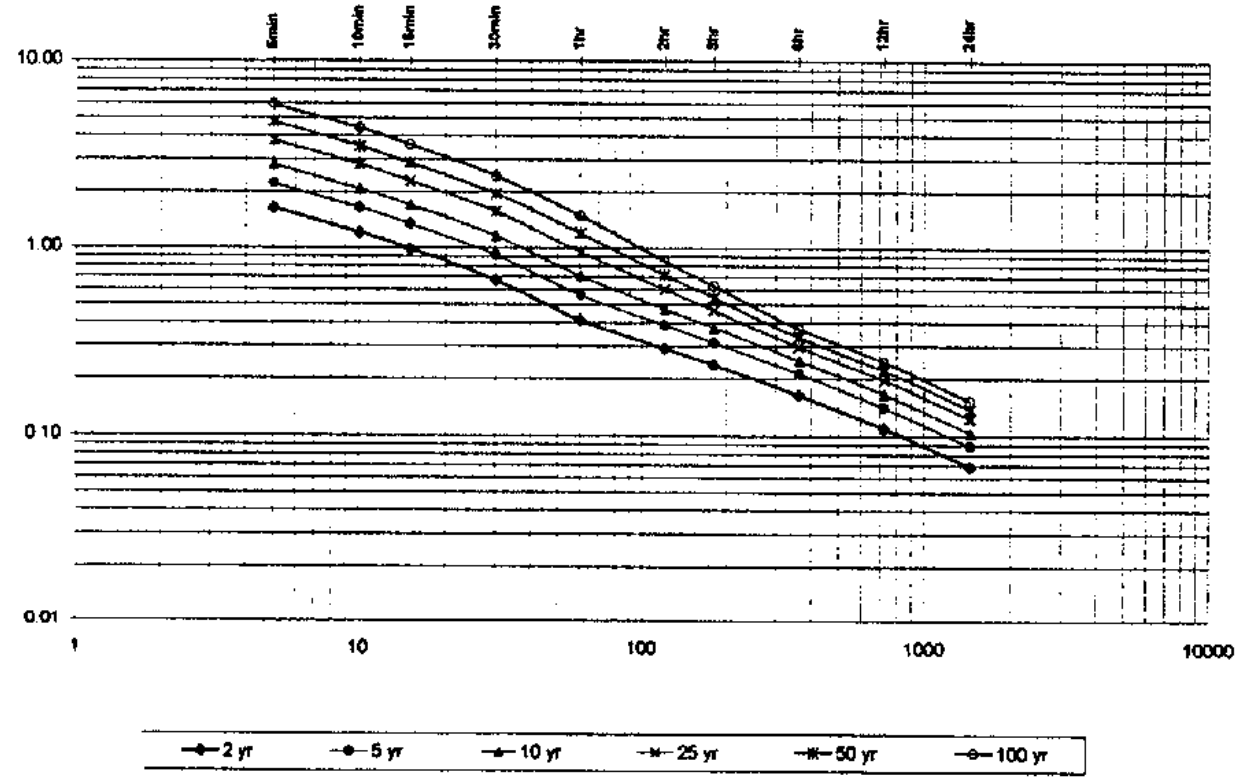
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.98
2 yr- 24hr	1.65

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.20	0.25	0.34	0.41	0.58	0.71	0.98	1.32	1.65
5 yr	0.18	0.27	0.33	0.46	0.56	0.77	0.93	1.27	1.69	2.11
10 yr	0.23	0.35	0.42	0.58	0.71	0.94	1.12	1.49	1.98	2.48
25 yr	0.31	0.47	0.57	0.78	0.95	1.20	1.38	1.77	2.36	2.96
50 yr	0.39	0.58	0.72	0.98	1.19	1.43	1.62	2.00	2.66	3.32
100 yr	0.49	0.73	0.89	1.22	1.48	1.70	1.87	2.21	2.94	3.66

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.29	0.24	0.16	0.11	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.39	0.31	0.21	0.14	0.09
10 yr	2.79	2.07	1.69	1.16	0.71	0.47	0.37	0.25	0.17	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.60	0.46	0.30	0.20	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.72	0.54	0.33	0.22	0.14
100 yr	5.88	4.36	3.56	2.43	1.48	0.85	0.62	0.37	0.24	0.15

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: B7
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

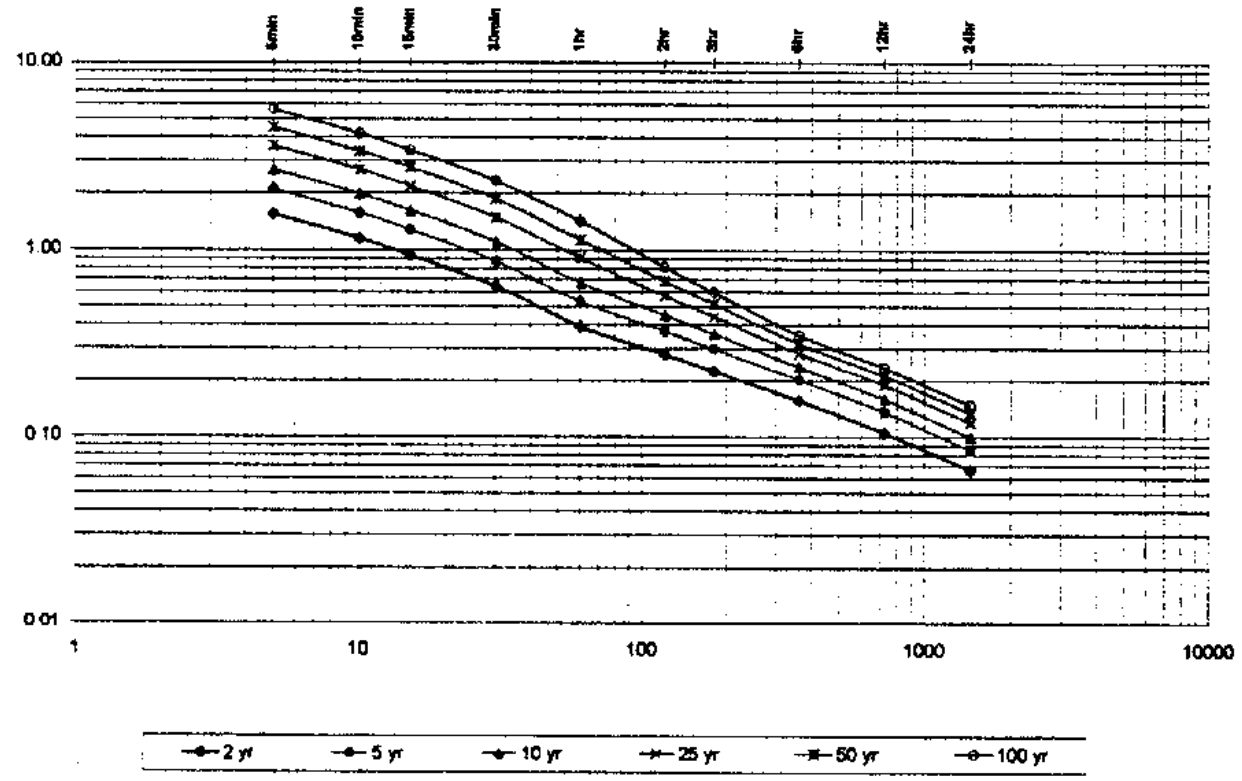
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.39
2 yr- 6hr	0.93
2 yr- 24hr	1.59

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.32	0.39	0.55	0.67	0.93	1.28	1.59
5 yr	0.18	0.26	0.32	0.43	0.53	0.73	0.89	1.21	1.62	2.04
10 yr	0.22	0.33	0.40	0.55	0.67	0.89	1.06	1.41	1.90	2.39
25 yr	0.30	0.44	0.54	0.74	0.90	1.14	1.31	1.68	2.26	2.85
50 yr	0.37	0.56	0.68	0.93	1.13	1.36	1.54	1.90	2.55	3.20
100 yr	0.47	0.69	0.85	1.16	1.41	1.62	1.77	2.10	2.82	3.53

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.54	1.15	0.94	0.64	0.39	0.28	0.22	0.16	0.11	0.07
5 yr	2.10	1.56	1.27	0.87	0.53	0.37	0.30	0.20	0.14	0.08
10 yr	2.66	1.97	1.61	1.10	0.67	0.45	0.35	0.24	0.16	0.10
25 yr	3.59	2.66	2.17	1.48	0.90	0.57	0.44	0.28	0.19	0.12
50 yr	4.49	3.34	2.72	1.86	1.13	0.68	0.51	0.32	0.21	0.13
100 yr	5.59	4.15	3.39	2.32	1.41	0.81	0.59	0.35	0.23	0.15

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC.

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

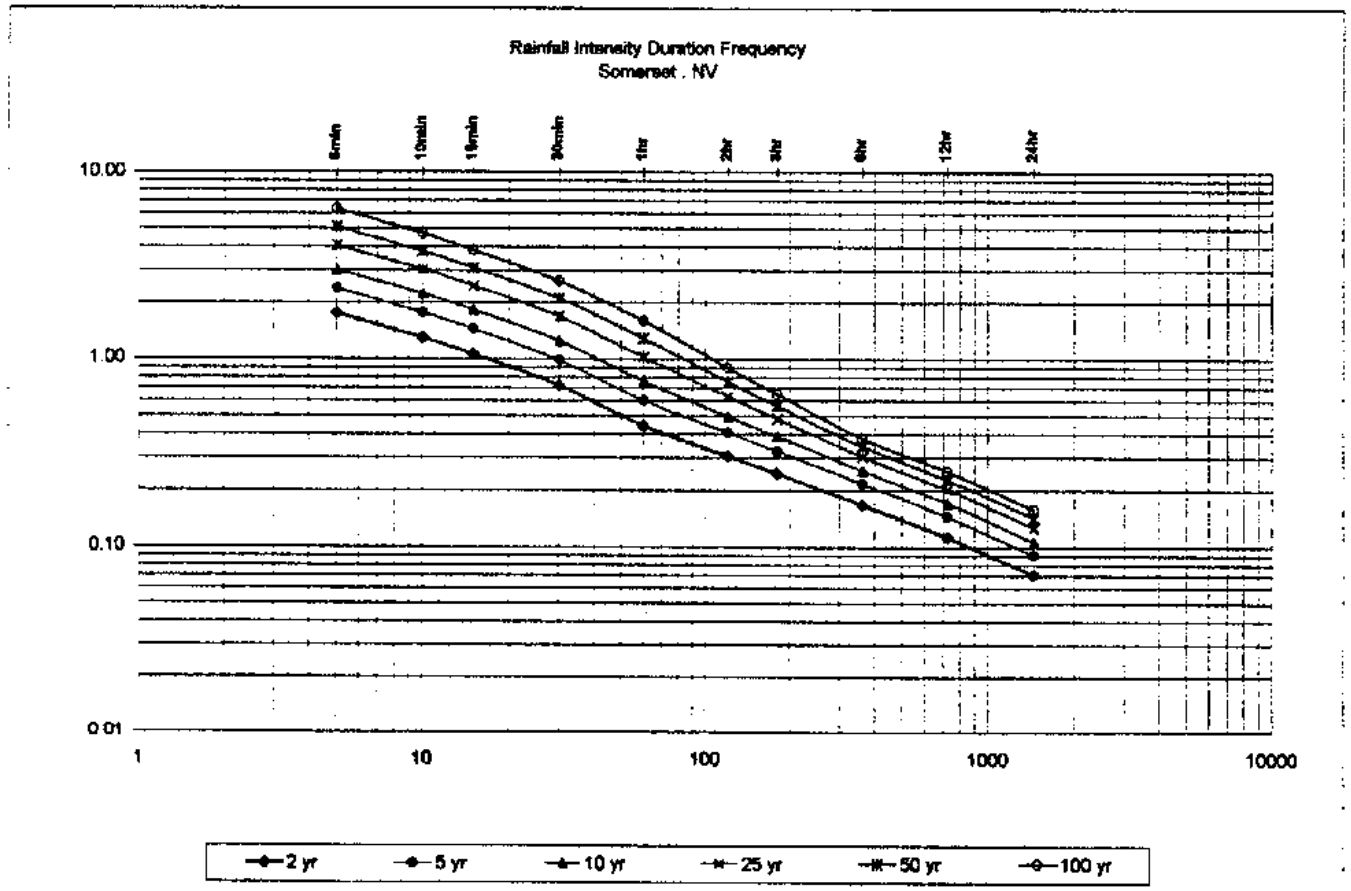
Watershed name: 88
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurrance	Depth (Inch)
2 yr-1hr	0.44
2 yr- 6hr	1.00
2 yr- 24hr	1.70

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.28	0.36	0.44	0.61	0.73	1.00	1.35	1.70
5 yr	0.20	0.29	0.36	0.49	0.60	0.81	0.97	1.30	1.74	2.18
10 yr	0.25	0.37	0.45	0.62	0.76	0.98	1.16	1.52	2.04	2.55
25 yr	0.34	0.50	0.61	0.84	1.02	1.28	1.44	1.81	2.43	3.04
50 yr	0.42	0.63	0.77	1.05	1.28	1.51	1.68	2.04	2.73	3.42
100 yr	0.53	0.78	0.96	1.31	1.59	1.79	1.94	2.28	3.02	3.77

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.74	1.29	1.06	0.72	0.44	0.30	0.24	0.17	0.11	0.07
5 yr	2.37	1.76	1.44	0.96	0.60	0.40	0.32	0.22	0.14	0.09
10 yr	3.00	2.22	1.82	1.24	0.76	0.49	0.39	0.25	0.17	0.11
25 yr	4.04	3.00	2.45	1.67	1.02	0.63	0.48	0.30	0.20	0.13
50 yr	5.07	3.76	3.07	2.10	1.28	0.75	0.56	0.34	0.23	0.14
100 yr	6.31	4.68	3.82	2.61	1.59	0.90	0.65	0.38	0.25	0.16



WRC NEVADA, Inc

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

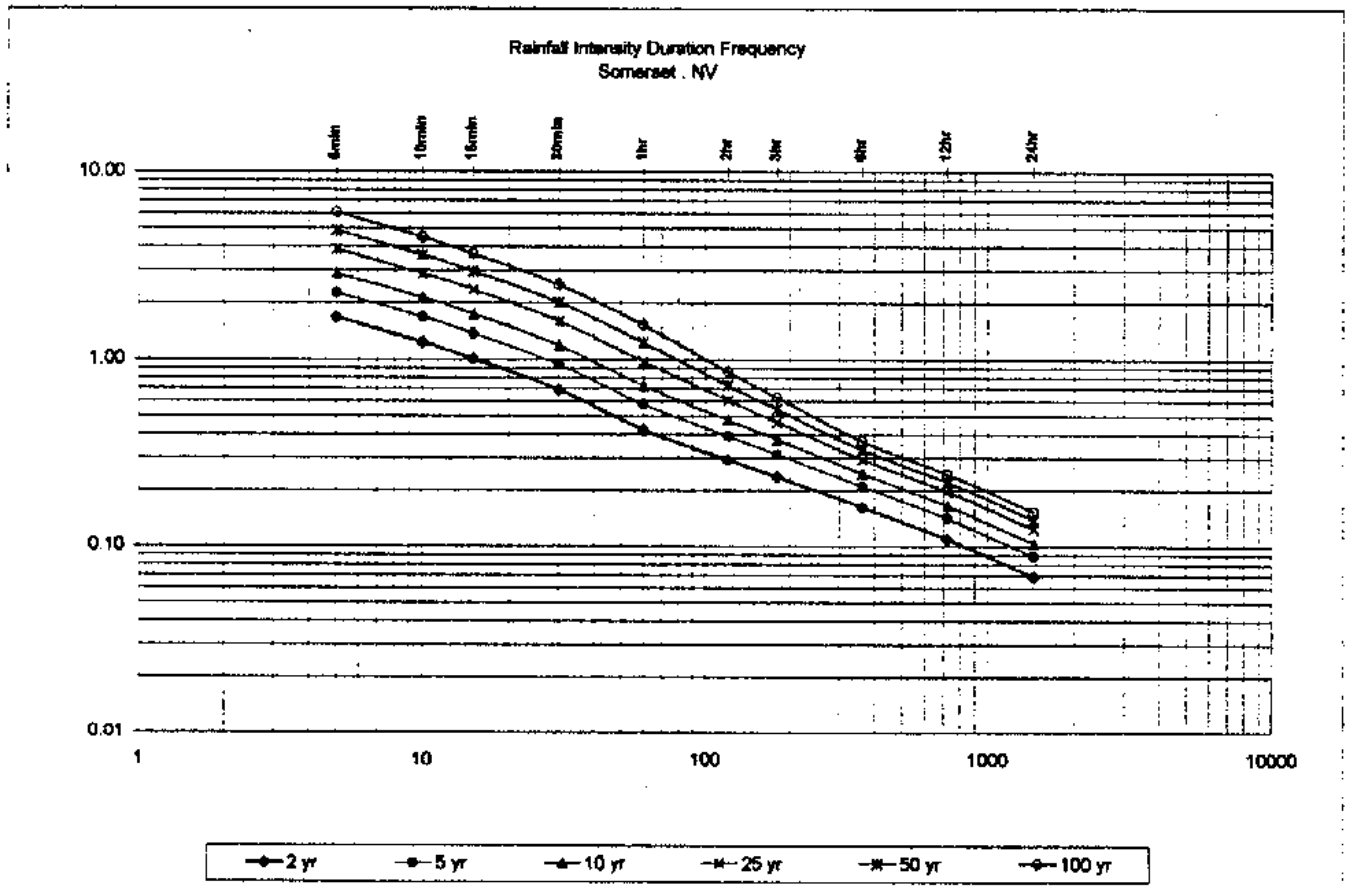
Watershed name: 89
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	0.97
2 yr- 24hr	1.65

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.21	0.25	0.34	0.42	0.58	0.71	0.97	1.31	1.65
5 yr	0.19	0.28	0.34	0.47	0.57	0.78	0.93	1.26	1.69	2.11
10 yr	0.24	0.35	0.43	0.59	0.72	0.96	1.12	1.47	1.97	2.48
25 yr	0.32	0.48	0.58	0.80	0.97	1.21	1.39	1.78	2.35	2.95
50 yr	0.40	0.60	0.73	1.00	1.22	1.45	1.62	1.98	2.65	3.32
100 yr	0.50	0.74	0.91	1.25	1.52	1.72	1.87	2.19	2.93	3.66

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.66	1.23	1.01	0.69	0.42	0.29	0.24	0.16	0.11	0.07
5 yr	2.26	1.68	1.37	0.94	0.57	0.39	0.31	0.21	0.14	0.09
10 yr	2.86	2.12	1.73	1.18	0.72	0.47	0.37	0.25	0.16	0.10
25 yr	3.86	2.86	2.34	1.60	0.97	0.60	0.46	0.29	0.20	0.12
50 yr	4.84	3.59	2.93	2.00	1.22	0.72	0.54	0.33	0.22	0.14
100 yr	6.02	4.47	3.65	2.49	1.52	0.86	0.62	0.37	0.24	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

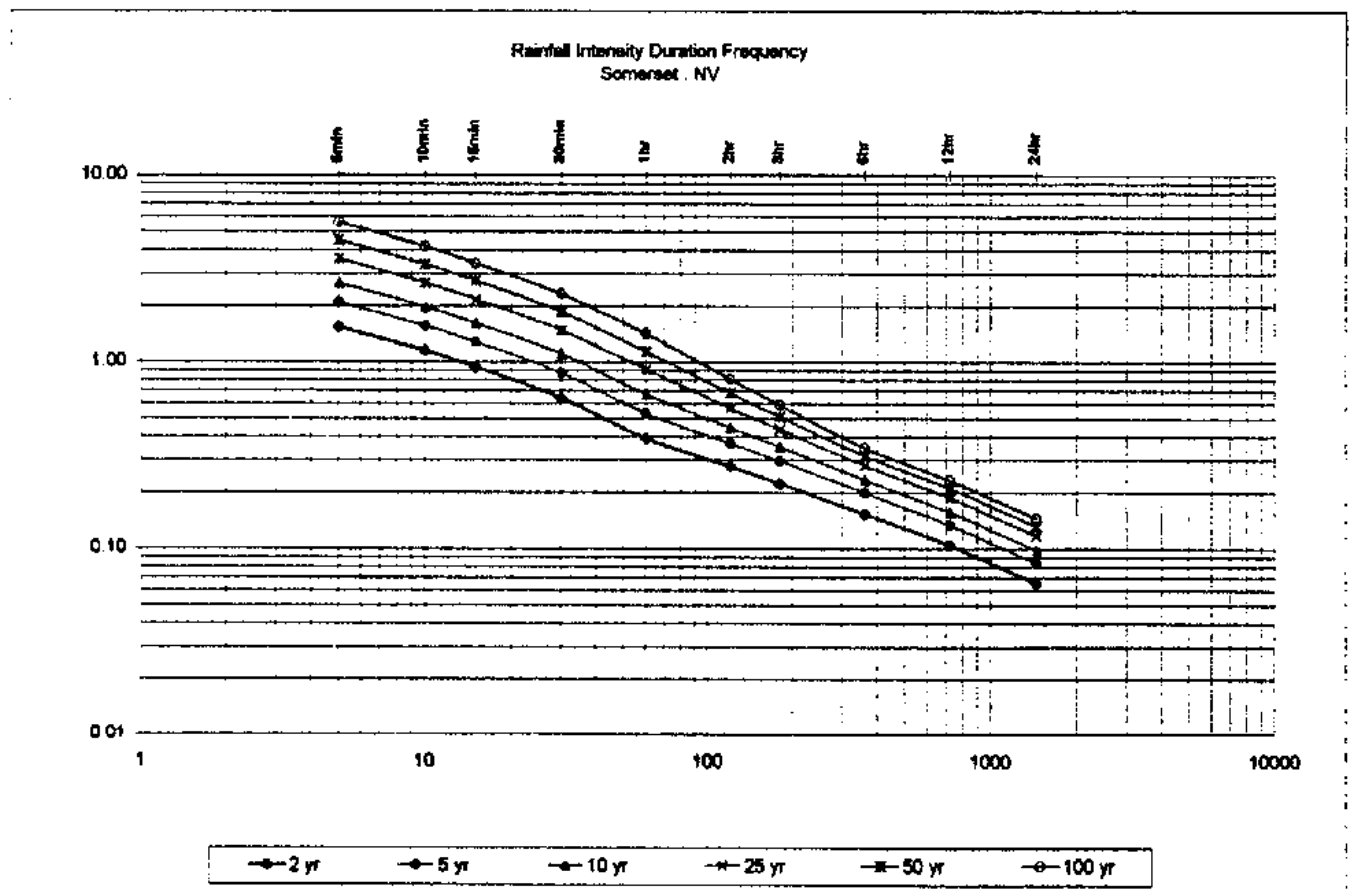
Watershed name: B10
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.39
2 yr- 6hr	0.92
2 yr- 24hr	1.57

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.32	0.39	0.55	0.67	0.92	1.25	1.57
5 yr	0.18	0.26	0.32	0.43	0.53	0.73	0.88	1.20	1.60	2.01
10 yr	0.22	0.33	0.40	0.55	0.67	0.89	1.05	1.40	1.88	2.36
25 yr	0.30	0.44	0.54	0.74	0.90	1.13	1.30	1.67	2.24	2.81
50 yr	0.37	0.56	0.66	0.93	1.13	1.36	1.53	1.88	2.52	3.16
100 yr	0.47	0.69	0.85	1.16	1.41	1.61	1.76	2.08	2.78	3.49

					INTENSITY (in/hr)					
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.54	1.15	0.94	0.64	0.39	0.27	0.22	0.15	0.10	0.07
5 yr	2.10	1.58	1.27	0.87	0.53	0.36	0.29	0.20	0.13	0.08
10 yr	2.66	1.97	1.61	1.10	0.67	0.44	0.35	0.23	0.16	0.10
25 yr	3.58	2.66	2.17	1.48	0.90	0.57	0.43	0.28	0.19	0.12
50 yr	4.49	3.34	2.72	1.86	1.13	0.68	0.51	0.31	0.21	0.13
100 yr	5.59	4.15	3.39	2.32	1.41	0.81	0.59	0.35	0.23	0.15



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: B11
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

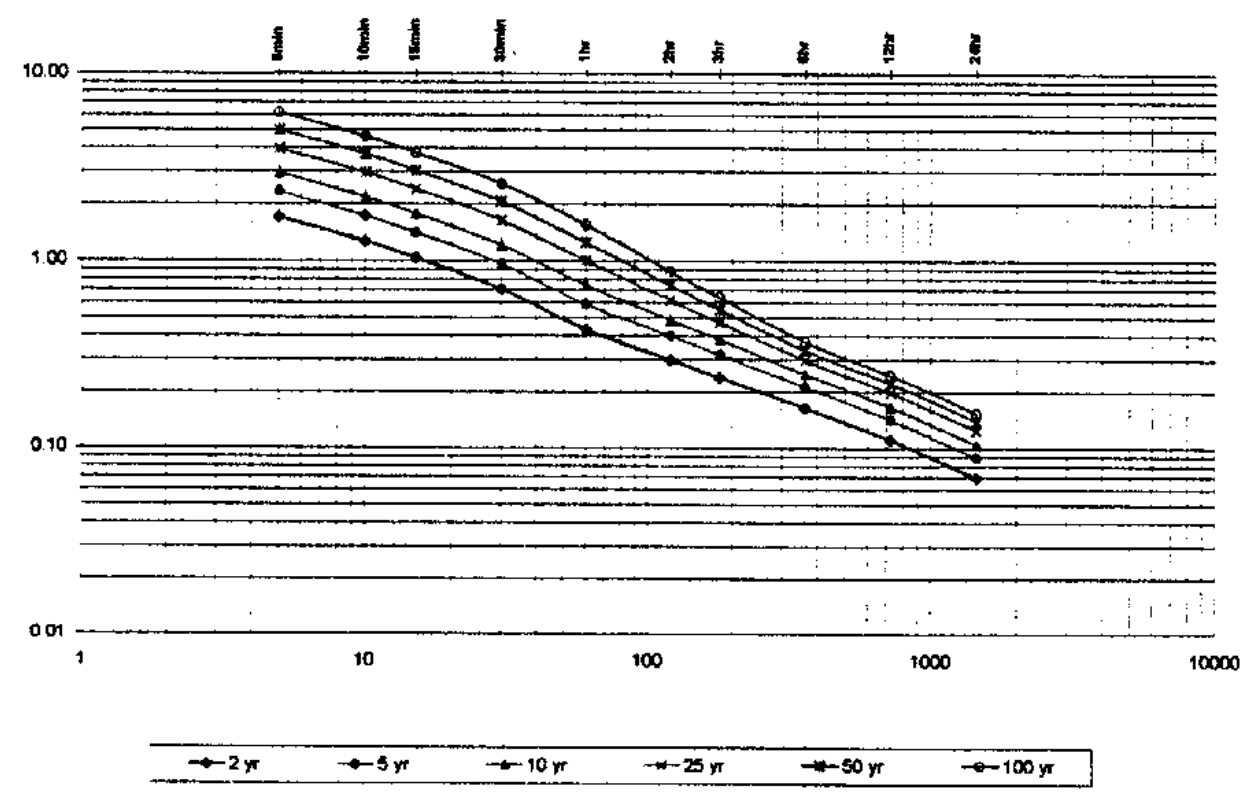
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.43
2 yr- 6hr	0.98
2 yr- 24hr	1.68

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.14	0.21	0.26	0.35	0.43	0.59	0.72	0.98	1.32	1.68
5 yr	0.19	0.29	0.35	0.48	0.58	0.79	0.95	1.27	1.70	2.12
10 yr	0.24	0.36	0.44	0.61	0.74	0.98	1.13	1.49	1.99	2.49
25 yr	0.33	0.49	0.60	0.82	1.00	1.23	1.41	1.77	2.37	2.97
50 yr	0.41	0.61	0.75	1.03	1.25	1.47	1.64	2.00	2.67	3.34
100 yr	0.51	0.76	0.93	1.28	1.56	1.75	1.90	2.21	2.95	3.69

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.70	1.26	1.03	0.71	0.43	0.30	0.24	0.16	0.11	0.07
5 yr	2.32	1.72	1.40	0.98	0.58	0.40	0.32	0.21	0.14	0.09
10 yr	2.93	2.17	1.78	1.21	0.74	0.48	0.38	0.25	0.17	0.10
25 yr	3.95	2.93	2.39	1.64	1.00	0.61	0.47	0.30	0.20	0.12
50 yr	4.96	3.68	3.00	2.06	1.25	0.74	0.55	0.33	0.22	0.14
100 yr	6.16	4.58	3.74	2.55	1.56	0.88	0.63	0.37	0.25	0.15

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC.

Rainfall Depth - Duration - Frequency Data

Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

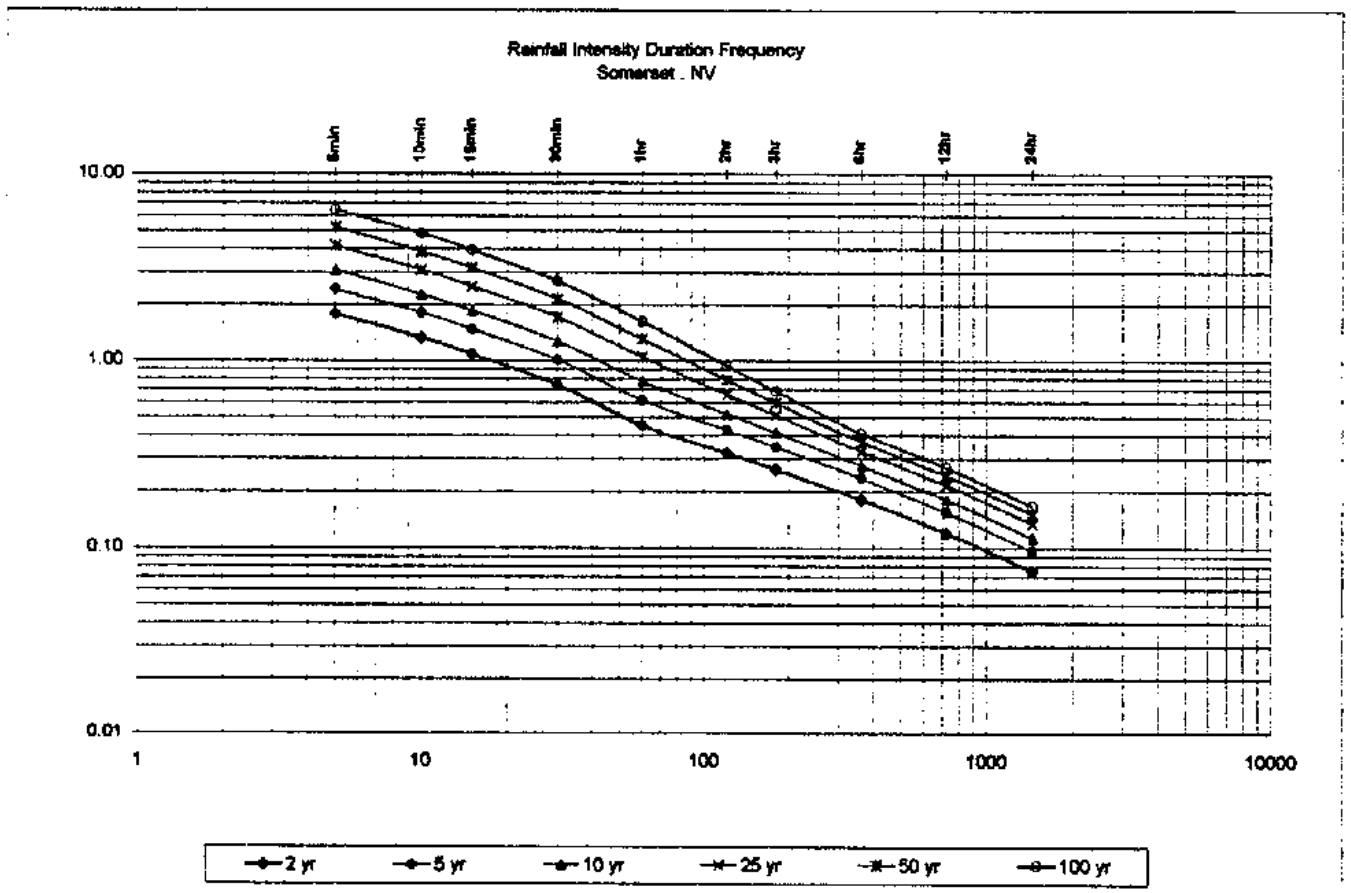
Watershed name: B12
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.48
2 yr- 6hr	1.08
2 yr- 24hr	1.80

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.15	0.22	0.27	0.37	0.45	0.64	0.78	1.08	1.44	1.80
5 yr	0.20	0.30	0.37	0.50	0.61	0.85	1.03	1.40	1.85	2.30
10 yr	0.26	0.38	0.46	0.63	0.77	1.03	1.23	1.64	2.17	2.70
25 yr	0.34	0.51	0.63	0.86	1.04	1.32	1.52	1.95	2.59	3.22
50 yr	0.43	0.64	0.79	1.07	1.31	1.58	1.78	2.20	2.91	3.62
100 yr	0.54	0.80	0.98	1.34	1.63	1.87	2.06	2.44	3.22	4.00

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.78	1.32	1.08	0.74	0.45	0.32	0.26	0.18	0.12	0.08
5 yr	2.42	1.80	1.47	1.00	0.61	0.42	0.34	0.23	0.15	0.10
10 yr	3.07	2.28	1.86	1.27	0.77	0.52	0.41	0.27	0.18	0.11
25 yr	4.13	3.07	2.51	1.71	1.04	0.66	0.51	0.33	0.22	0.13
50 yr	5.19	3.85	3.14	2.15	1.31	0.79	0.59	0.37	0.24	0.15
100 yr	6.45	4.79	3.91	2.67	1.63	0.94	0.69	0.41	0.27	0.17



WRC NEVADA, Inc

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

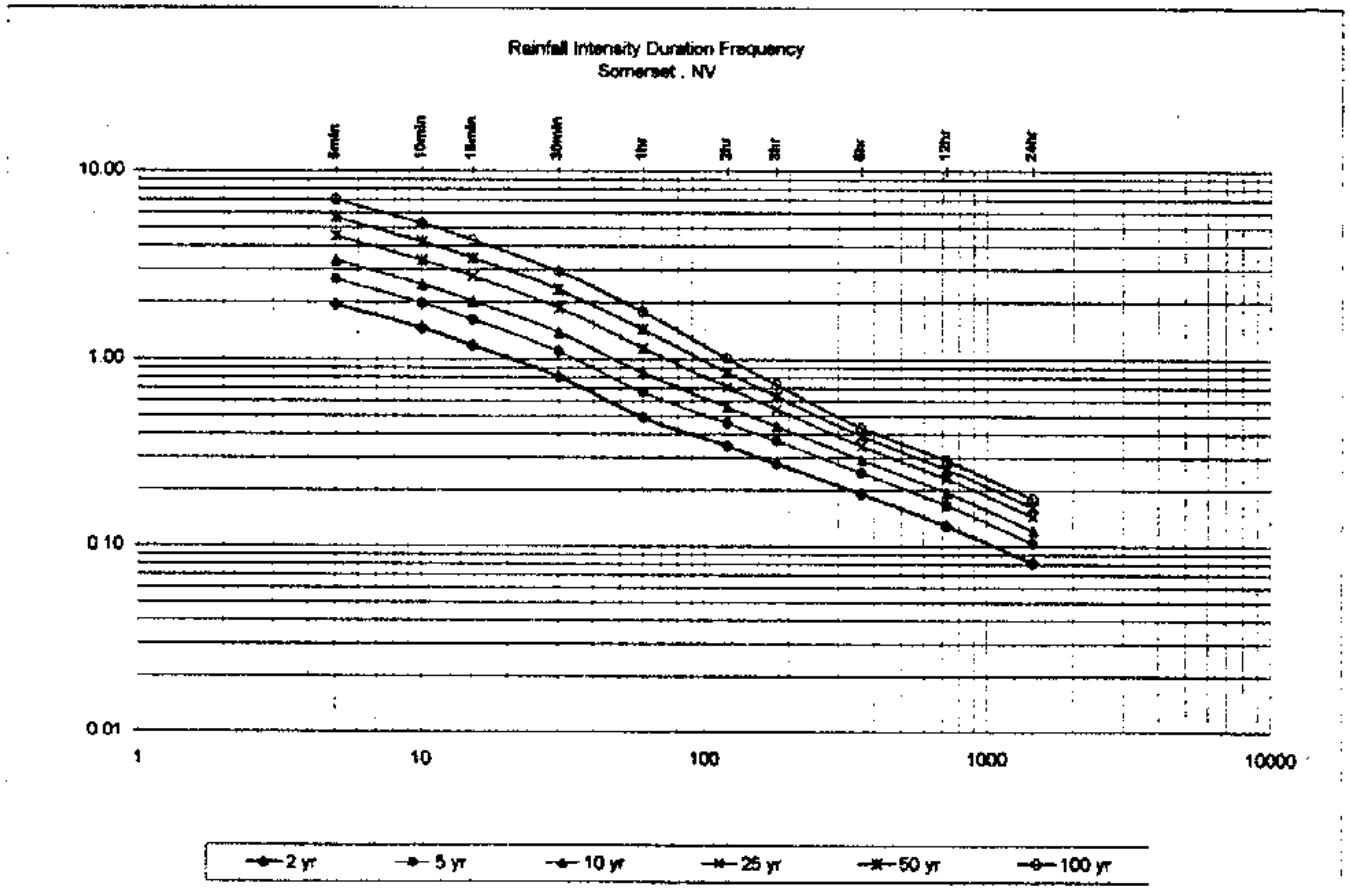
Watershed name: B13
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.49
2 yr- 6hr	1.14
2 yr- 24hr	1.94

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.16	0.24	0.29	0.40	0.49	0.68	0.83	1.14	1.54	1.94
5 yr	0.22	0.33	0.40	0.55	0.67	0.91	1.10	1.48	1.96	2.48
10 yr	0.28	0.41	0.51	0.69	0.84	1.11	1.31	1.73	2.32	2.91
25 yr	0.38	0.56	0.68	0.93	1.14	1.41	1.62	2.06	2.77	3.47
50 yr	0.47	0.70	0.86	1.17	1.43	1.69	1.90	2.33	3.11	3.90
100 yr	0.58	0.87	1.06	1.45	1.77	2.01	2.20	2.58	3.44	4.31

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.94	1.44	1.16	0.80	0.49	0.34	0.28	0.19	0.13	0.08
5 yr	2.64	1.96	1.60	1.09	0.67	0.46	0.37	0.25	0.17	0.10
10 yr	3.34	2.48	2.02	1.38	0.84	0.55	0.44	0.29	0.19	0.12
25 yr	4.50	3.34	2.73	1.86	1.14	0.71	0.54	0.34	0.23	0.14
50 yr	5.66	4.19	3.42	2.34	1.43	0.85	0.63	0.39	0.26	0.16
100 yr	7.02	5.21	4.26	2.91	1.77	1.01	0.73	0.43	0.29	0.18



WRC NEVADA INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

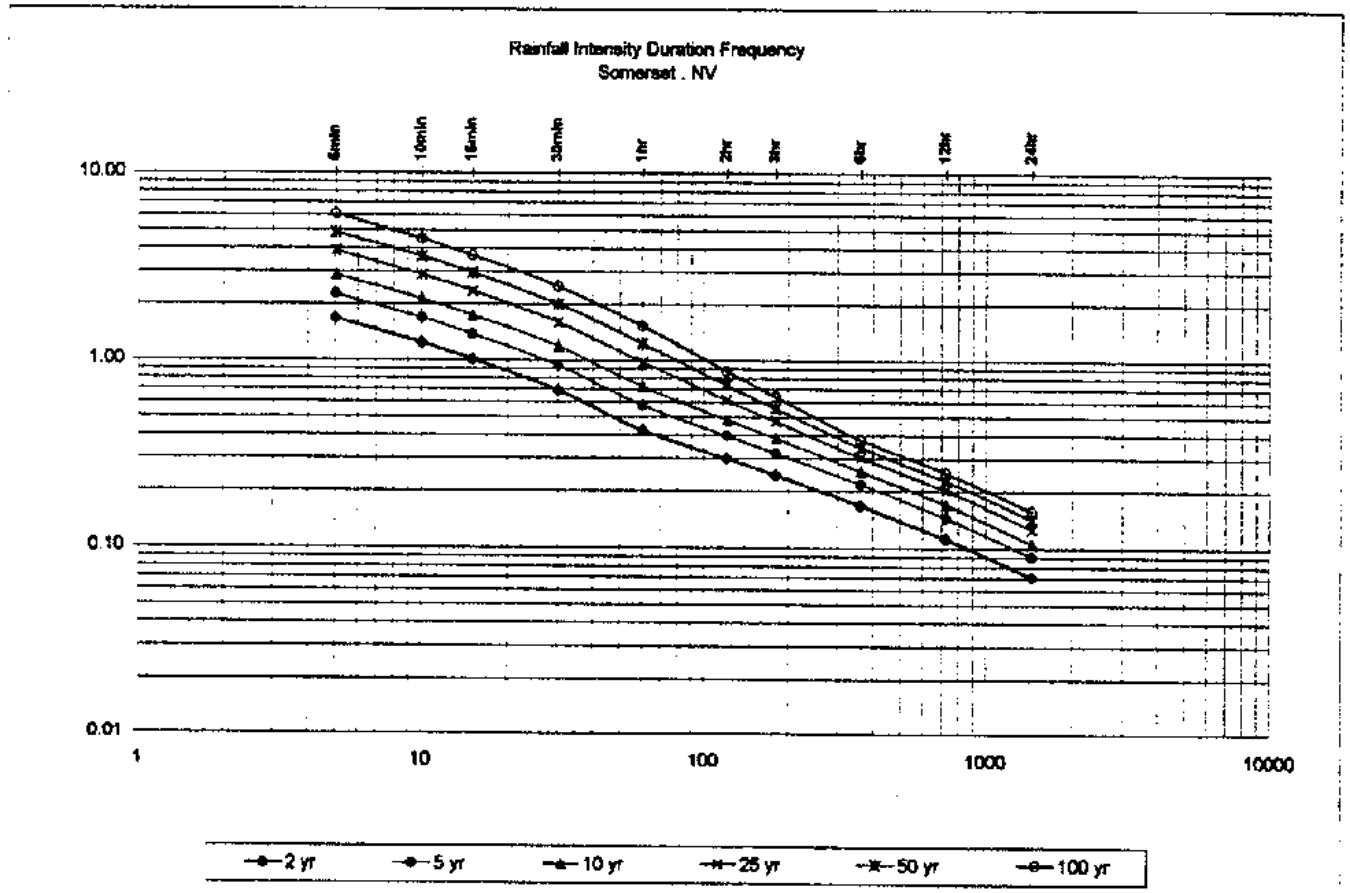
Watershed name: B14
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	1.00
2 yr- 24hr	1.69

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.21	0.25	0.34	0.42	0.59	0.73	1.00	1.35	1.69
5 yr	0.19	0.28	0.34	0.47	0.57	0.79	0.96	1.30	1.73	2.16
10 yr	0.24	0.35	0.43	0.59	0.72	0.96	1.14	1.52	2.03	2.54
25 yr	0.32	0.48	0.58	0.80	0.97	1.22	1.41	1.81	2.42	3.03
50 yr	0.40	0.60	0.73	1.00	1.22	1.47	1.65	2.04	2.72	3.40
100 yr	0.50	0.74	0.91	1.25	1.52	1.74	1.91	2.26	3.01	3.75

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.66	1.23	1.01	0.69	0.42	0.30	0.24	0.17	0.11	0.07
5 yr	2.26	1.68	1.37	0.94	0.57	0.39	0.32	0.22	0.14	0.09
10 yr	2.86	2.12	1.73	1.18	0.72	0.48	0.38	0.25	0.17	0.11
25 yr	3.86	2.86	2.34	1.60	0.97	0.61	0.47	0.30	0.20	0.13
50 yr	4.84	3.59	2.93	2.00	1.22	0.73	0.55	0.34	0.23	0.14
100 yr	6.02	4.47	3.65	2.49	1.52	0.87	0.64	0.38	0.25	0.16



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: B15
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

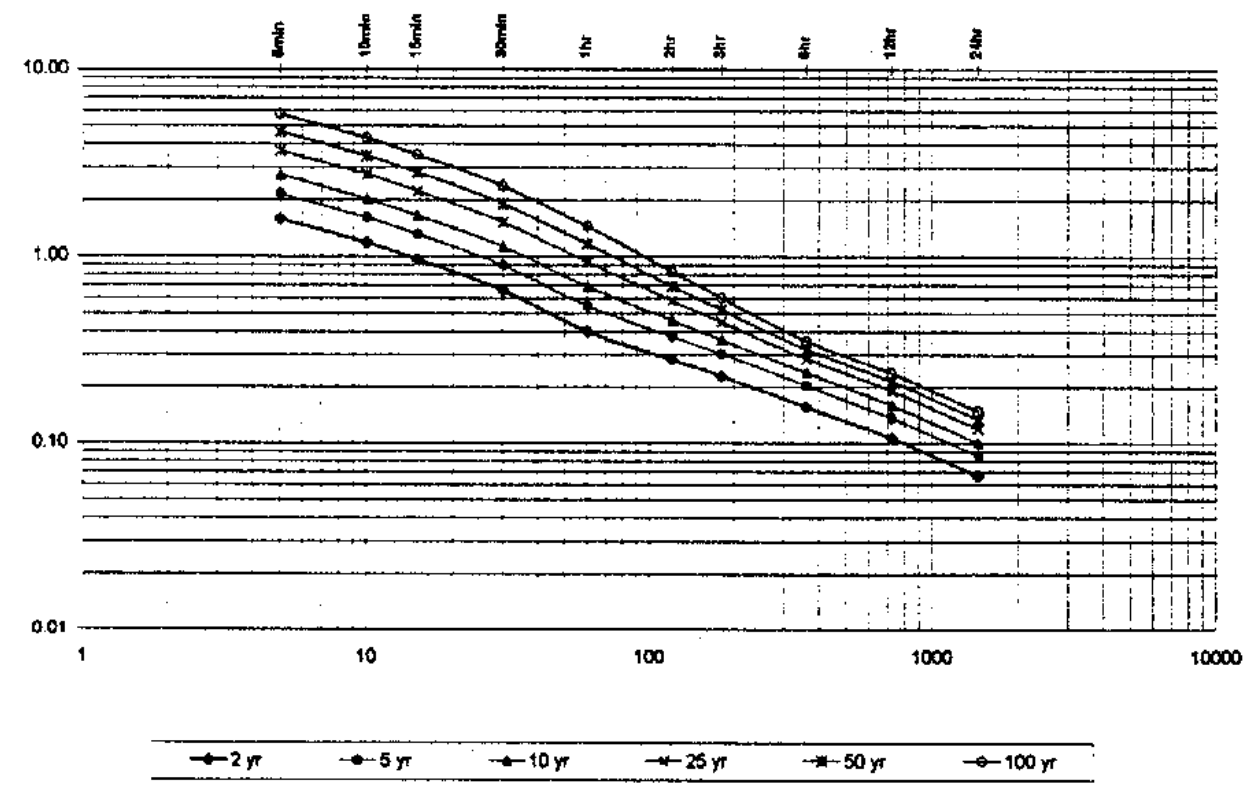
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.40
2 yr- 6hr	0.94
2 yr- 24hr	1.80

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.20	0.24	0.33	0.40	0.56	0.68	0.94	1.27	1.80
5 yr	0.18	0.27	0.33	0.45	0.54	0.75	0.90	1.22	1.64	2.05
10 yr	0.23	0.34	0.41	0.56	0.69	0.91	1.08	1.43	1.91	2.40
25 yr	0.31	0.45	0.56	0.76	0.93	1.16	1.33	1.70	2.28	2.86
50 yr	0.38	0.57	0.70	0.95	1.16	1.39	1.56	1.92	2.57	3.22
100 yr	0.48	0.71	0.87	1.19	1.45	1.65	1.80	2.12	2.84	3.56

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.56	1.18	0.96	0.66	0.40	0.28	0.23	0.16	0.11	0.07
5 yr	2.15	1.60	1.31	0.89	0.54	0.37	0.30	0.20	0.14	0.09
10 yr	2.72	2.02	1.65	1.13	0.69	0.45	0.36	0.24	0.16	0.10
25 yr	3.67	2.73	2.23	1.52	0.93	0.58	0.44	0.28	0.19	0.12
50 yr	4.61	3.42	2.79	1.91	1.16	0.69	0.52	0.32	0.21	0.13
100 yr	5.73	4.26	3.48	2.37	1.45	0.83	0.60	0.35	0.24	0.15

Rainfall Intensity Duration Frequency
Somerset , NV



WESTERN NEVADA

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

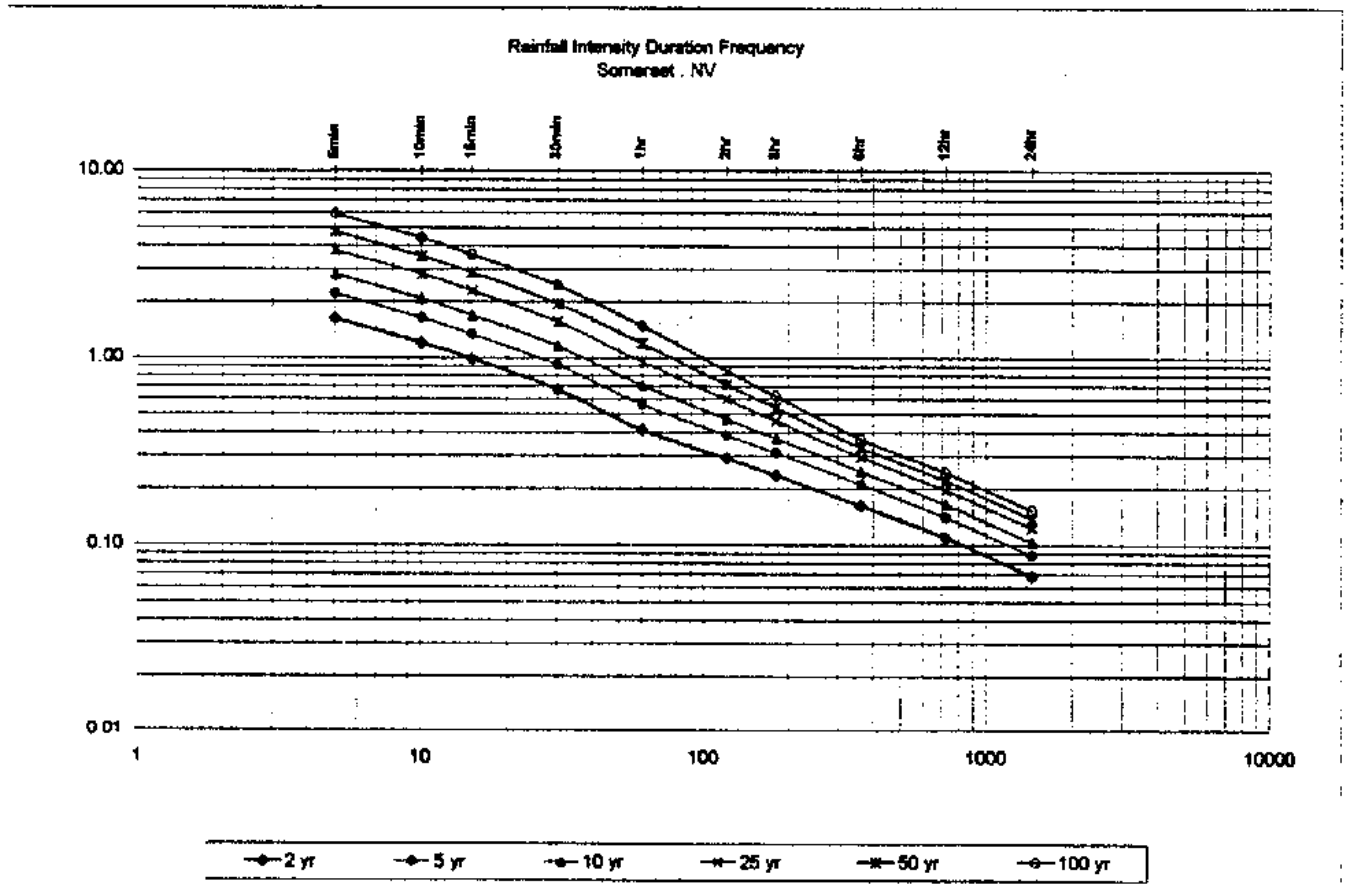
Watershed name: B16
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.97
2 yr- 24hr	1.64

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.20	0.25	0.34	0.41	0.58	0.70	0.97	1.31	1.64
5 yr	0.18	0.27	0.33	0.46	0.56	0.77	0.93	1.28	1.68	2.10
10 yr	0.23	0.35	0.42	0.58	0.71	0.94	1.11	1.47	1.97	2.46
25 yr	0.31	0.47	0.57	0.78	0.95	1.19	1.37	1.76	2.35	2.94
50 yr	0.39	0.58	0.72	0.98	1.19	1.43	1.61	1.98	2.64	3.30
100 yr	0.49	0.73	0.89	1.22	1.48	1.70	1.86	2.19	2.92	3.64

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.29	0.23	0.16	0.11	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.36	0.31	0.21	0.14	0.09
10 yr	2.79	2.07	1.69	1.16	0.71	0.47	0.37	0.25	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.60	0.46	0.29	0.20	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.71	0.54	0.33	0.22	0.14
100 yr	5.88	4.36	3.56	2.43	1.48	0.85	0.62	0.37	0.24	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: B17
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

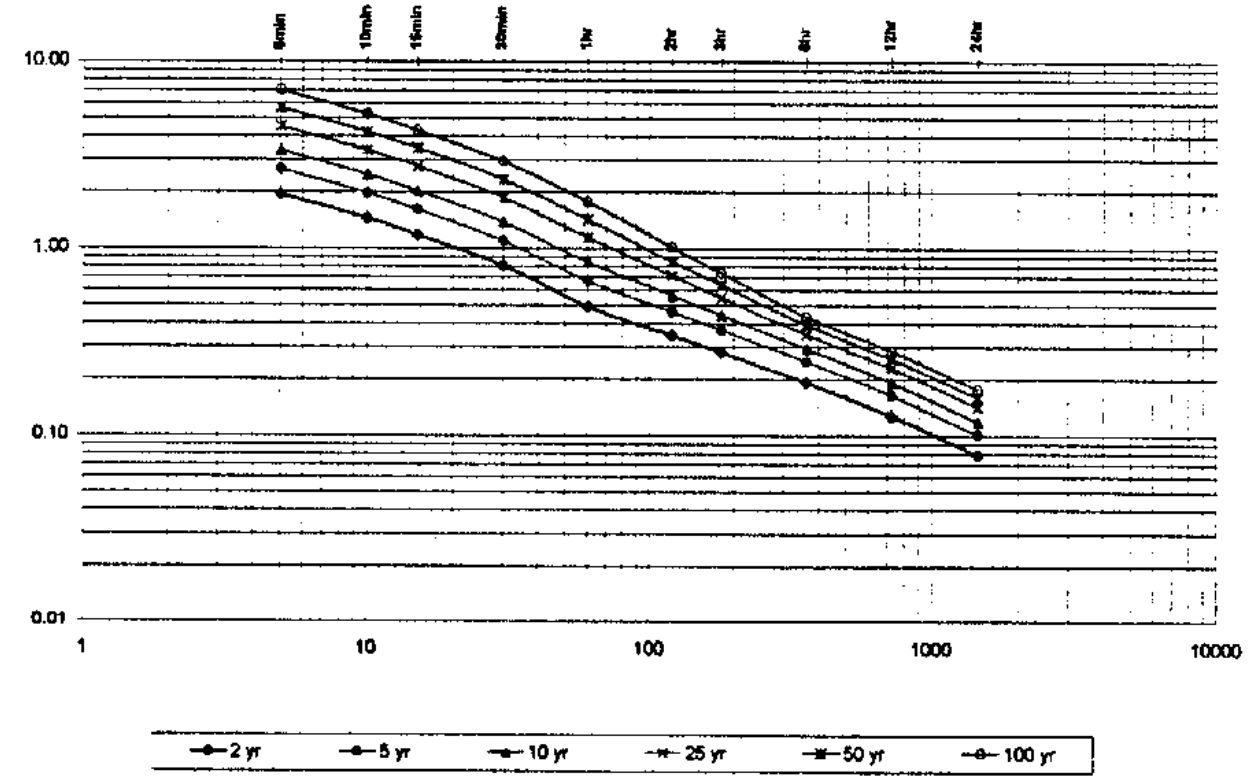
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.49
2 yr- 6hr	1.15
2 yr- 24hr	1.90

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.16	0.24	0.29	0.40	0.49	0.69	0.84	1.15	1.53	1.90
5 yr	0.22	0.33	0.40	0.55	0.67	0.91	1.10	1.50	1.96	2.43
10 yr	0.28	0.41	0.51	0.69	0.84	1.11	1.32	1.76	2.30	2.85
25 yr	0.38	0.56	0.68	0.93	1.14	1.42	1.63	2.08	2.74	3.40
50 yr	0.47	0.70	0.86	1.17	1.43	1.70	1.91	2.35	3.08	3.82
100 yr	0.59	0.87	1.06	1.45	1.77	2.02	2.21	2.60	3.41	4.22

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.94	1.44	1.18	0.80	0.49	0.34	0.28	0.19	0.13	0.09
5 yr	2.64	1.96	1.60	1.09	0.67	0.46	0.37	0.25	0.16	0.10
10 yr	3.34	2.48	2.02	1.38	0.84	0.56	0.44	0.29	0.19	0.12
25 yr	4.50	3.34	2.73	1.86	1.14	0.71	0.54	0.35	0.23	0.14
50 yr	5.65	4.19	3.42	2.34	1.43	0.85	0.64	0.39	0.26	0.16
100 yr	7.02	5.21	4.26	2.91	1.77	1.01	0.74	0.43	0.28	0.18

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

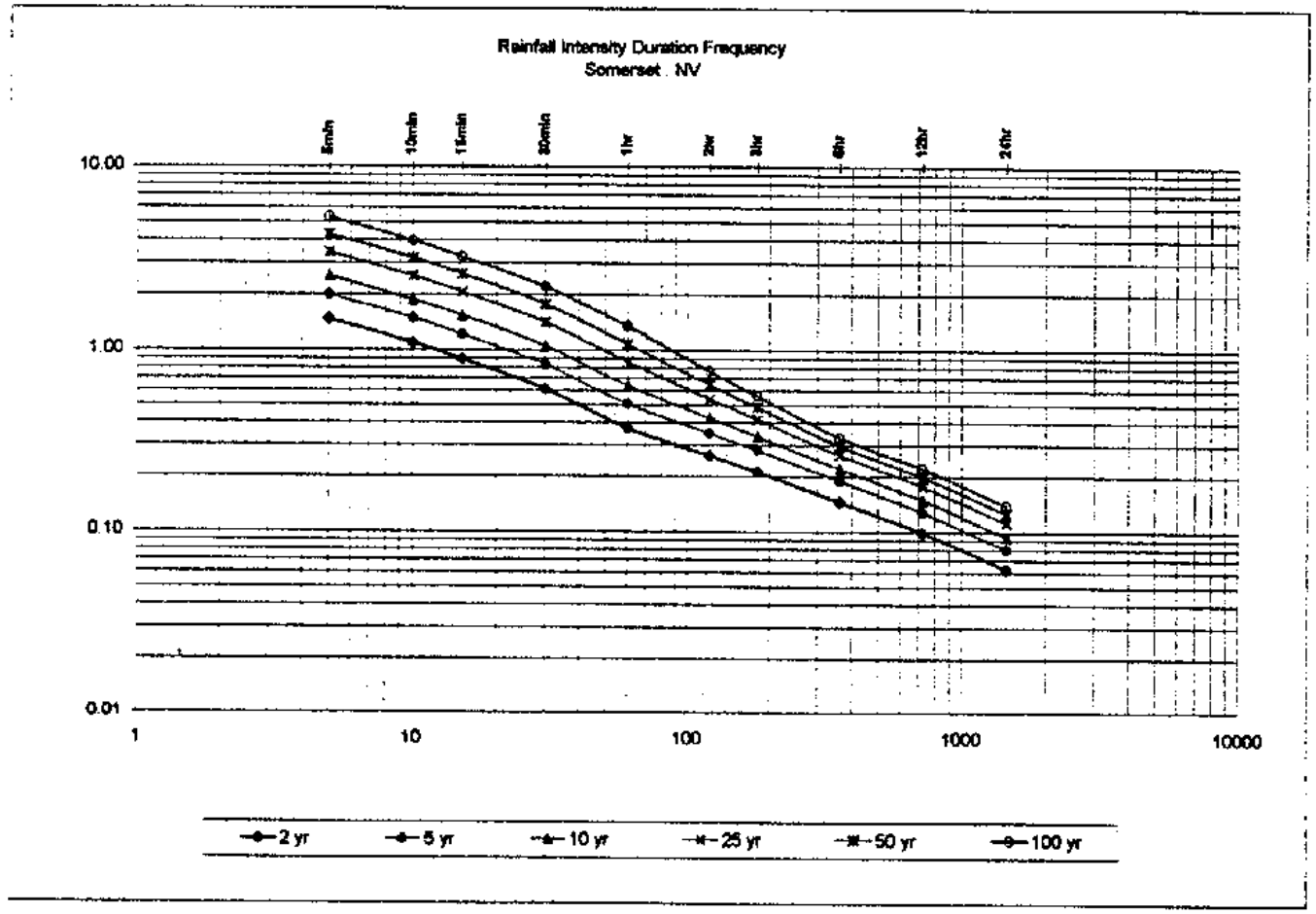
Watershed name: C1
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurrance	Depth (inch)
2 yr-1hr	0.37
2 yr- 6hr	0.87
2 yr- 24hr	1.50

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.12	0.18	0.22	0.30	0.37	0.52	0.63	0.87	1.19	1.50
5 yr	0.17	0.25	0.30	0.41	0.50	0.69	0.83	1.13	1.53	1.92
10 yr	0.21	0.31	0.38	0.52	0.64	0.84	1.00	1.32	1.79	2.25
25 yr	0.28	0.42	0.52	0.70	0.86	1.07	1.24	1.57	2.13	2.69
50 yr	0.36	0.53	0.65	0.88	1.08	1.29	1.44	1.77	2.39	3.02
100 yr	0.44	0.66	0.80	1.10	1.34	1.53	1.67	1.97	2.65	3.33

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.47	1.09	0.88	0.61	0.37	0.26	0.21	0.15	0.10	0.06
5 yr	1.99	1.48	1.21	0.83	0.50	0.35	0.28	0.19	0.13	0.08
10 yr	2.52	1.87	1.53	1.04	0.64	0.42	0.33	0.22	0.15	0.09
25 yr	3.40	2.52	2.06	1.41	0.86	0.54	0.41	0.26	0.18	0.11
50 yr	4.26	3.17	2.58	1.77	1.08	0.64	0.48	0.30	0.20	0.13
100 yr	5.30	3.94	3.21	2.20	1.34	0.78	0.56	0.33	0.22	0.14



WRC NEVADA, NV

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

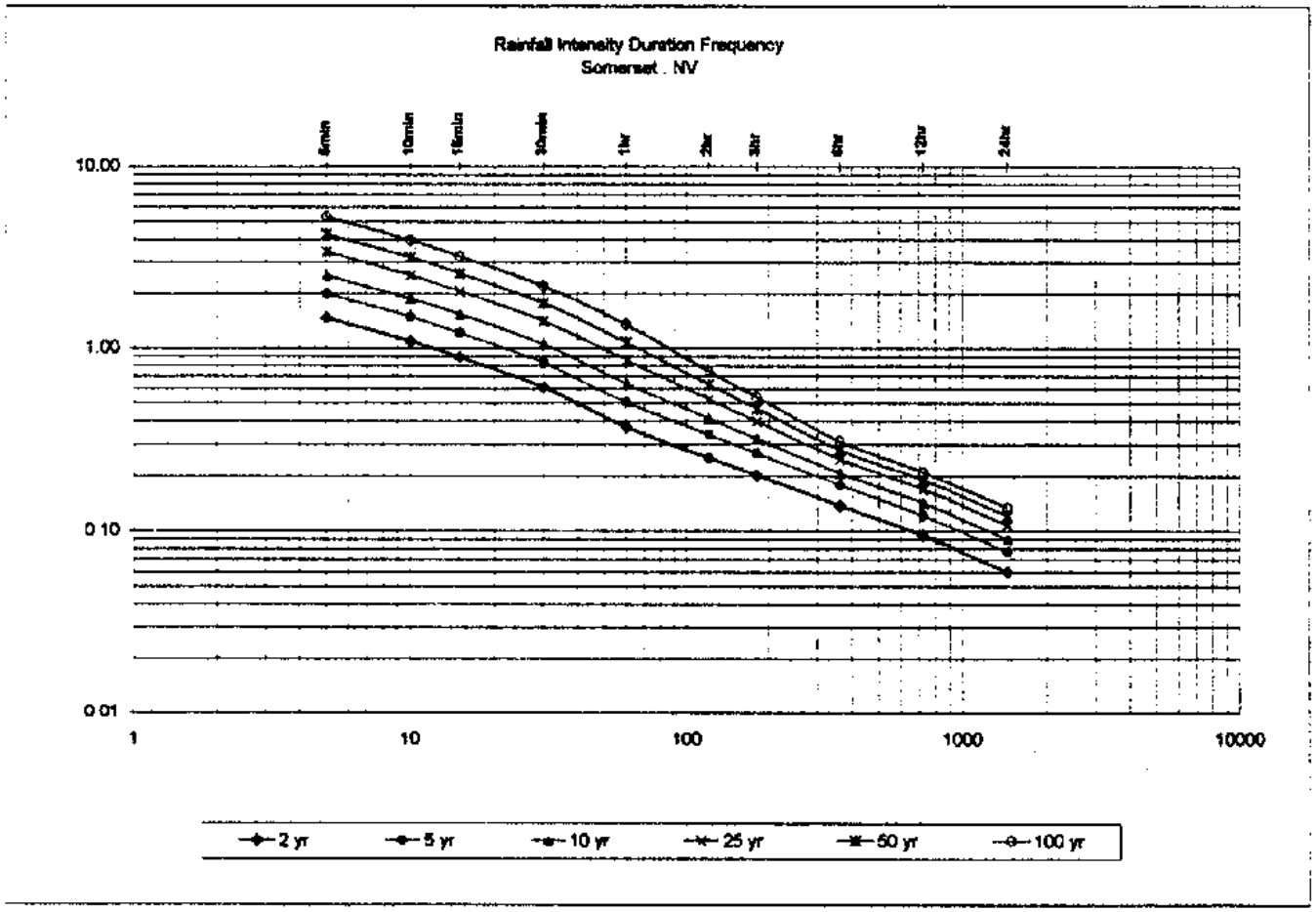
Watershed name:	C2
Project:	Somerset
WRC Job No.	3011
Date:	1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.37
2 yr- 6hr	0.82
2 yr- 24hr	1.44

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.12	0.18	0.22	0.30	0.37	0.50	0.61	0.82	1.13	1.44
5 yr	0.17	0.25	0.30	0.41	0.50	0.67	0.80	1.07	1.45	1.84
10 yr	0.21	0.31	0.38	0.52	0.64	0.82	0.96	1.25	1.70	2.16
25 yr	0.28	0.42	0.52	0.70	0.86	1.05	1.19	1.48	2.03	2.58
50 yr	0.36	0.53	0.65	0.88	1.08	1.25	1.39	1.67	2.28	2.89
100 yr	0.44	0.66	0.80	1.10	1.34	1.49	1.61	1.85	2.53	3.20

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.47	1.09	0.89	0.61	0.37	0.25	0.20	0.14	0.09	0.06
5 yr	1.99	1.48	1.21	0.83	0.50	0.34	0.27	0.18	0.12	0.08
10 yr	2.52	1.87	1.53	1.04	0.64	0.41	0.32	0.21	0.14	0.09
25 yr	3.40	2.52	2.06	1.41	0.86	0.52	0.40	0.25	0.17	0.11
50 yr	4.26	3.17	2.58	1.77	1.08	0.63	0.48	0.28	0.19	0.12
100 yr	5.30	3.94	3.21	2.20	1.34	0.75	0.54	0.31	0.21	0.13



WRC NEVADA, Inc

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: C3
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

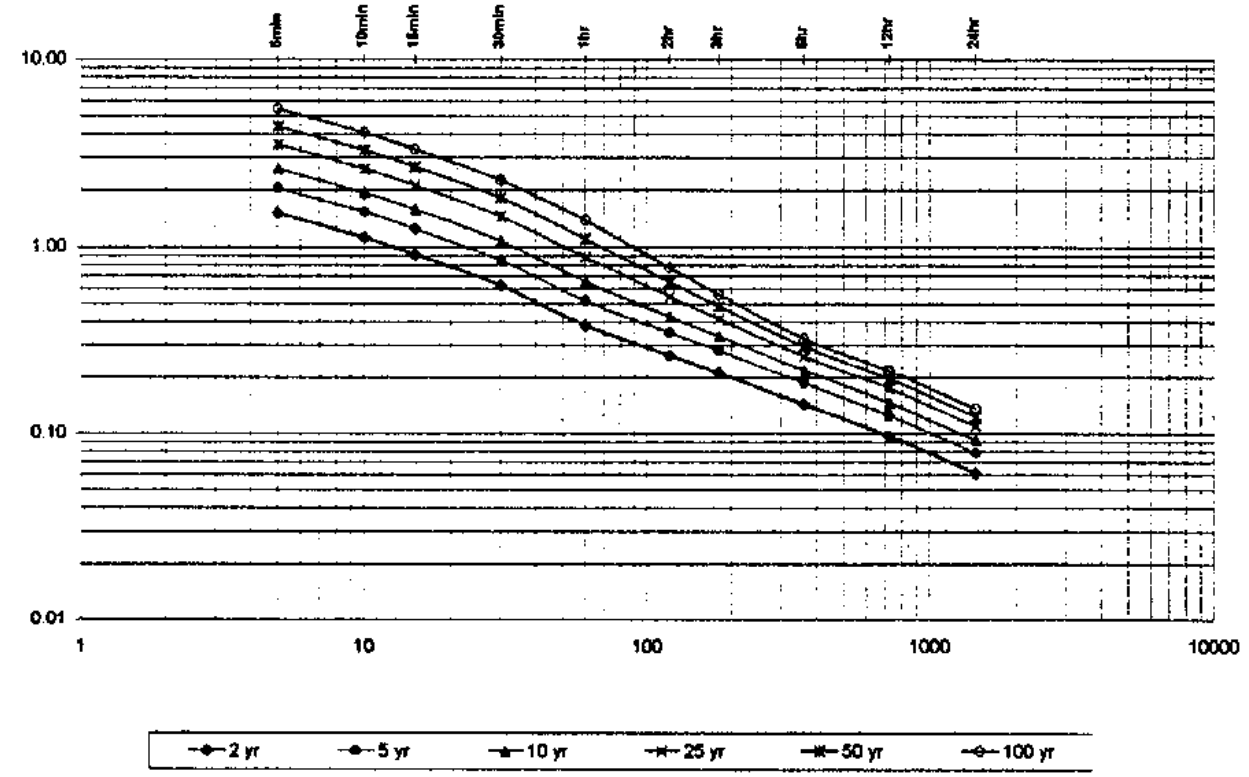
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.38
2 yr- 6hr	0.86
2 yr- 24hr	1.47

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.31	0.38	0.62	0.63	0.86	1.17	1.47
5 yr	0.17	0.25	0.31	0.42	0.52	0.70	0.83	1.12	1.50	1.88
10 yr	0.22	0.32	0.39	0.54	0.65	0.85	1.00	1.31	1.76	2.21
25 yr	0.29	0.43	0.53	0.72	0.88	1.08	1.24	1.56	2.09	2.63
50 yr	0.36	0.54	0.66	0.91	1.11	1.30	1.45	1.75	2.35	2.95
100 yr	0.45	0.67	0.83	1.13	1.38	1.55	1.67	1.94	2.60	3.26

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.50	1.12	0.91	0.62	0.38	0.26	0.21	0.14	0.10	0.06
5 yr	2.05	1.52	1.24	0.85	0.52	0.35	0.28	0.19	0.12	0.08
10 yr	2.59	1.92	1.57	1.07	0.65	0.42	0.33	0.22	0.15	0.09
25 yr	3.49	2.59	2.12	1.45	0.88	0.54	0.41	0.26	0.17	0.11
50 yr	4.38	3.25	2.65	1.81	1.11	0.65	0.48	0.29	0.20	0.12
100 yr	5.45	4.04	3.30	2.26	1.38	0.77	0.56	0.32	0.22	0.14

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC.

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: C4
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

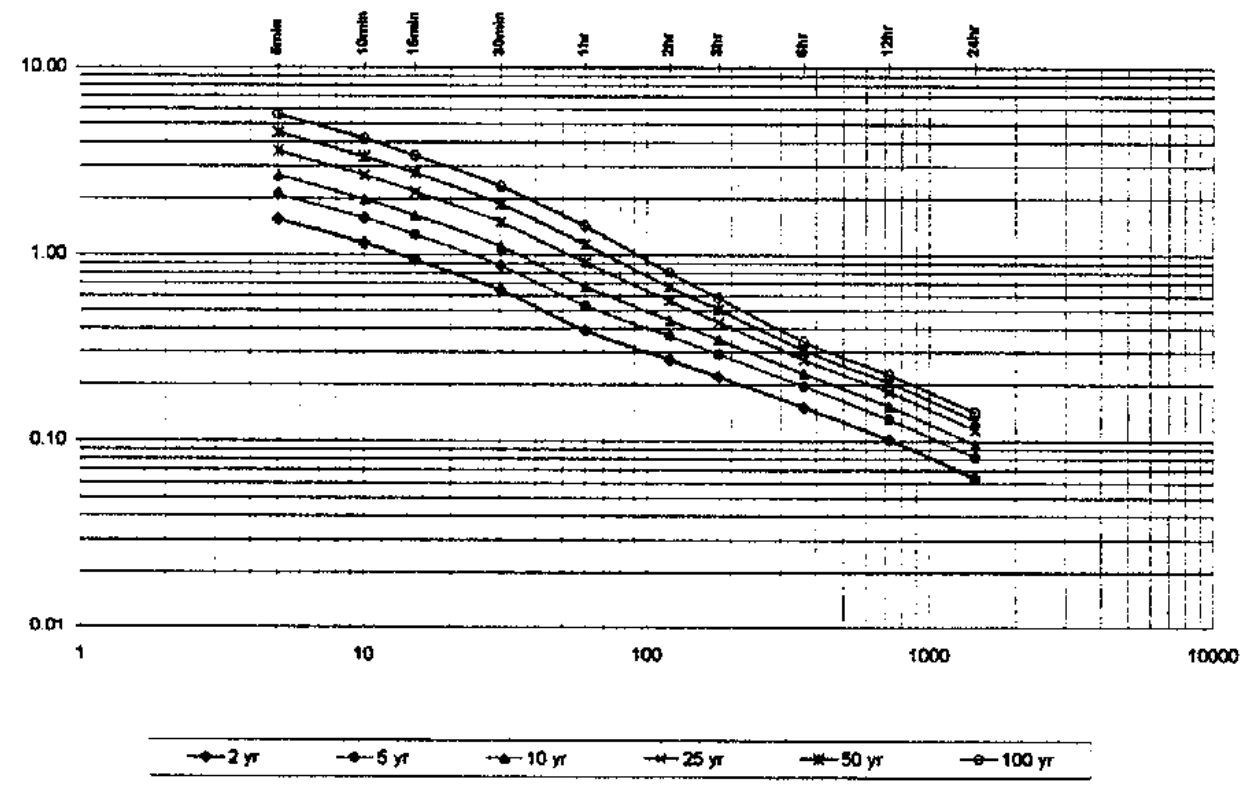
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.39
2 yr- 6hr	0.90
2 yr- 24hr	1.53

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.32	0.39	0.54	0.66	0.90	1.22	1.53
5 yr	0.18	0.26	0.32	0.43	0.53	0.72	0.87	1.17	1.56	1.96
10 yr	0.22	0.33	0.40	0.55	0.67	0.88	1.04	1.37	1.83	2.30
25 yr	0.30	0.44	0.54	0.74	0.90	1.12	1.29	1.63	2.18	2.74
50 yr	0.37	0.56	0.68	0.93	1.13	1.34	1.50	1.84	2.46	3.08
100 yr	0.47	0.69	0.85	1.16	1.41	1.60	1.74	2.03	2.72	3.40

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.54	1.15	0.94	0.64	0.39	0.27	0.22	0.15	0.10	0.06
5 yr	2.10	1.56	1.27	0.87	0.53	0.36	0.29	0.20	0.13	0.08
10 yr	2.66	1.97	1.61	1.10	0.67	0.44	0.35	0.23	0.15	0.10
25 yr	3.58	2.66	2.17	1.48	0.90	0.56	0.43	0.27	0.18	0.11
50 yr	4.49	3.34	2.72	1.86	1.13	0.67	0.50	0.31	0.20	0.13
100 yr	5.59	4.15	3.39	2.32	1.41	0.80	0.58	0.34	0.23	0.14

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

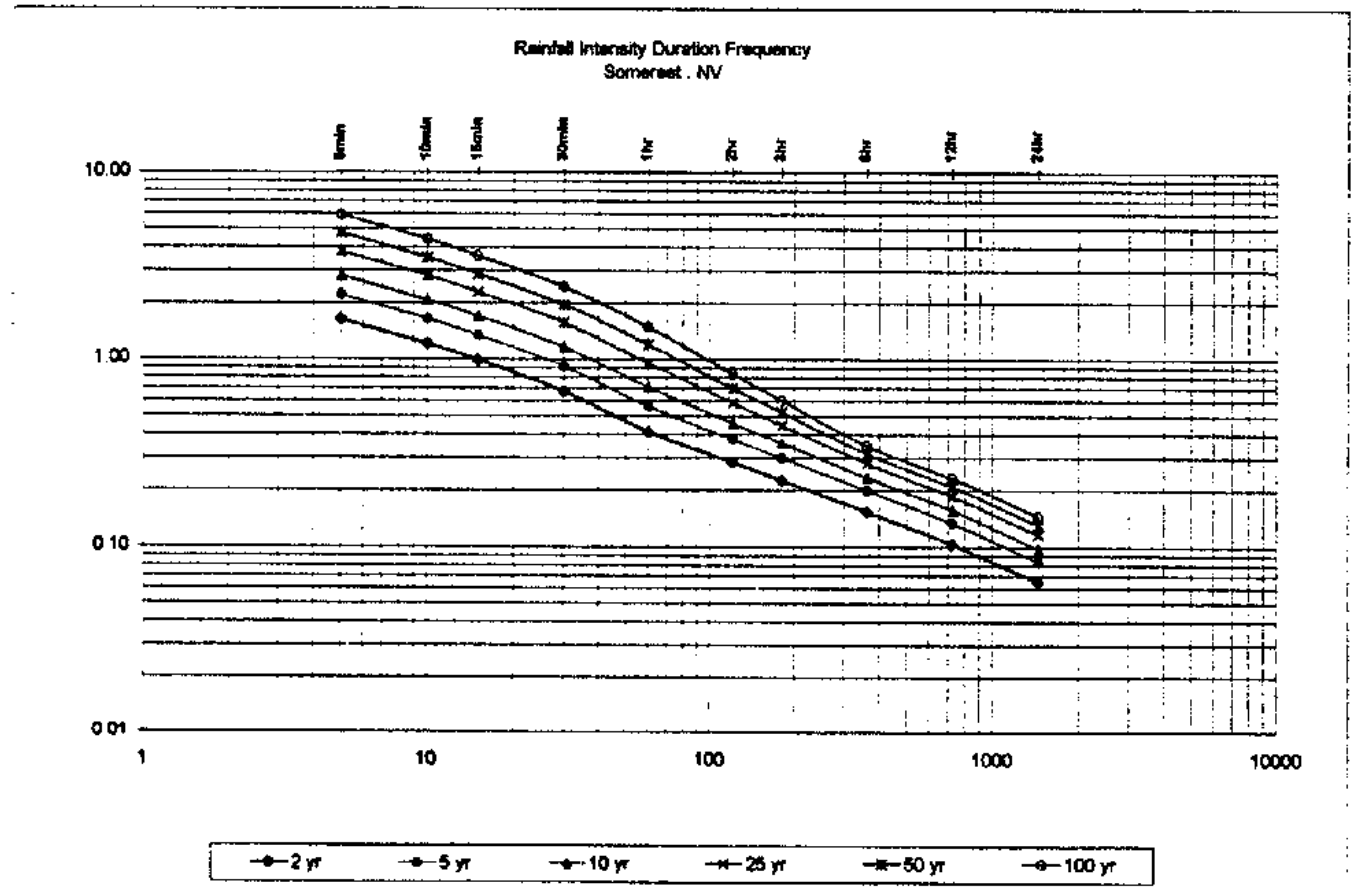
Watershed name: C5
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.92
2 yr- 24hr	1.56

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.20	0.25	0.34	0.41	0.56	0.68	0.92	1.24	1.56
5 yr	0.18	0.27	0.33	0.46	0.56	0.75	0.89	1.20	1.60	2.00
10 yr	0.23	0.36	0.42	0.58	0.71	0.91	1.07	1.40	1.87	2.34
25 yr	0.31	0.47	0.57	0.78	0.95	1.16	1.33	1.87	2.23	2.79
50 yr	0.39	0.58	0.72	0.98	1.19	1.40	1.55	1.88	2.51	3.14
100 yr	0.49	0.73	0.89	1.22	1.48	1.66	1.80	2.08	2.77	3.46

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.28	0.23	0.15	0.10	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.37	0.30	0.20	0.13	0.08
10 yr	2.79	2.07	1.69	1.16	0.71	0.46	0.36	0.23	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.58	0.44	0.28	0.19	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.70	0.52	0.31	0.21	0.13
100 yr	5.88	4.36	3.56	2.43	1.48	0.83	0.60	0.35	0.23	0.14



WRC NEVADA

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

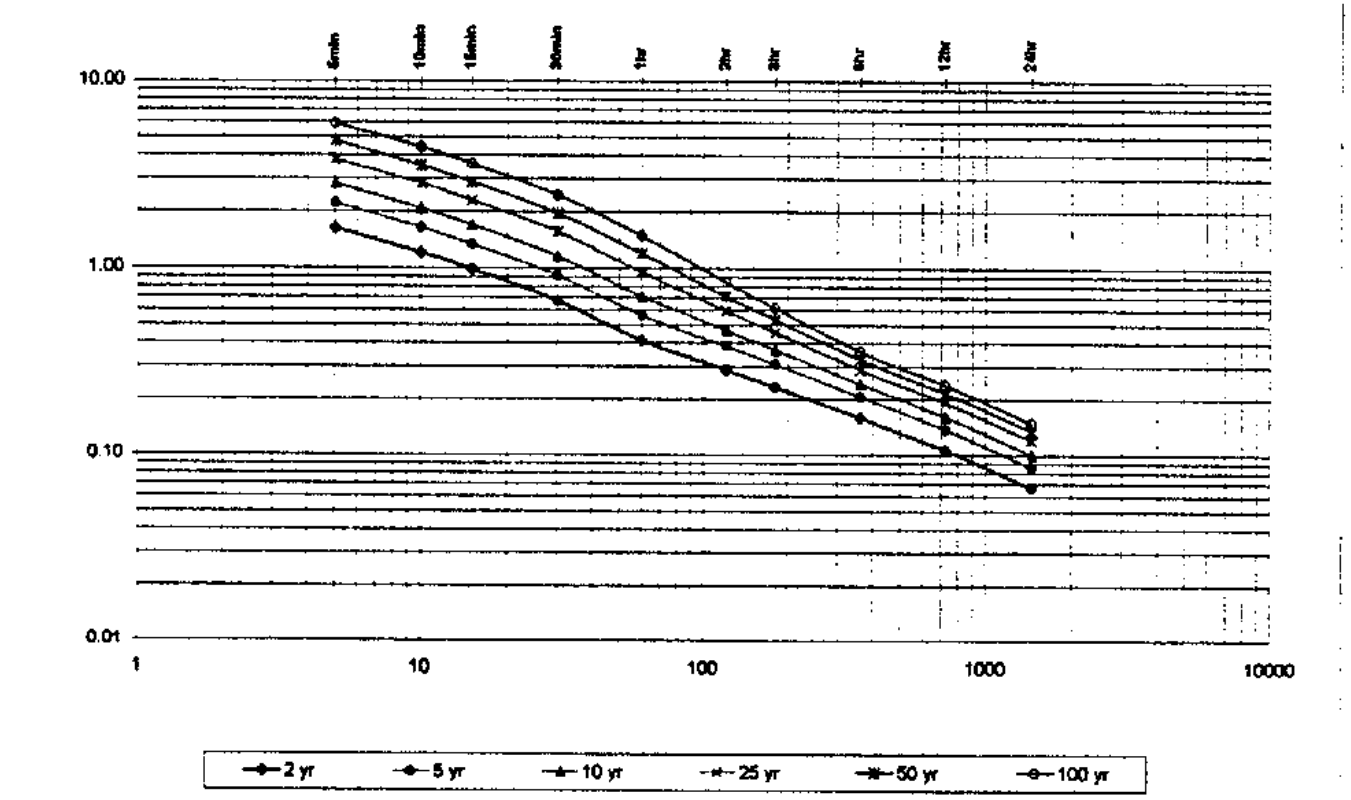
Watershed name: C8
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.95
2 yr- 24hr	1.60

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.14	0.20	0.25	0.34	0.41	0.57	0.69	0.95	1.28	1.60
5 yr	0.18	0.27	0.33	0.46	0.56	0.76	0.91	1.24	1.64	2.05
10 yr	0.23	0.35	0.42	0.58	0.71	0.93	1.09	1.44	1.92	2.40
25 yr	0.31	0.47	0.57	0.78	0.95	1.18	1.36	1.72	2.29	2.86
50 yr	0.39	0.58	0.72	0.98	1.19	1.42	1.58	1.94	2.58	3.22
100 yr	0.49	0.73	0.89	1.22	1.48	1.88	1.83	2.15	2.85	3.55

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.96	0.67	0.41	0.29	0.23	0.16	0.11	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.38	0.30	0.21	0.14	0.09
10 yr	2.79	2.07	1.69	1.16	0.71	0.46	0.36	0.24	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.59	0.45	0.29	0.19	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.71	0.53	0.32	0.21	0.13
100 yr	5.88	4.36	3.56	2.43	1.48	0.84	0.61	0.36	0.24	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: C7
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

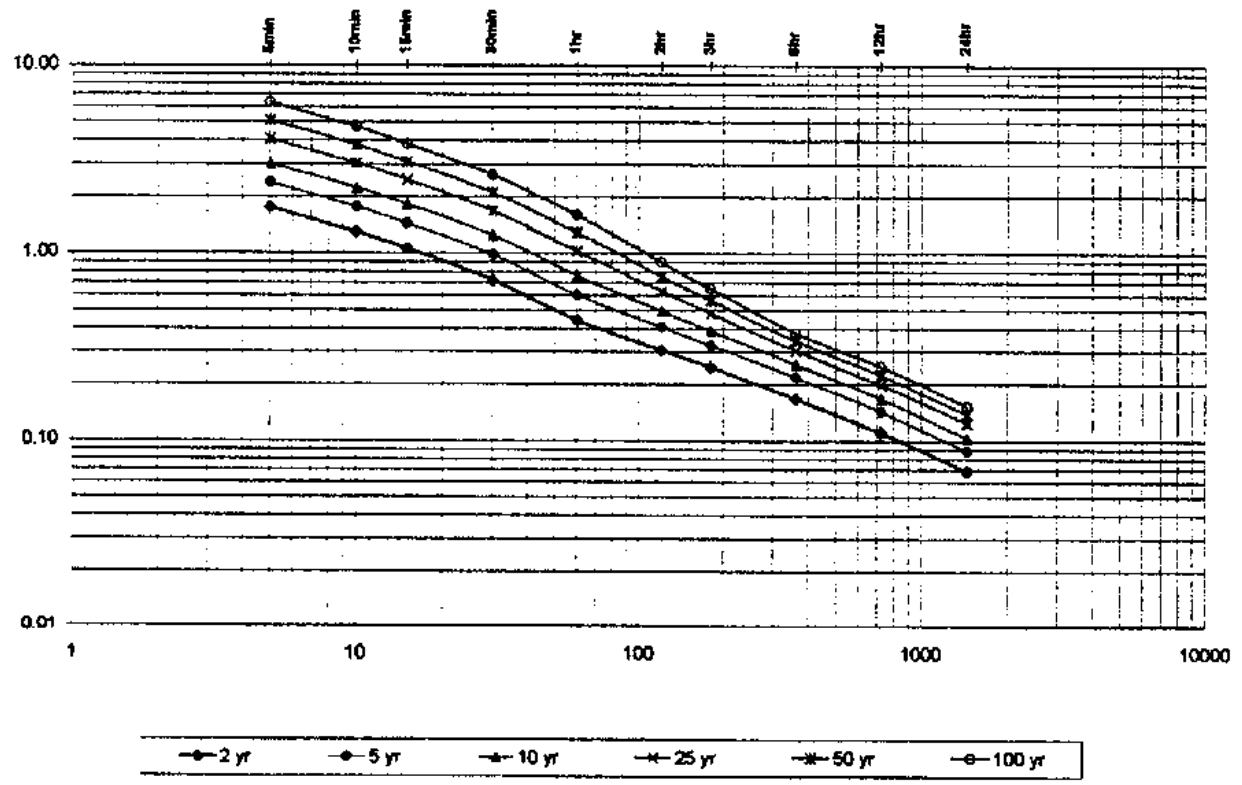
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.44
2 yr- 6hr	1.00
2 yr- 24hr	1.65

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.26	0.36	0.44	0.61	0.73	1.00	1.33	1.65
5 yr	0.20	0.29	0.36	0.49	0.60	0.81	0.97	1.30	1.71	2.11
10 yr	0.25	0.37	0.45	0.62	0.76	0.98	1.16	1.52	2.00	2.48
25 yr	0.34	0.50	0.61	0.84	1.02	1.26	1.44	1.81	2.36	2.95
50 yr	0.42	0.63	0.77	1.05	1.26	1.51	1.68	2.04	2.68	3.32
100 yr	0.53	0.78	0.96	1.31	1.59	1.79	1.94	2.26	2.96	3.66

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.74	1.29	1.06	0.72	0.44	0.30	0.24	0.17	0.11	0.07
5 yr	2.37	1.76	1.44	0.96	0.60	0.40	0.32	0.22	0.14	0.09
10 yr	3.00	2.22	1.82	1.24	0.76	0.49	0.39	0.25	0.17	0.10
25 yr	4.04	3.00	2.45	1.67	1.02	0.63	0.48	0.30	0.20	0.12
50 yr	5.07	3.76	3.07	2.10	1.28	0.75	0.56	0.34	0.22	0.14
100 yr	6.31	4.68	3.82	2.61	1.59	0.90	0.65	0.38	0.25	0.15

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: C8
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

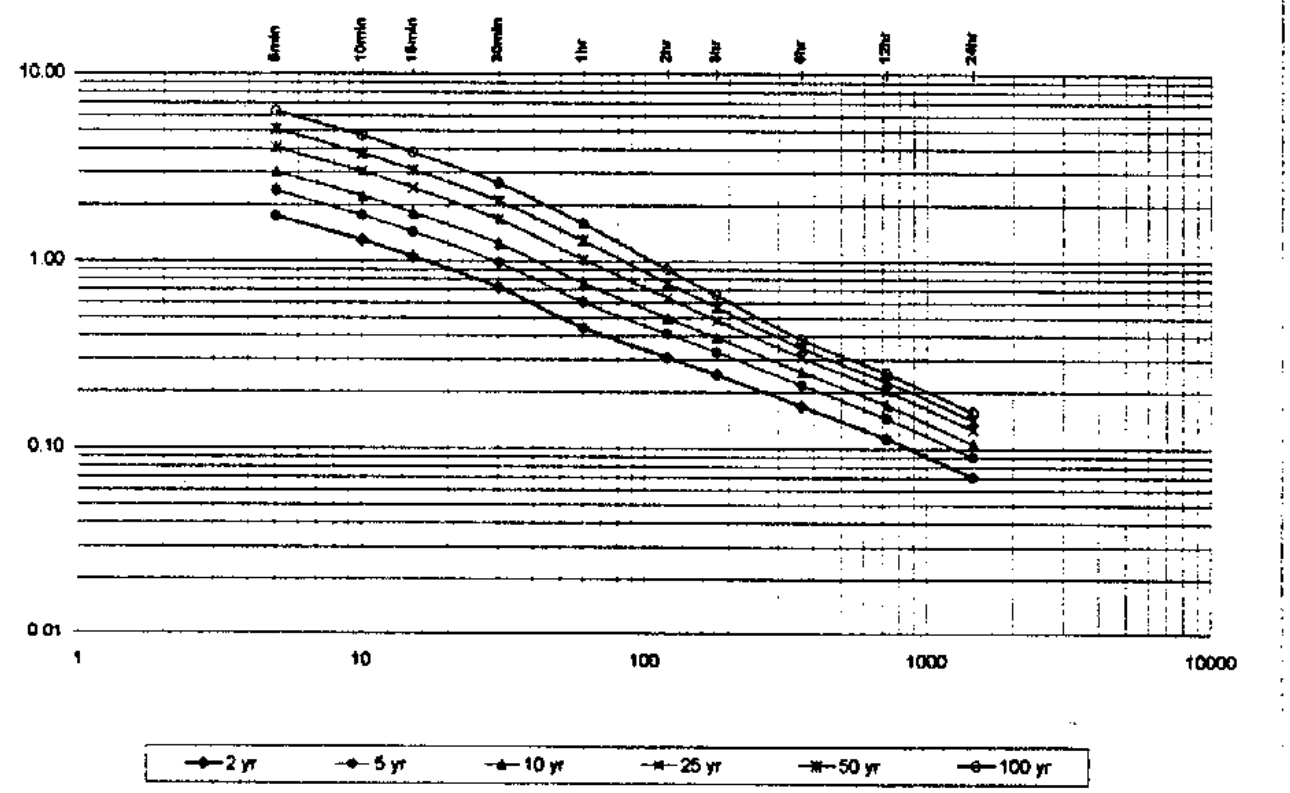
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.44
2 yr- 6hr	1.01
2 yr- 24hr	1.69

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.15	0.22	0.26	0.38	0.44	0.61	0.74	1.01	1.35	1.69
5 yr	0.20	0.29	0.36	0.49	0.60	0.81	0.97	1.31	1.74	2.16
10 yr	0.25	0.37	0.45	0.62	0.76	0.99	1.17	1.54	2.04	2.54
25 yr	0.34	0.50	0.61	0.84	1.02	1.28	1.45	1.83	2.43	3.03
50 yr	0.42	0.63	0.77	1.05	1.28	1.51	1.69	2.06	2.73	3.40
100 yr	0.53	0.78	0.96	1.31	1.59	1.80	1.96	2.28	3.02	3.75

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.74	1.29	1.06	0.72	0.44	0.31	0.25	0.17	0.11	0.07
5 yr	2.37	1.76	1.44	0.98	0.60	0.41	0.32	0.22	0.14	0.09
10 yr	3.00	2.22	1.82	1.24	0.76	0.49	0.39	0.26	0.17	0.11
25 yr	4.04	3.00	2.45	1.67	1.02	0.63	0.48	0.30	0.20	0.13
50 yr	5.07	3.76	3.07	2.10	1.28	0.76	0.58	0.34	0.23	0.14
100 yr	6.31	4.68	3.82	2.61	1.59	0.90	0.65	0.38	0.25	0.16

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

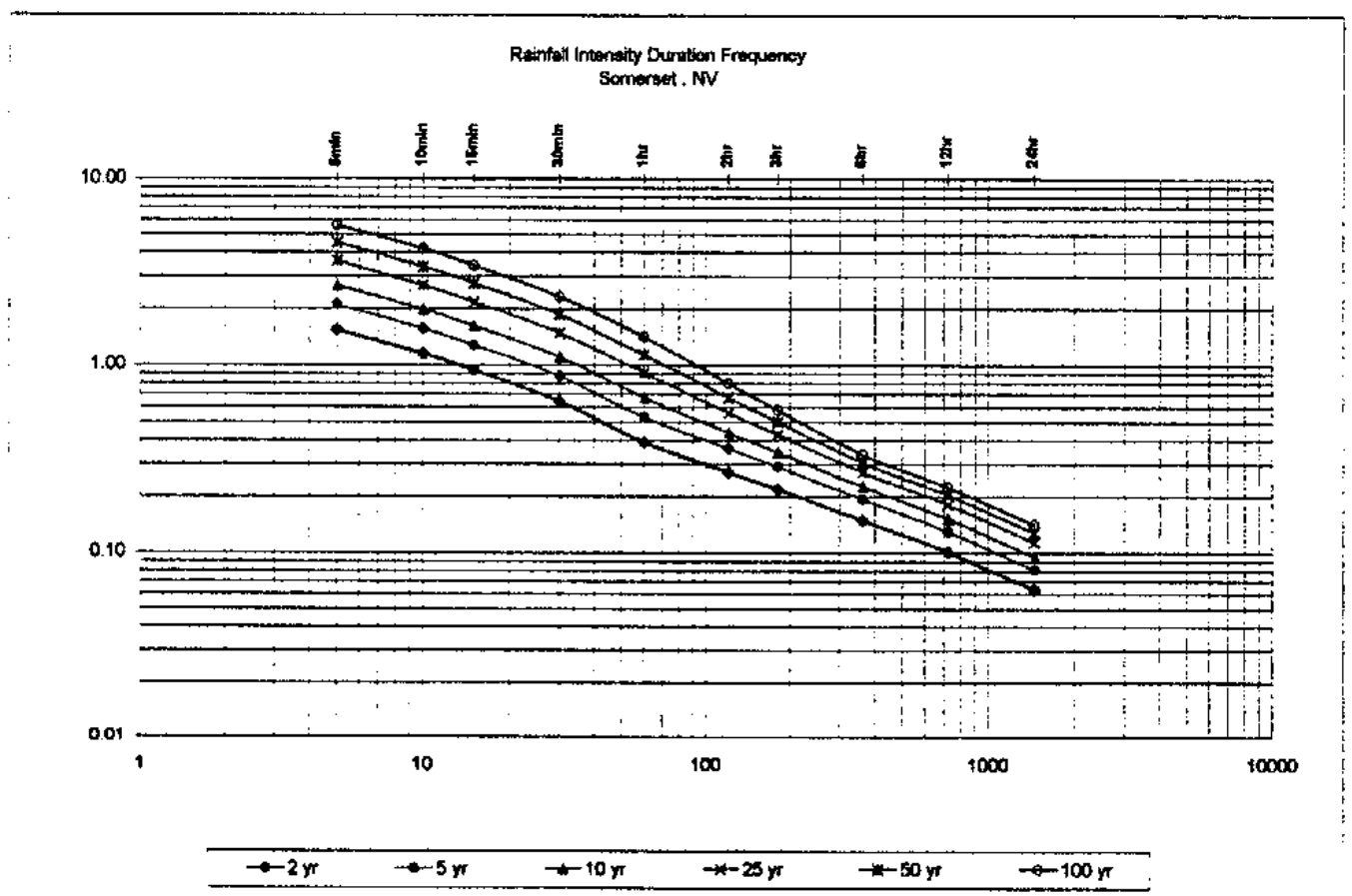
Watershed name: C9
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.39
2 yr- 6hr	0.89
2 yr- 24hr	1.52

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.13	0.19	0.23	0.32	0.39	0.54	0.65	0.89	1.21	1.52
5 yr	0.18	0.26	0.32	0.43	0.53	0.72	0.86	1.16	1.55	1.95
10 yr	0.22	0.33	0.40	0.55	0.67	0.87	1.03	1.35	1.82	2.29
25 yr	0.30	0.44	0.54	0.74	0.90	1.12	1.28	1.61	2.17	2.72
50 yr	0.37	0.56	0.66	0.93	1.13	1.34	1.49	1.82	2.44	3.06
100 yr	0.47	0.69	0.85	1.16	1.41	1.59	1.73	2.01	2.69	3.37

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.54	1.15	0.94	0.64	0.39	0.27	0.22	0.15	0.10	0.06
5 yr	2.10	1.56	1.27	0.87	0.53	0.36	0.29	0.19	0.13	0.08
10 yr	2.66	1.97	1.61	1.10	0.67	0.44	0.34	0.23	0.15	0.10
25 yr	3.56	2.68	2.17	1.48	0.90	0.56	0.43	0.27	0.18	0.11
50 yr	4.49	3.34	2.72	1.86	1.13	0.67	0.50	0.30	0.20	0.13
100 yr	5.59	4.15	3.39	2.32	1.41	0.80	0.58	0.34	0.22	0.14



WFC NEVADA, inc

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: C10
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

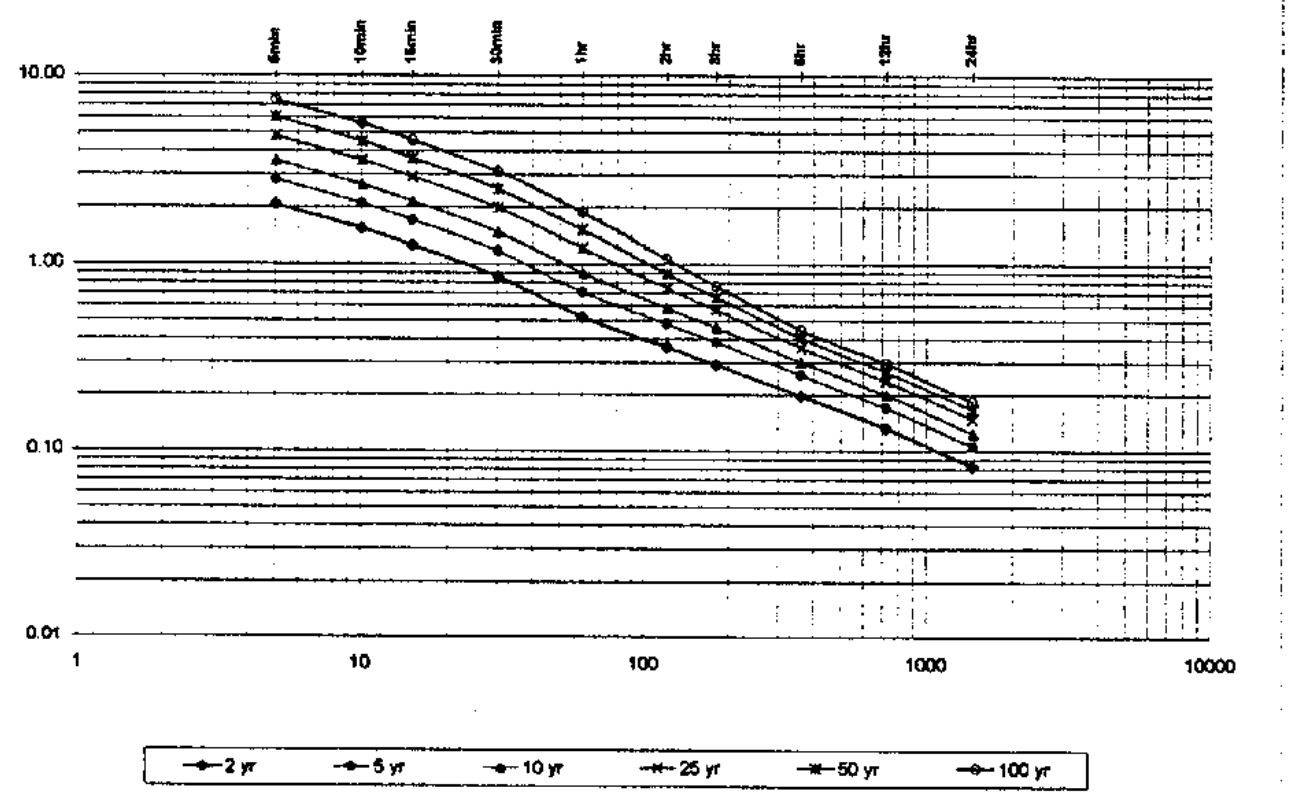
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.52
2 yr- 6hr	1.18
2 yr- 24hr	1.98

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.17	0.25	0.31	0.43	0.52	0.72	0.87	1.18	1.58	1.98
5 yr	0.23	0.35	0.42	0.58	0.71	0.95	1.14	1.53	2.03	2.53
10 yr	0.30	0.44	0.54	0.73	0.89	1.18	1.37	1.79	2.38	2.97
25 yr	0.40	0.59	0.72	0.98	1.21	1.48	1.70	2.14	2.84	3.54
50 yr	0.50	0.74	0.91	1.24	1.51	1.78	1.66	2.41	3.19	3.98
100 yr	0.62	0.92	1.13	1.54	1.88	2.12	2.29	2.67	3.53	4.40

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	2.08	1.53	1.25	0.85	0.52	0.36	0.29	0.20	0.13	0.08
5 yr	2.80	2.08	1.70	1.16	0.71	0.48	0.38	0.26	0.17	0.11
10 yr	3.54	2.63	2.15	1.47	0.89	0.58	0.46	0.30	0.20	0.12
25 yr	4.76	3.55	2.90	1.96	1.21	0.74	0.57	0.36	0.24	0.15
50 yr	5.99	4.45	3.63	2.48	1.51	0.89	0.68	0.40	0.27	0.17
100 yr	7.45	5.53	4.52	3.09	1.88	1.06	0.76	0.44	0.29	0.18

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, Inc

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

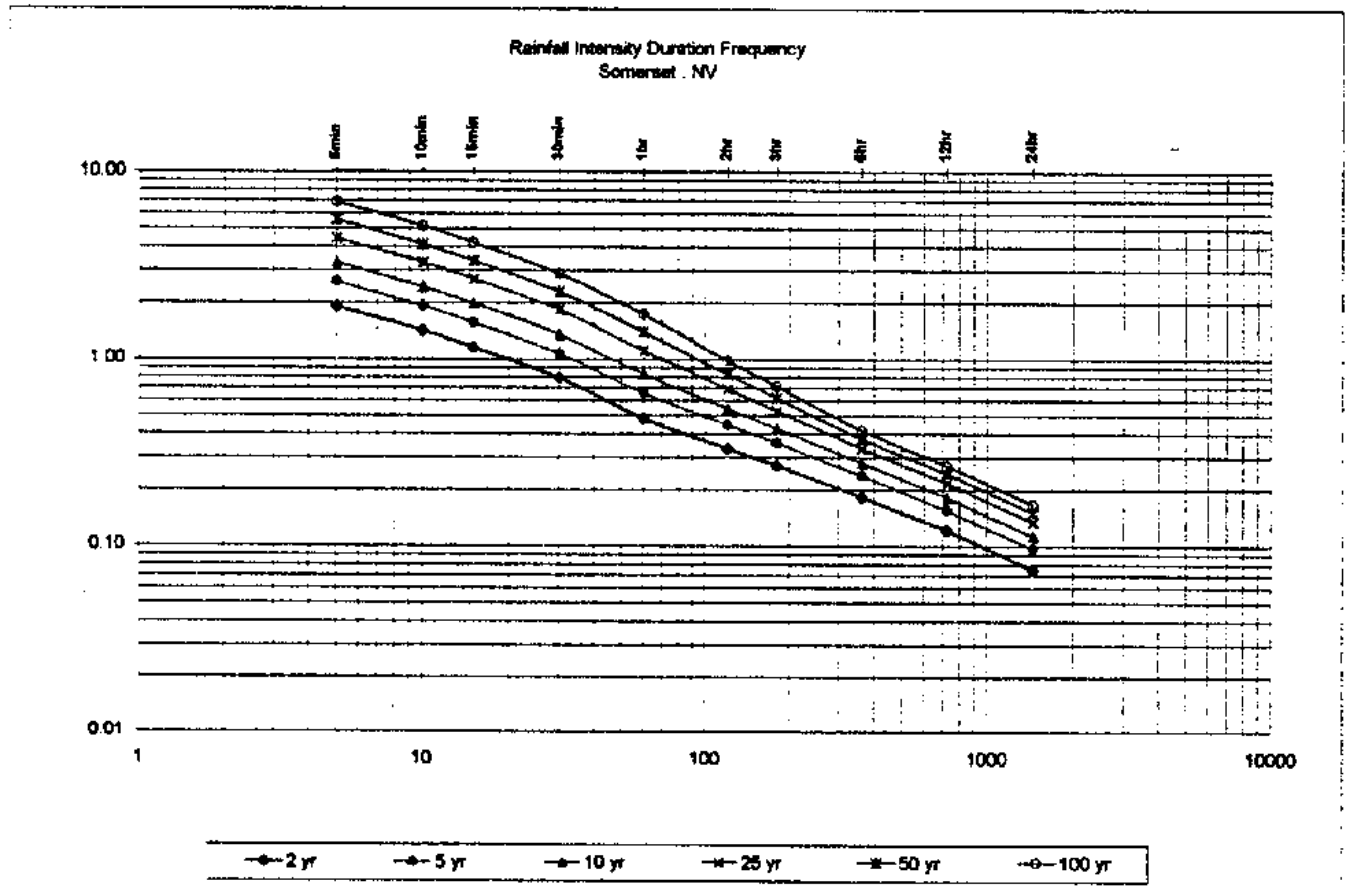
Watershed name: C11
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.48
2 yr- 6hr	1.10
2 yr- 24hr	1.80

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.16	0.24	0.29	0.39	0.48	0.67	0.81	1.10	1.45	1.80
5 yr	0.22	0.32	0.39	0.54	0.65	0.89	1.06	1.43	1.87	2.30
10 yr	0.27	0.40	0.50	0.68	0.83	1.06	1.27	1.67	2.19	2.70
25 yr	0.37	0.55	0.67	0.91	1.11	1.39	1.58	1.99	2.61	3.22
50 yr	0.46	0.68	0.84	1.15	1.40	1.65	1.84	2.24	2.93	3.62
100 yr	0.57	0.85	1.04	1.42	1.74	1.96	2.13	2.49	3.24	4.00

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.90	1.41	1.15	0.79	0.48	0.33	0.27	0.18	0.12	0.08
5 yr	2.59	1.92	1.57	1.07	0.65	0.44	0.35	0.24	0.16	0.10
10 yr	3.27	2.43	1.98	1.35	0.83	0.54	0.42	0.28	0.18	0.11
25 yr	4.41	3.27	2.67	1.83	1.11	0.69	0.53	0.33	0.22	0.13
50 yr	5.53	4.11	3.36	2.29	1.40	0.83	0.61	0.37	0.24	0.15
100 yr	6.88	5.11	4.17	2.85	1.74	0.98	0.71	0.41	0.27	0.17



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: D1
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

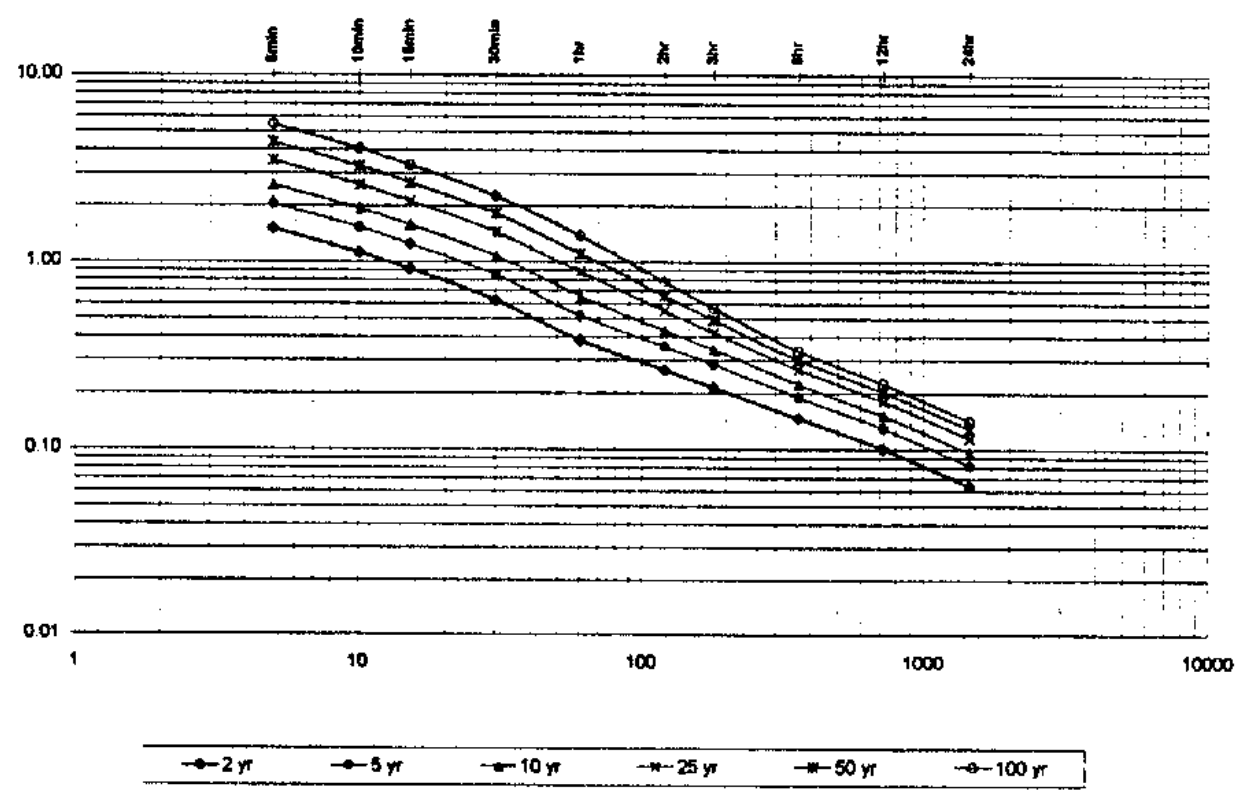
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.38
2 yr- 6hr	0.88
2 yr- 24hr	1.53

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.31	0.38	0.53	0.64	0.88	1.21	1.53
5 yr	0.17	0.25	0.31	0.42	0.52	0.70	0.85	1.14	1.55	1.96
10 yr	0.22	0.32	0.39	0.54	0.65	0.86	1.01	1.34	1.82	2.30
25 yr	0.29	0.43	0.53	0.72	0.88	1.09	1.26	1.59	2.17	2.74
50 yr	0.36	0.54	0.66	0.91	1.11	1.31	1.47	1.80	2.44	3.08
100 yr	0.45	0.67	0.83	1.13	1.38	1.56	1.70	1.99	2.69	3.40

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.50	1.12	0.91	0.62	0.38	0.26	0.21	0.15	0.10	0.06
5 yr	2.05	1.52	1.24	0.85	0.52	0.35	0.28	0.19	0.13	0.08
10 yr	2.59	1.92	1.57	1.07	0.65	0.43	0.34	0.22	0.15	0.10
25 yr	3.49	2.58	2.12	1.45	0.88	0.56	0.42	0.27	0.18	0.11
50 yr	4.38	3.25	2.65	1.81	1.11	0.68	0.49	0.30	0.20	0.13
100 yr	5.45	4.04	3.30	2.26	1.38	0.78	0.57	0.33	0.22	0.14

Rainfall Intensity Duration Frequency
Somerset , NV



WRC NEVADA, NV

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

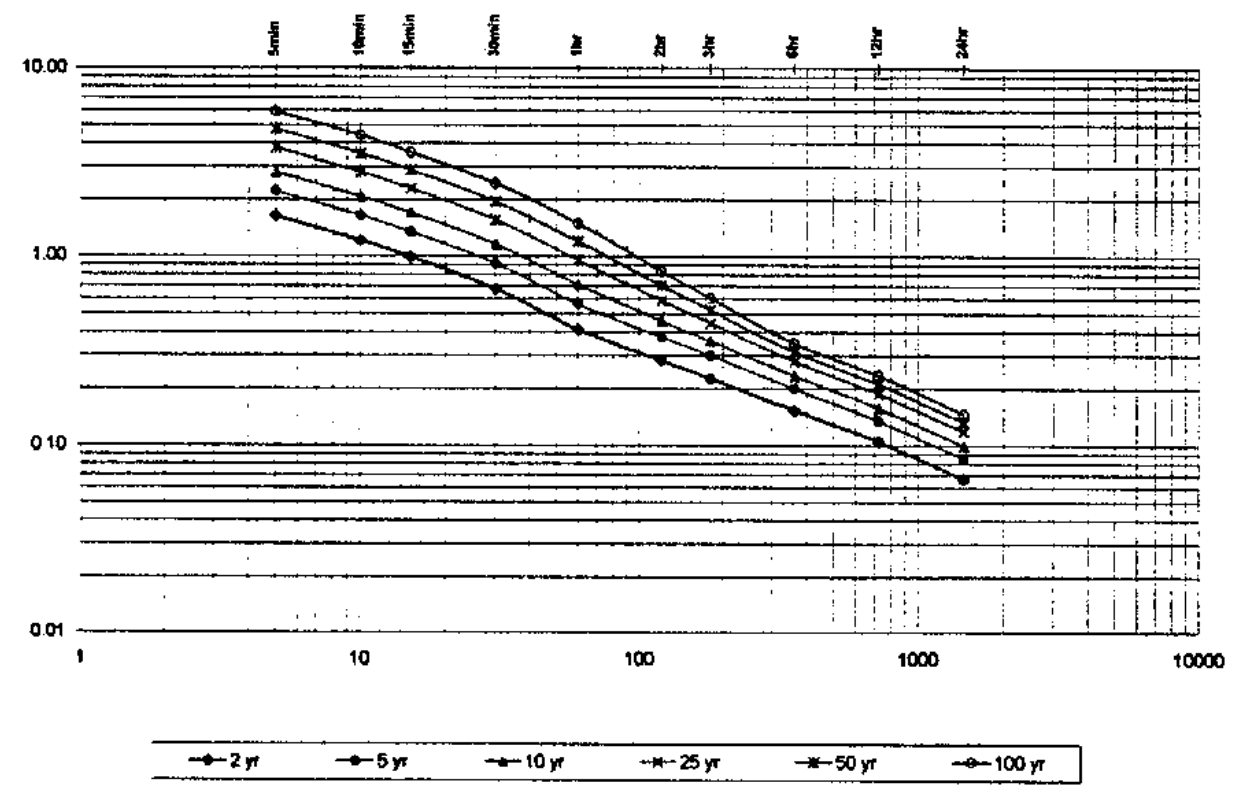
Watershed name: E1
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.41
2 yr- 6hr	0.92
2 yr- 24hr	1.59

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.20	0.25	0.34	0.41	0.56	0.68	0.92	1.26	1.59
5 yr	0.18	0.27	0.33	0.46	0.56	0.75	0.89	1.20	1.62	2.04
10 yr	0.23	0.35	0.42	0.58	0.71	0.91	1.07	1.40	1.89	2.39
25 yr	0.31	0.47	0.57	0.78	0.95	1.16	1.33	1.67	2.26	2.86
50 yr	0.39	0.58	0.72	0.98	1.19	1.40	1.55	1.86	2.54	3.20
100 yr	0.49	0.73	0.89	1.22	1.48	1.66	1.80	2.08	2.80	3.53

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.62	1.21	0.98	0.67	0.41	0.28	0.23	0.15	0.10	0.07
5 yr	2.21	1.64	1.34	0.91	0.56	0.37	0.30	0.20	0.13	0.08
10 yr	2.79	2.07	1.69	1.16	0.71	0.46	0.36	0.23	0.16	0.10
25 yr	3.77	2.80	2.28	1.56	0.95	0.58	0.44	0.28	0.19	0.12
50 yr	4.72	3.51	2.86	1.96	1.19	0.70	0.52	0.31	0.21	0.13
100 yr	5.88	4.36	3.56	2.45	1.48	0.83	0.60	0.35	0.23	0.15



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

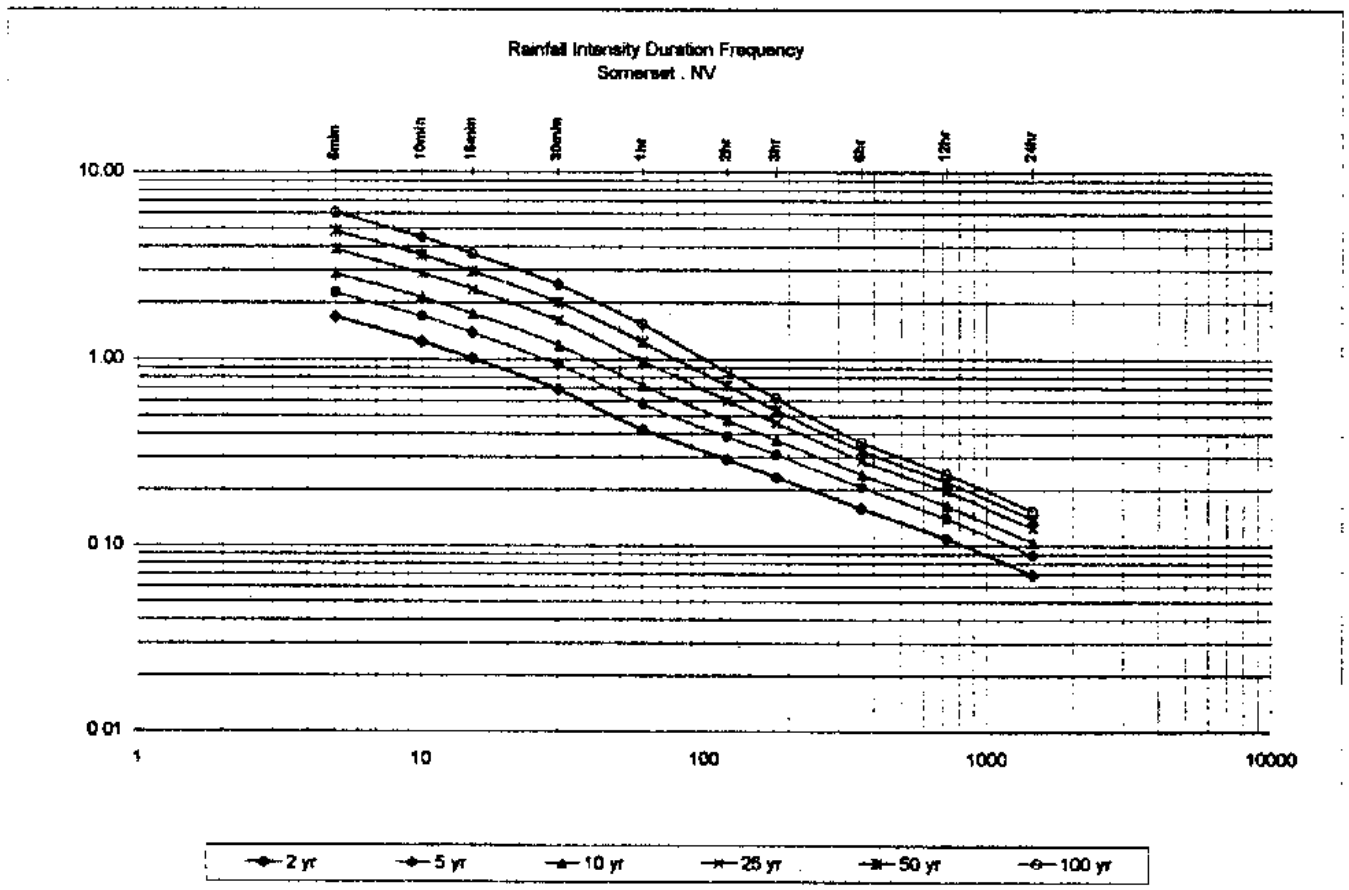
Watershed name: E2
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	0.98
2 yr- 24hr	1.66

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
	Depth (inches)									
2 yr	0.14	0.21	0.25	0.34	0.42	0.58	0.70	0.96	1.31	1.66
5 yr	0.19	0.28	0.34	0.47	0.57	0.77	0.92	1.24	1.68	2.12
10 yr	0.24	0.35	0.43	0.59	0.72	0.94	1.10	1.44	1.97	2.49
25 yr	0.32	0.46	0.58	0.80	0.97	1.20	1.37	1.72	2.35	2.97
50 yr	0.40	0.60	0.73	1.00	1.22	1.44	1.60	1.94	2.64	3.34
100 yr	0.50	0.74	0.91	1.25	1.52	1.71	1.85	2.15	2.92	3.69

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.66	1.23	1.01	0.69	0.42	0.29	0.23	0.16	0.11	0.07
5 yr	2.26	1.66	1.37	0.94	0.57	0.38	0.31	0.21	0.14	0.09
10 yr	2.86	2.12	1.73	1.19	0.72	0.47	0.37	0.24	0.16	0.10
25 yr	3.86	2.86	2.34	1.60	0.97	0.60	0.46	0.29	0.20	0.12
50 yr	4.84	3.59	2.93	2.00	1.22	0.72	0.59	0.32	0.22	0.14
100 yr	6.02	4.47	3.65	2.49	1.52	0.85	0.62	0.36	0.24	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

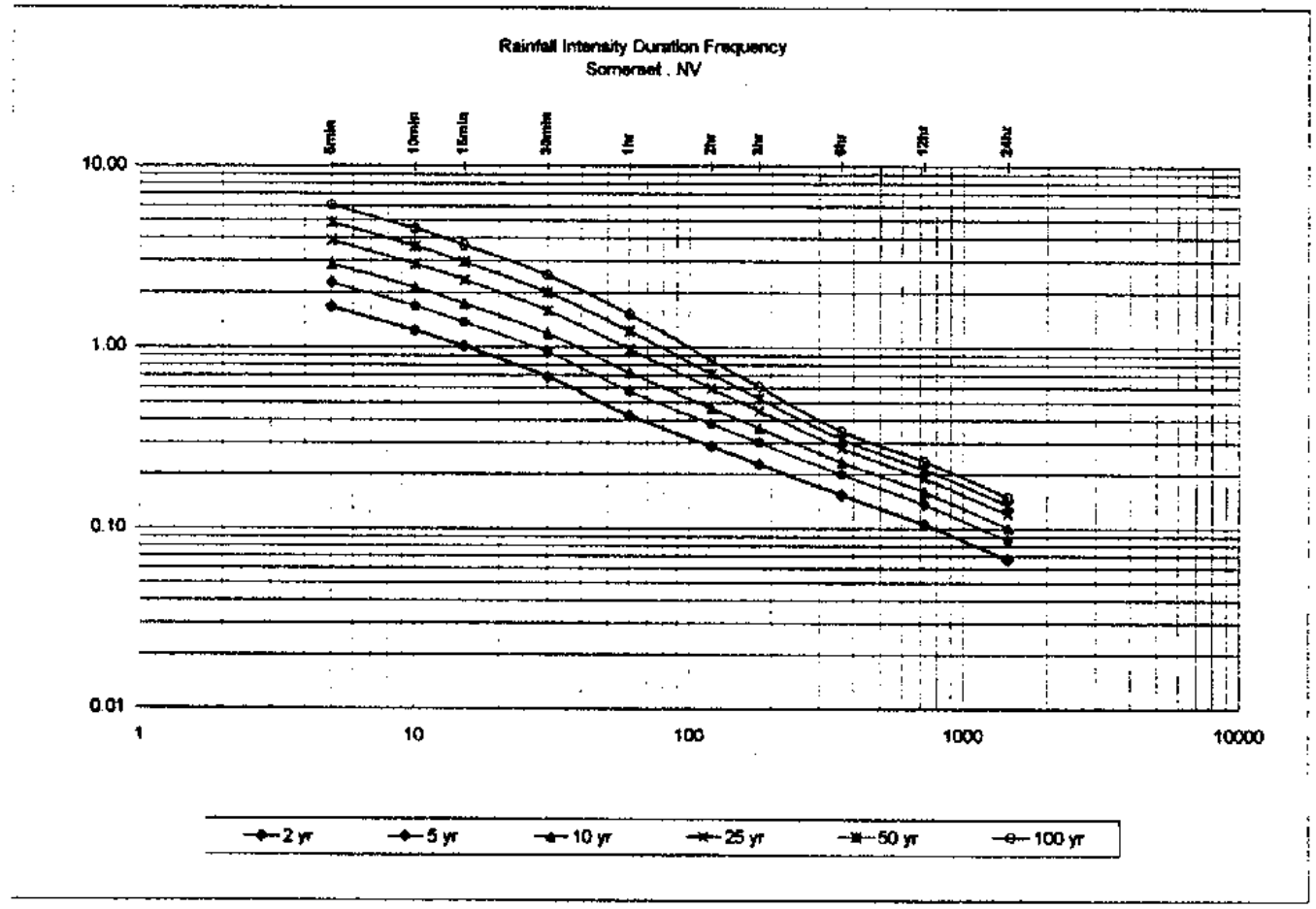
Watershed name:	E3
Project:	Somerset
WRC Job No.	3011
Date:	1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.42
2 yr- 6hr	0.92
2 yr- 24hr	1.81

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.21	0.25	0.34	0.42	0.57	0.68	0.92	1.27	1.81
5 yr	0.19	0.28	0.34	0.47	0.57	0.76	0.90	1.20	1.63	2.06
10 yr	0.24	0.35	0.43	0.59	0.72	0.92	1.06	1.40	1.91	2.42
25 yr	0.32	0.48	0.58	0.80	0.97	1.18	1.34	1.67	2.27	2.88
50 yr	0.40	0.60	0.73	1.00	1.22	1.42	1.57	1.88	2.56	3.24
100 yr	0.50	0.74	0.91	1.25	1.52	1.89	1.81	2.08	2.83	3.57

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.66	1.23	1.01	0.69	0.42	0.28	0.23	0.15	0.11	0.07
5 yr	2.26	1.68	1.37	0.94	0.57	0.38	0.30	0.20	0.14	0.09
10 yr	2.86	2.12	1.73	1.18	0.72	0.46	0.36	0.23	0.16	0.10
25 yr	3.86	2.88	2.34	1.60	0.97	0.59	0.45	0.28	0.19	0.12
50 yr	4.84	3.59	2.93	2.00	1.22	0.71	0.52	0.31	0.21	0.13
100 yr	6.02	4.47	3.65	2.49	1.52	0.84	0.60	0.35	0.24	0.15



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: E4
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

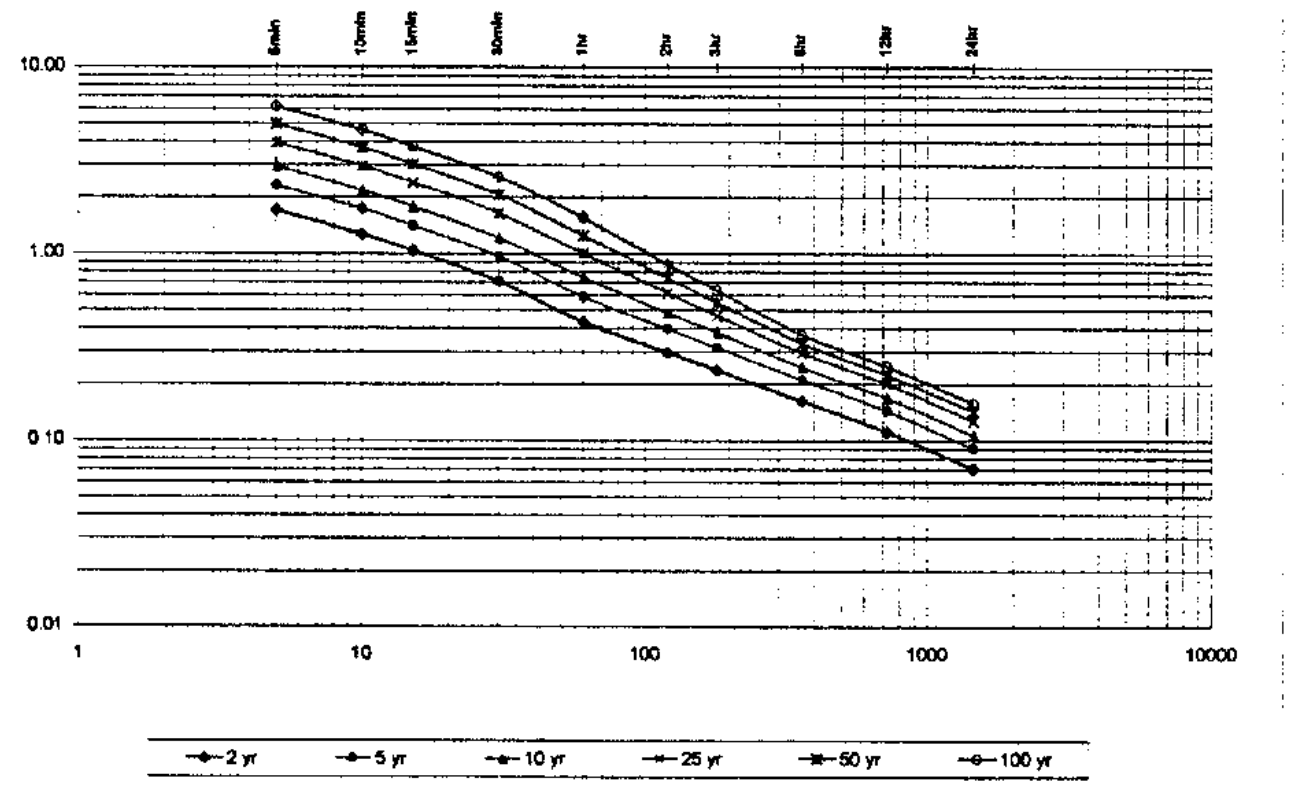
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.43
2 yr- 6hr	0.97
2 yr- 24hr	1.70

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.14	0.21	0.26	0.35	0.43	0.58	0.71	0.97	1.34	1.70
5 yr	0.19	0.29	0.35	0.48	0.58	0.79	0.94	1.28	1.72	2.18
10 yr	0.24	0.36	0.44	0.61	0.74	0.98	1.13	1.47	2.01	2.55
25 yr	0.33	0.49	0.60	0.82	1.00	1.22	1.40	1.78	2.40	3.04
50 yr	0.41	0.61	0.75	1.03	1.25	1.47	1.63	1.98	2.70	3.42
100 yr	0.51	0.76	0.93	1.28	1.56	1.75	1.89	2.19	2.98	3.77

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.70	1.26	1.03	0.71	0.43	0.30	0.24	0.16	0.11	0.07
5 yr	2.32	1.72	1.40	0.96	0.58	0.39	0.31	0.21	0.14	0.09
10 yr	2.93	2.17	1.78	1.21	0.74	0.48	0.38	0.25	0.17	0.11
25 yr	3.95	2.93	2.39	1.64	1.00	0.61	0.47	0.29	0.20	0.13
50 yr	4.98	3.68	3.00	2.05	1.25	0.73	0.54	0.33	0.22	0.14
100 yr	6.16	4.58	3.74	2.55	1.56	0.87	0.63	0.37	0.25	0.16

Rainfall Intensity Duration Frequency
Somerset , NV



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

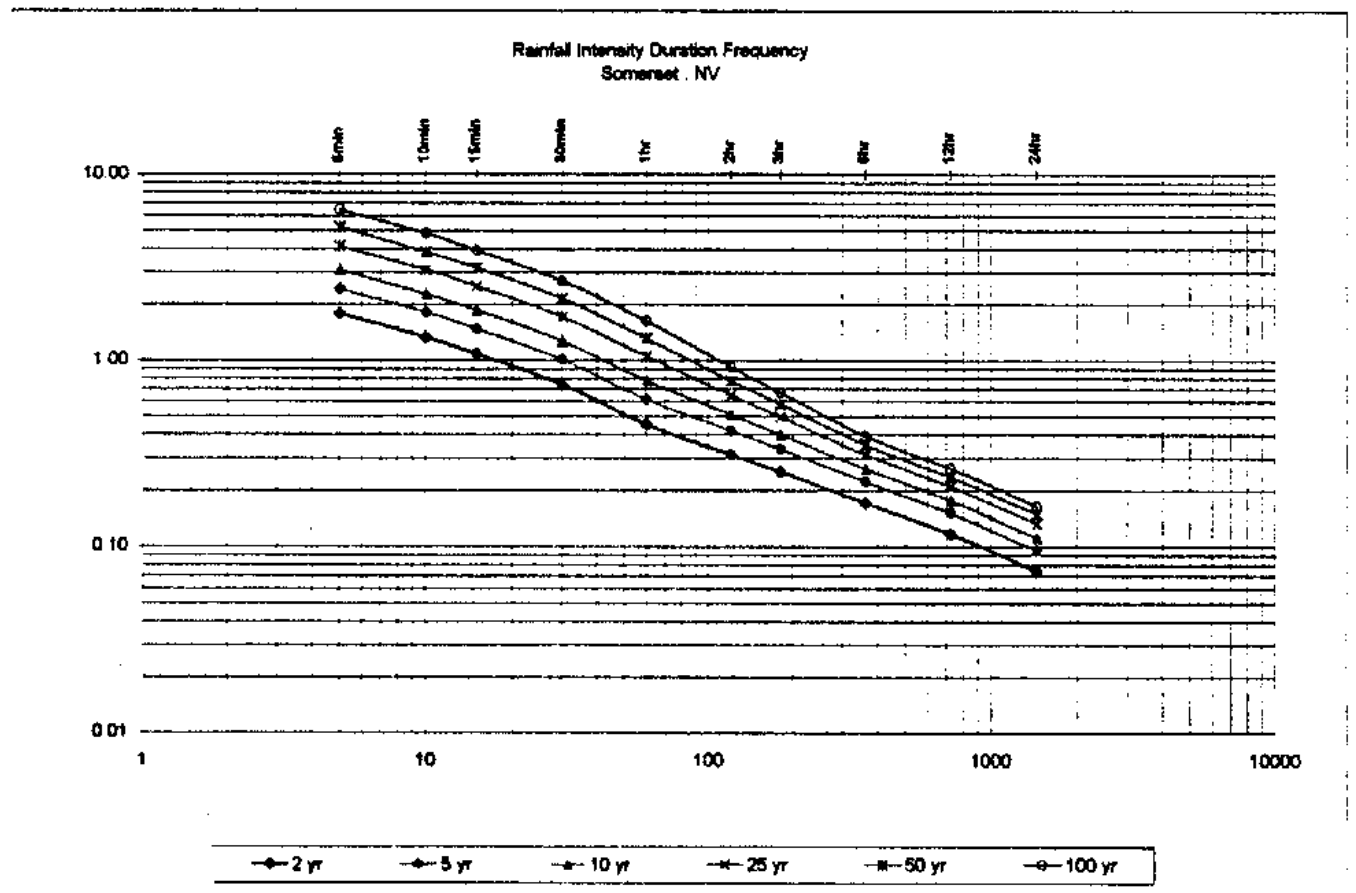
Watershed name: E5 Existing
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.48
2 yr- 6hr	1.03
2 yr- 24hr	1.78

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.27	0.37	0.45	0.62	0.76	1.03	1.41	1.78
5 yr	0.20	0.30	0.37	0.50	0.61	0.83	0.99	1.34	1.81	2.28
10 yr	0.26	0.36	0.46	0.63	0.77	1.01	1.19	1.57	2.12	2.67
25 yr	0.34	0.51	0.63	0.86	1.04	1.29	1.48	1.86	2.53	3.19
50 yr	0.43	0.64	0.79	1.07	1.31	1.55	1.73	2.10	2.84	3.58
100 yr	0.54	0.80	0.98	1.34	1.63	1.84	2.00	2.33	3.14	3.95

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.78	1.32	1.08	0.74	0.45	0.31	0.25	0.17	0.12	0.07
5 yr	2.42	1.80	1.47	1.00	0.61	0.41	0.33	0.22	0.15	0.09
10 yr	3.07	2.28	1.86	1.27	0.77	0.51	0.40	0.26	0.18	0.11
25 yr	4.13	3.07	2.51	1.71	1.04	0.64	0.49	0.31	0.21	0.13
50 yr	5.19	3.85	3.14	2.15	1.31	0.77	0.58	0.35	0.24	0.15
100 yr	6.45	4.79	3.91	2.67	1.63	0.92	0.67	0.39	0.26	0.16



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: E5a
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

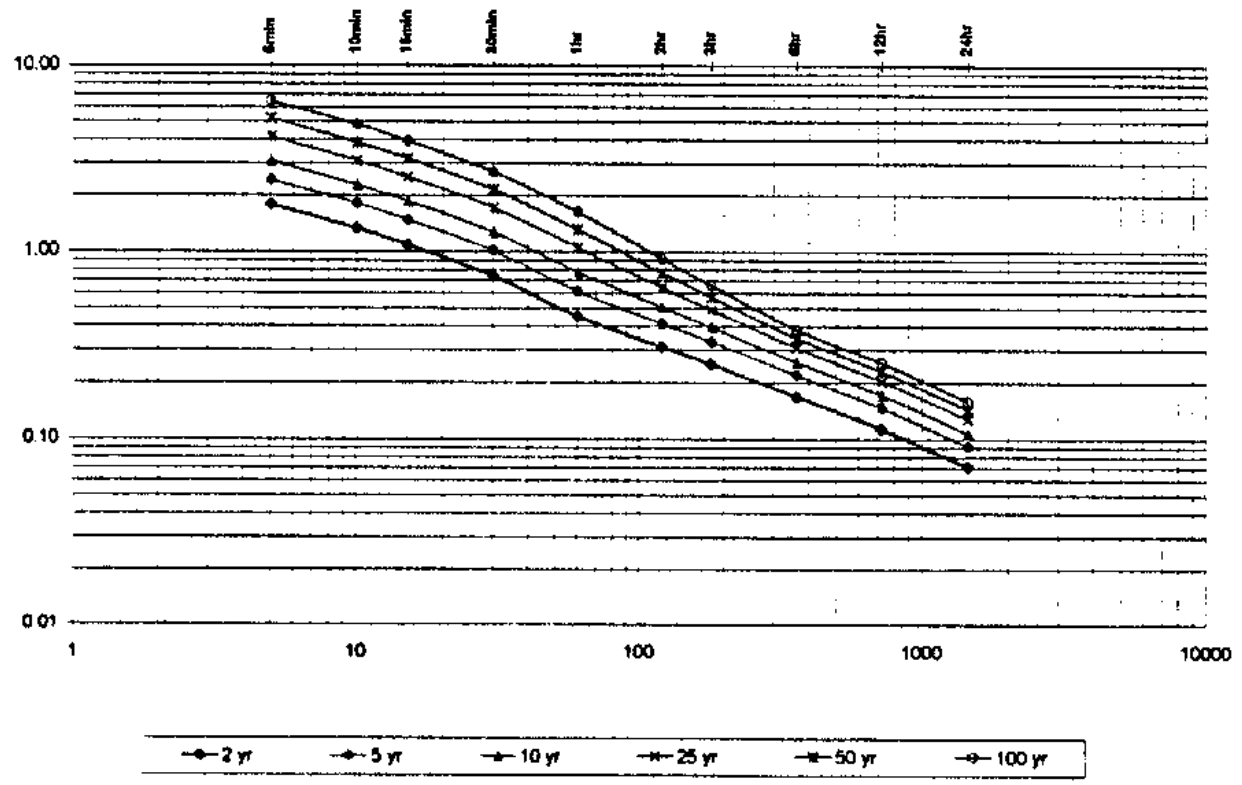
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.45
2 yr- 6hr	1.01
2 yr- 24hr	1.71

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.27	0.37	0.45	0.62	0.74	1.01	1.36	1.71
5 yr	0.20	0.30	0.37	0.50	0.61	0.82	0.98	1.31	1.75	2.19
10 yr	0.26	0.38	0.46	0.63	0.77	1.00	1.17	1.54	2.05	2.57
25 yr	0.34	0.51	0.63	0.86	1.04	1.29	1.46	1.83	2.44	3.06
50 yr	0.43	0.64	0.79	1.07	1.31	1.53	1.70	2.06	2.75	3.44
100 yr	0.54	0.80	0.98	1.34	1.63	1.82	1.97	2.28	3.04	3.80

INTENSITY (in/hr)										
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.78	1.32	1.08	0.74	0.45	0.31	0.25	0.17	0.11	0.07
5 yr	2.42	1.80	1.47	1.00	0.61	0.41	0.33	0.22	0.15	0.09
10 yr	3.07	2.28	1.86	1.27	0.77	0.50	0.39	0.26	0.17	0.11
25 yr	4.13	3.07	2.51	1.71	1.04	0.64	0.49	0.30	0.20	0.13
50 yr	5.19	3.85	3.14	2.15	1.31	0.77	0.57	0.34	0.23	0.14
100 yr	6.45	4.79	3.91	2.67	1.63	0.91	0.66	0.38	0.25	0.16

Rainfall Intensity Duration Frequency
Somerset , NV



Rainfall Depth - Duration - Frequency Data

Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: E5b
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

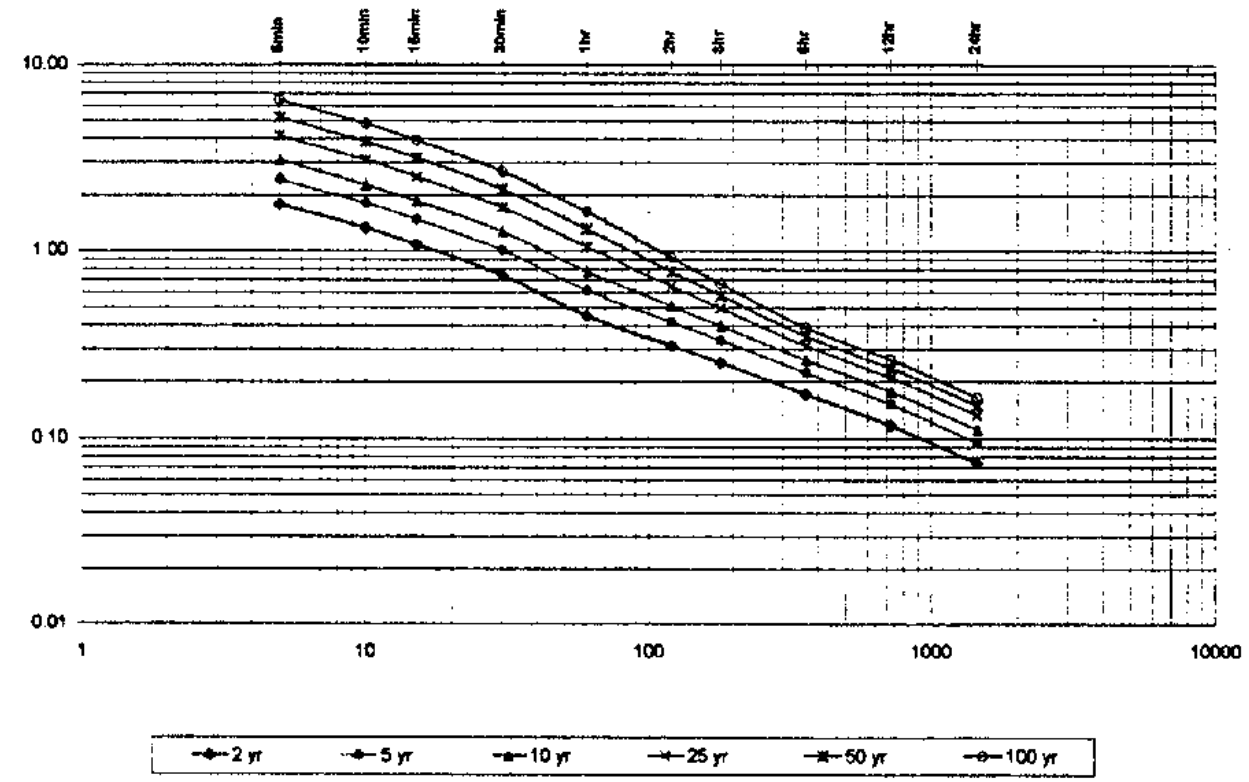
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.45
2 yr- 6hr	1.03
2 yr- 24hr	1.78

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.27	0.37	0.45	0.62	0.76	1.03	1.41	1.78
5 yr	0.20	0.30	0.37	0.50	0.61	0.83	0.99	1.34	1.81	2.28
10 yr	0.26	0.38	0.46	0.63	0.77	1.01	1.19	1.57	2.12	2.67
25 yr	0.34	0.51	0.63	0.86	1.04	1.29	1.48	1.86	2.53	3.19
50 yr	0.43	0.64	0.79	1.07	1.31	1.55	1.73	2.10	2.84	3.58
100 yr	0.54	0.80	0.98	1.34	1.63	1.84	2.00	2.33	3.14	3.95

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.78	1.32	1.08	0.74	0.45	0.31	0.25	0.17	0.12	0.07
5 yr	2.42	1.80	1.47	1.00	0.61	0.41	0.33	0.22	0.15	0.09
10 yr	3.07	2.28	1.86	1.27	0.77	0.51	0.40	0.26	0.18	0.11
25 yr	4.13	3.07	2.51	1.71	1.04	0.64	0.49	0.31	0.21	0.13
50 yr	5.19	3.85	3.14	2.15	1.31	0.77	0.58	0.35	0.24	0.15
100 yr	6.45	4.79	3.91	2.67	1.63	0.92	0.67	0.39	0.26	0.16

Rainfall Intensity Duration Frequency
Somerset , NV



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

Watershed name: E8
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

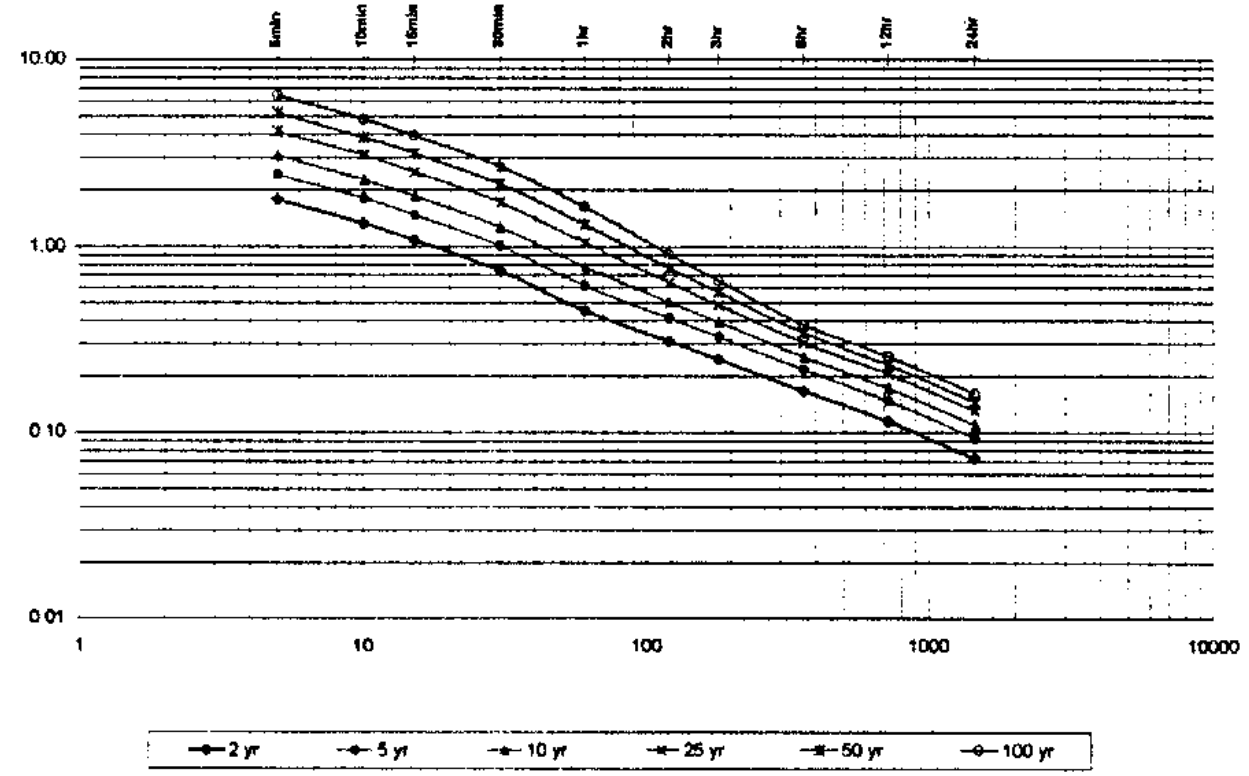
Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.45
2 yr- 6hr	1.00
2 yr- 24hr	1.74

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.15	0.22	0.27	0.37	0.45	0.61	0.74	1.00	1.37	1.74
5 yr	0.20	0.30	0.37	0.50	0.61	0.82	0.97	1.30	1.76	2.23
10 yr	0.26	0.36	0.46	0.63	0.77	1.00	1.17	1.52	2.07	2.61
25 yr	0.34	0.51	0.63	0.86	1.04	1.27	1.45	1.81	2.46	3.11
50 yr	0.43	0.64	0.79	1.07	1.31	1.53	1.69	2.04	2.77	3.50
100 yr	0.54	0.80	0.98	1.34	1.63	1.82	1.96	2.26	3.06	3.86

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.78	1.32	1.08	0.74	0.45	0.31	0.25	0.17	0.11	0.07
5 yr	2.42	1.80	1.47	1.00	0.61	0.41	0.32	0.22	0.15	0.09
10 yr	3.07	2.28	1.86	1.27	0.77	0.50	0.39	0.25	0.17	0.11
25 yr	4.13	3.07	2.51	1.71	1.04	0.64	0.48	0.30	0.21	0.13
50 yr	5.19	3.85	3.14	2.15	1.31	0.76	0.58	0.34	0.23	0.15
100 yr	6.45	4.79	3.91	2.67	1.63	0.91	0.65	0.38	0.26	0.16

Rainfall Intensity Duration Frequency
Somerset , NV



Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

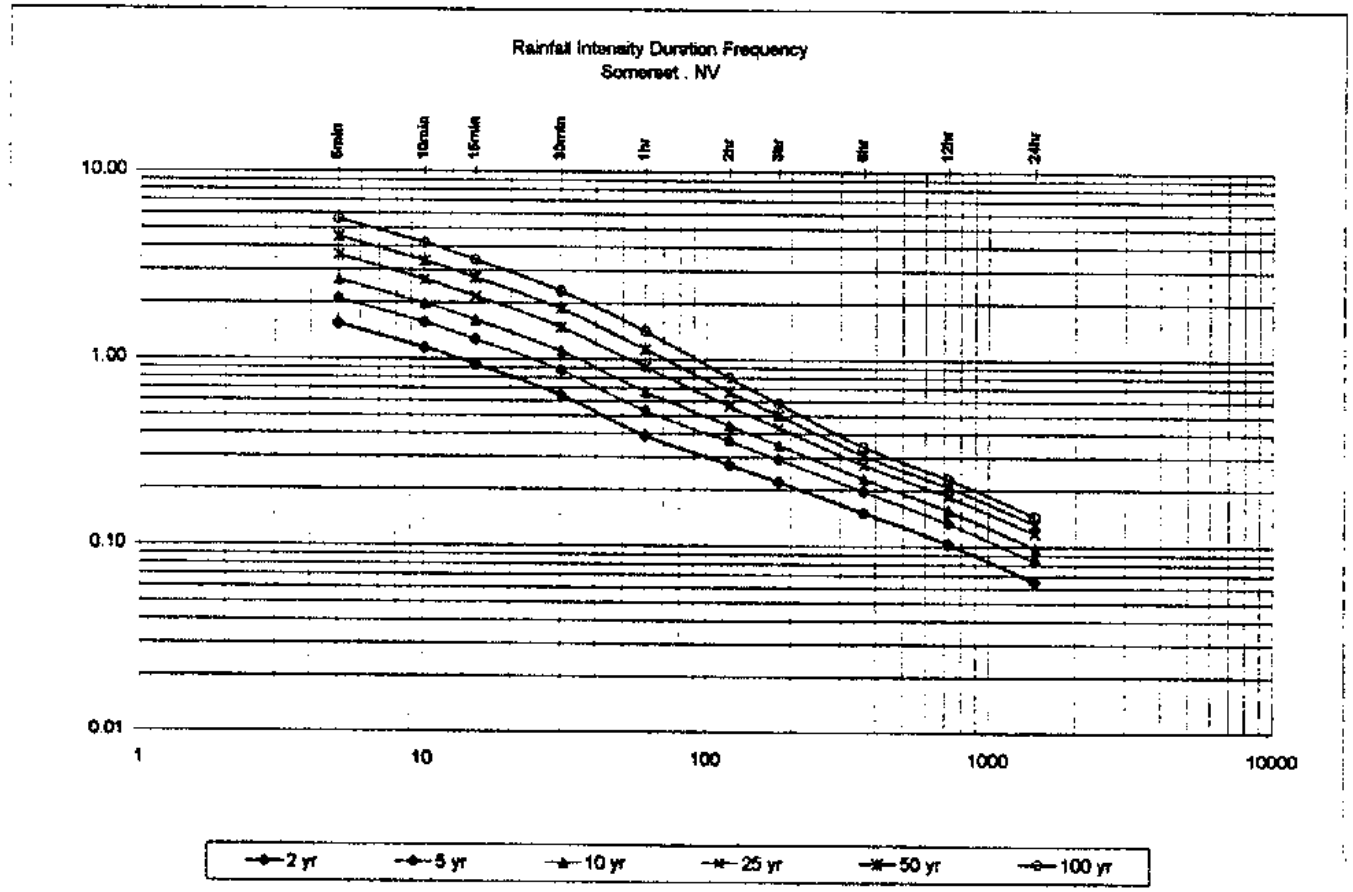
Watershed name: F1
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.39
2 yr- 6hr	0.90
2 yr- 24hr	1.56

Rainfall Depth in inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.19	0.23	0.32	0.39	0.54	0.68	0.90	1.23	1.56
5 yr	0.18	0.26	0.32	0.43	0.53	0.72	0.87	1.17	1.56	2.00
10 yr	0.22	0.33	0.40	0.55	0.67	0.88	1.04	1.37	1.85	2.34
25 yr	0.30	0.44	0.54	0.74	0.90	1.12	1.29	1.63	2.21	2.79
50 yr	0.37	0.56	0.68	0.93	1.13	1.34	1.50	1.84	2.49	3.14
100 yr	0.47	0.69	0.85	1.16	1.41	1.60	1.74	2.03	2.75	3.46

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.54	1.15	0.94	0.64	0.39	0.27	0.22	0.15	0.10	0.07
5 yr	2.10	1.56	1.27	0.87	0.53	0.36	0.29	0.20	0.13	0.08
10 yr	2.66	1.97	1.61	1.10	0.67	0.44	0.35	0.23	0.15	0.10
25 yr	3.58	2.66	2.17	1.48	0.90	0.56	0.43	0.27	0.18	0.12
50 yr	4.49	3.34	2.72	1.86	1.13	0.67	0.50	0.31	0.21	0.13
100 yr	5.59	4.15	3.39	2.32	1.41	0.80	0.58	0.34	0.23	0.14



WRC NEVADA, INC

Rainfall Depth - Duration - Frequency Data
Source: NOAA Semi-arid Precipitation Study - Nevada, 1997

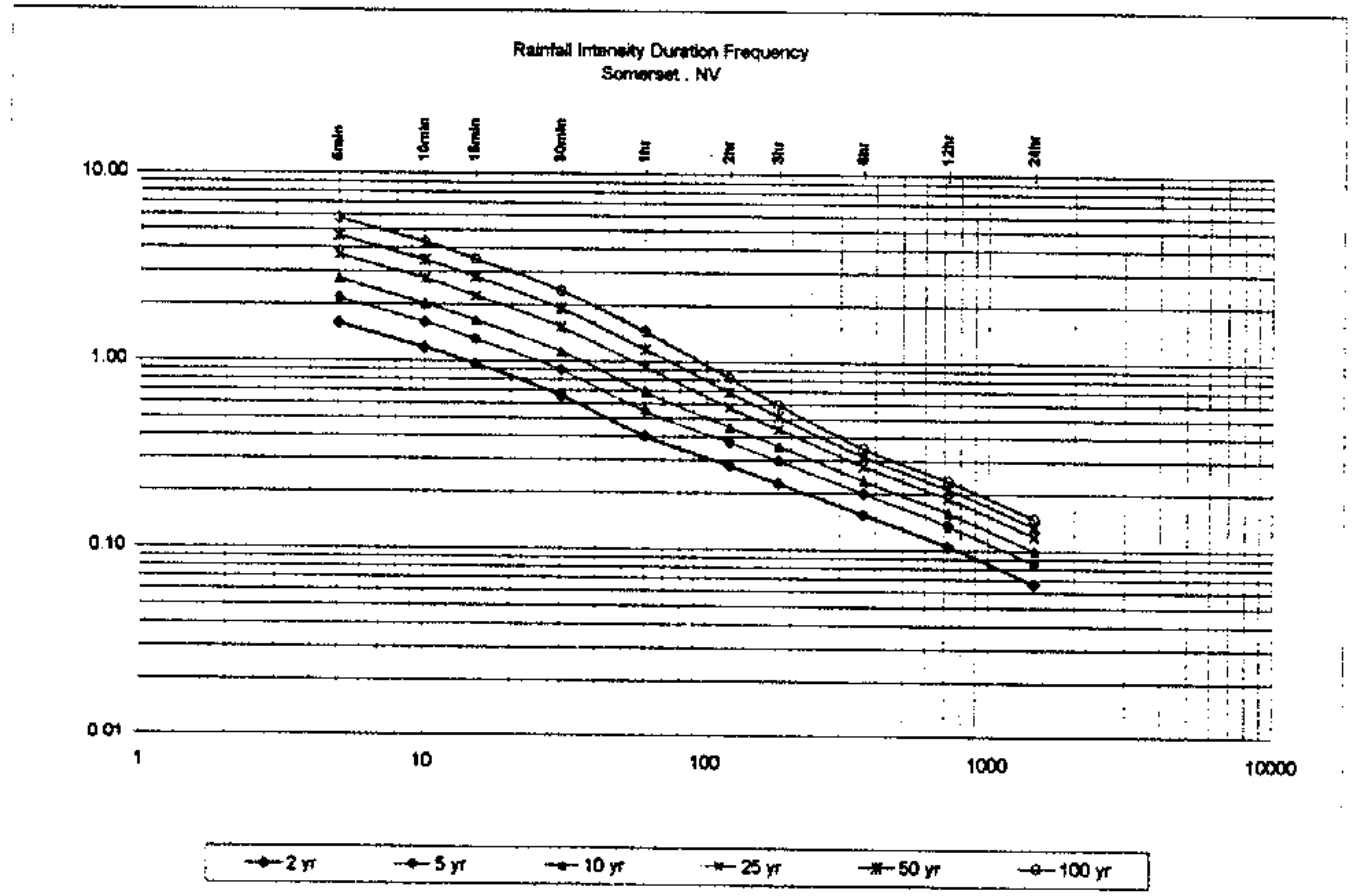
Watershed name: F2
Project: Somerset
WRC Job No. 3011
Date: 1-Jan-98

Map Data:	
Recurance	Depth (inch)
2 yr-1hr	0.40
2 yr- 6hr	0.92
2 yr- 24hr	1.59

Rainfall Depth in Inches, Calculated Following the Equations in Section 6 of the Preliminary Washoe County Hydraulic Criteria and Drainage Design Manual

Return Period (Yr.)	5 min	10 min	15 min	30 min	1 hr	2 hr	3 hr	6 hr	12 hr	24 hr
					Depth (inches)					
2 yr	0.13	0.20	0.24	0.33	0.40	0.56	0.67	0.92	1.26	1.59
5 yr	0.18	0.27	0.33	0.45	0.54	0.74	0.89	1.20	1.62	2.04
10 yr	0.23	0.34	0.41	0.56	0.69	0.90	1.06	1.40	1.89	2.39
25 yr	0.31	0.45	0.56	0.76	0.93	1.15	1.32	1.67	2.26	2.85
50 yr	0.38	0.57	0.70	0.95	1.16	1.38	1.54	1.88	2.64	3.20
100 yr	0.48	0.71	0.87	1.19	1.45	1.64	1.78	2.08	2.80	3.53

	INTENSITY (in/hr)									
Return Period (Yr.)	5 min	10 min	15 min	30 min	60 min	120 min	180 min	360 min	720 min	1440 min
2 yr	1.58	1.18	0.96	0.66	0.40	0.28	0.22	0.15	0.10	0.07
5 yr	2.15	1.60	1.31	0.89	0.54	0.37	0.30	0.20	0.13	0.08
10 yr	2.72	2.02	1.65	1.13	0.69	0.45	0.35	0.23	0.16	0.10
25 yr	3.67	2.73	2.23	1.52	0.93	0.57	0.44	0.28	0.19	0.12
50 yr	4.61	3.42	2.79	1.91	1.16	0.69	0.51	0.31	0.21	0.13
100 yr	5.73	4.26	3.48	2.37	1.45	0.82	0.59	0.35	0.23	0.15



APPENDIX B
Watershed Data

APPENDIX B - WATERSHED DATA

Watershed Data Summary

WRC NEVADA, INC.

April 17, 1998

SOMERSETT MASTER HYDROLOGY
EXISTING CONDITIONS HYDROLOGIC DATA

BASIN	AREA (ac)	(sq. mi)	LAG TIME (hr)	CURVE NO.
A1	72.1	0.1127	0.58	76
A2	144.9	0.2264	0.49	78
A3	104.8	0.1638	0.40	78
A4	27.4	0.0428	0.33	61
A5	90.0	0.1406	0.40	72
A6	74.4	0.1163	0.40	73
A7	192.1	0.3002	0.53	81
A8	95.8	0.1497	0.60	74
A9	235.3	0.3677	0.70	78
A10	182.5	0.2852	0.56	79
A11	81.8	0.1278	0.48	73
A12	34.8	0.0544	0.33	78
A13	125.5	0.1961	0.54	78
A14	262.0	0.4094	0.54	73
A15	100.0	0.1563	0.42	78
B1	42.8	0.0669	0.26	76
B2	69.9	0.1092	0.50	78
B3	47.7	0.0746	0.41	78
B4	44.6	0.0697	0.39	78
B5	27.0	0.0422	0.25	73
B6	22.0	0.0344	0.30	78
B7	32.9	0.0514	0.42	78
B8	134.5	0.2102	0.43	78
B9	54.4	0.0850	0.37	78
B10	79.7	0.1245	0.52	75
B11	52.5	0.0820	0.39	76
B12	223.0	0.3484	0.43	79
B13	153.6	0.2400	0.45	70
B14	63.1	0.0985	0.38	77
B15	23.9	0.0373	0.34	70
B16	44.5	0.0695	0.29	78
B17	264.7	0.4136	0.58	76

BASIN	AREA (ac)	(sq. mi)	LAG TIME (hr)	CURVE NO.
C1	46.3	0.0723	0.30	78
C2	109.1	0.1705	0.43	78
C3	138.3	0.2161	0.52	77
C4	76.7	0.1198	0.43	69
C5	97.8	0.1528	0.50	78
C6	81.9	0.1280	0.42	75
C7	202.7	0.3167	0.54	82
C8	152.3	0.2380	0.43	80
C9	73.4	0.1147	0.45	75
C10	421.1	0.6580	0.81	81
C11	215.0	0.3359	0.43	80
D1	140.2	0.2191	0.42	73
E1	99.1	0.1548	0.55	76
E2	105.8	0.1653	0.55	62
E3	76.2	0.1191	0.54	75
E4	270.8	0.4231	0.90	76
E5	79.4	0.1241	0.44	77
E6	28.7	0.0448	0.27	65
F1	126.0	0.1969	0.54	76
F2	86.5	0.1352	0.46	79

SOMERSETT MASTER HYDROLOGY
DEVELOPED CONDITIONS HYDROLOGIC DATA

BASIN	AREA (ac)	(sq. mi)	LAG TIME (hr)	CURVE NO.
A2	126.3	0.1974	0.532	77
A3	85.1	0.1329	0.341	80
A4	25.9	0.0405	0.325	66
A5	82.6	0.1291	0.446	87
A6a	37.3	0.0583	0.217	78
A6b	32.5	0.0508	0.365	81
A8a	35.1	0.0548	0.308	79
A8b	91.4	0.1428	0.515	76
A9	239.1	0.3736	0.700	78
A10	180.4	0.2819	0.557	79
A11	68.3	0.1068	0.475	75
A12	36.1	0.0564	0.313	78
A13	122.4	0.1912	0.517	79
B1	33.7	0.0527	0.269	83
B2a	33.5	0.0523	0.331	86
B2b	80.4	0.1255	0.385	86
B2c	37.9	0.0592	0.358	84
B3	28.5	0.0445	0.296	84
B4	23.1	0.0360	0.307	85
B5	49.1	0.0766	0.365	80
B6	18.4	0.0288	0.277	78
B7	15.4	0.0240	0.332	78
B8a	156.5	0.2445	0.433	76
B8b	24.4	0.0382	0.258	84
B9	37.8	0.0591	0.395	79
B10a	67.6	0.1056	0.410	84
B10b	23.0	0.0360	0.175	87
B10c	8.1	0.0129	0.170	87
B11	49.8	0.0777	0.393	76
B14	56.1	0.0877	0.344	78
B16	58.7	0.0917	0.302	86

BASIN	AREA (ac)	(sq. mi)	LAG TIME (hr)	CURVE NO.
C1	51.8	0.0809	0.301	79
C3a	74.3	0.1162	0.416	76
C3b	64.0	0.0999	0.380	78
C4b	24.6	0.0384	0.366	77
C4a	59.5	0.0930	0.453	79
C6	61.2	0.0956	0.420	77
E2	102.2	0.1597	0.546	62
E4	285.8	0.4466	0.817	80
E5a	22.2	0.0347	0.293	92
E5b	57.2	0.0893	0.460	91
E6a	22.3	0.0348	0.230	88
E6b	6.8	0.0106	0.168	87
F1a	49.7	0.0776	0.267	82
F1b	67.2	0.1049	0.324	79

SOMERSETT MASTER HYDROLOGY
PHASE I CONDITIONS

BASIN	AREA (ac)	(sq. mi.)	LAG TIME (hr)	CURVE NO.
B1	41.78	0.07	0.13	82
B2b	45.91	0.07	0.36	78
B2c	42.01	0.07	0.19	84
B3	32.37	0.05	0.32	78

PHASE II CONDITIONS

BASIN	AREA (ac)	(sq. mi.)	LAG TIME (hr)	CURVE NO.
B2a	15.46	0.02	0.21	78
B3	33.29	0.05	0.32	79

PHASE III CONDITIONS

BASIN	AREA (ac)	(sq. mi.)	LAG TIME (hr)	CURVE NO.
A5a	76.55	0.12	0.22	88
A8	89.14	0.14	0.45	75

PHASE IV CONDITIONS

BASIN	AREA (ac)	(sq. mi.)	LAG TIME (hr)	CURVE NO.
A11	61.29	0.10	0.27	74

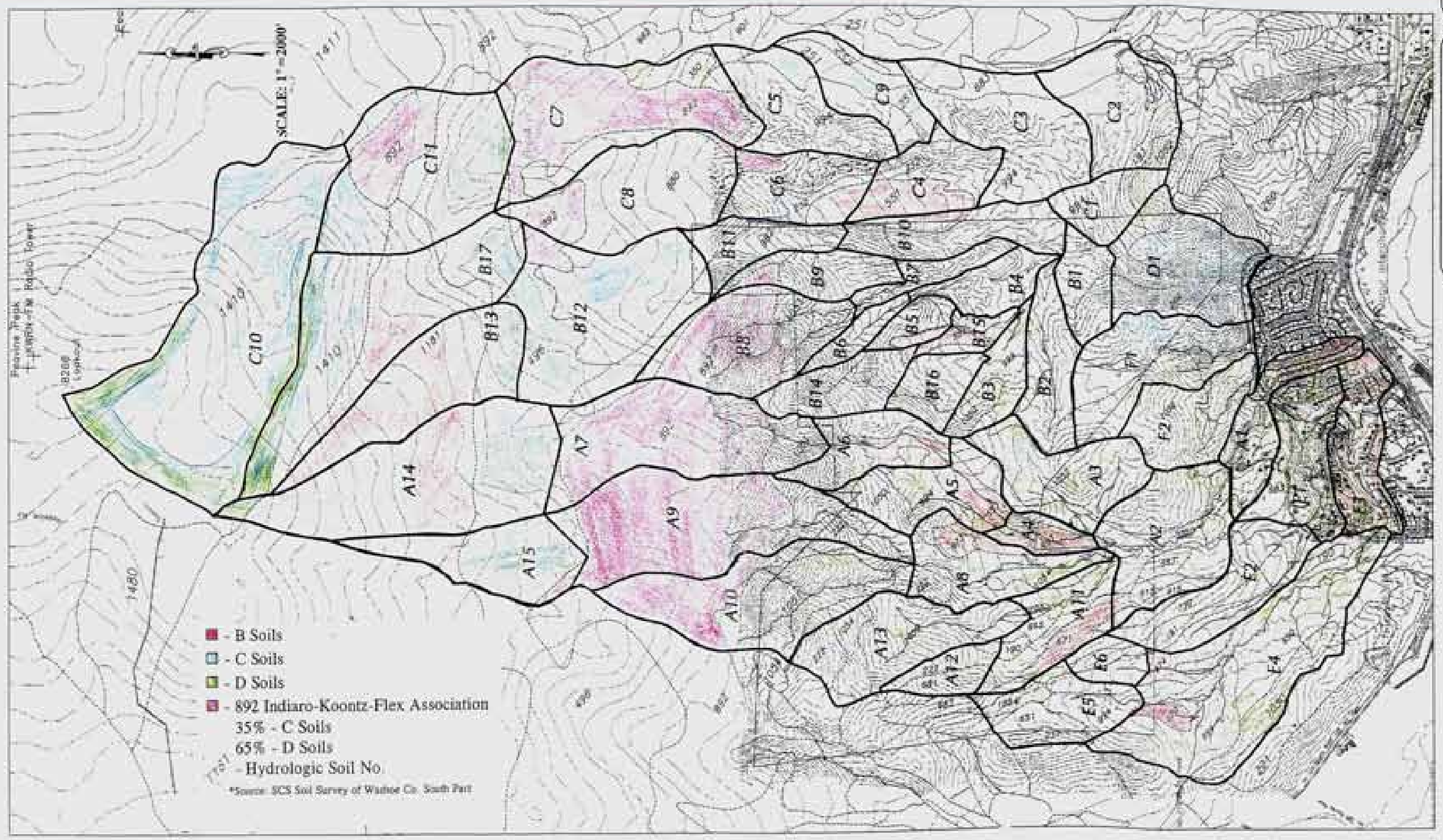
APPENDIX B - WATERSHED DATA

Watershed Soils Maps

WRC NEVADA, INC.

April 17, 1998

Somerset
Storm Drainage Master Plan
Map of Hydrologic Soils Groups



WRC NEVADA, INC.

JEFF CODEGA
PLANNING/DESIGN, INC.
planners • landscape architects • engineers

APPENDIX B - WATERSHED DATA

Existing Condition Watershed Spreadsheets

WRC NEVADA, INC.

April 17, 1998

VERSION: 12-02-1996

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

DEVELOPMENT: SUMERSETT STORMWATER MASTER PLAN EXISTING CONDITIONS

CALCULATED BY: SKG/MEF DATE: May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG-	R	AREA Ac	LENGTH FT	SLOPE %	ti Min	LENGTH FT	SLOPE %	VEL. FPS	tt Min.	tc Min.	TOTAL LENGTH FT	tc=(L/180)+10 Min.	Min.	LAG ESTIMATE hr (.6)tc*60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
A1	0.6132		500	8	9.8	4200	*	3	23.3	33.1	4700	36	33.1	0.33
A2	0.6396		500	8	9.3	2800	*	3	15.6	24.8	3300	28	24.8	0.25
A3	0.6396		500	8	9.3	2800	*	3	15.6	24.8	3300	28	24.8	0.25
A4	0.4152		500	4	17.4	1690	*	2.5	11.3	28.6	2190	22	28.6	0.29
A5	0.5604		500	12	9.5	3270	*	3	18.2	27.7	3770	31	27.7	0.28
A6	0.5736		500	8	10.6	3350	*	3	18.6	29.2	3850	31	29.2	0.29
A7	0.6782		500	16	8.7	5200	*	3.5	24.8	31.5	5700	42	31.5	0.31
A8	0.5868		500	12	9.0	4300	*	3	23.9	32.9	4800	37	32.9	0.33
A9	0.6396		500	12	8.1	7500	*	5	25.0	33.1	8000	54	33.1	0.33
A10	0.6528		500	12	7.9	5960	*	4.5	22.1	29.9	6460	46	29.9	0.30
A11	0.5736		500	32	6.7	3700	*	2.5	24.7	31.3	4200	33	31.3	0.31
A12	0.6396		500	10	8.6	2150	*	2.5	14.3	22.9	2650	25	22.9	0.23
A13	0.6396		500	32	5.8	5100	*	3.5	24.3	30.1	5600	41	30.1	0.30
A14	0.5736		1000	16	11.9	6170	*	5	20.6	32.5	7170	50	32.5	0.32
A15	0.6396		1000	40	7.7	4480	*	3.5	21.3	29.0	5480	40	29.0	0.29

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

STANDARD FORM 2

VERSION: 12-02-1996

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

STANDARD FORM 2

DEVELOPMENT SUMERSETT STORMWATER MASTER PLAN EXISTING CONDITIONS

CALCULATED BY SKG/MEF DATE May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG (1)	R (2)	AREA Ac (3)	LENGTH FT (4)	SLOPE % (5)	ti Min (6)	LENGTH FT (7)	SLOPE % (8)	VEL. FPS (9)	tt Min. (10)	tc Min. (11)	TOTAL LENGTH FT (12)	tc=(L/180)+10 Min. (13)	Min. (14)	LAG ESTIMATE hr (.6)tc*60
B1	0.6132		500	24	6.8	1450	*	2.5	9.7	16.5	1950	21	16.5	0.16
B2	0.6396		500	24	6.4	3800	*	2.5	25.3	31.8	4300	34	31.8	0.32
B3	0.6396		500	32	5.8	2800	*	2.5	18.7	24.5	3300	28	24.5	0.25
B4	0.6396		50	30	1.9	3010	*	2.5	20.1	22.0	3060	27	22.0	0.22
B5	0.5736		500	24	7.3	1400	*	2.5	9.3	16.7	1900	21	16.7	0.17
B6	0.6396		500	32	5.8	2200	*	2.5	14.7	20.5	2700	25	20.5	0.21
B7	0.6396		50	30	1.9	3350	*	2	27.9	29.8	3400	29	29.8	0.30
B8	0.6396		500	32	5.8	3940	*	4	16.4	22.3	4440	35	22.3	0.22
B9	0.6396		500	32	5.8	3160	*	2.5	21.2	27.0	3680	30	27.0	0.27
B10	0.6		500	10	9.3	3840	*	2.5	25.6	34.9	4340	34	34.9	0.35
B11	0.6132		500	32	6.2	2800	*	2.5	18.7	24.8	3300	28	24.8	0.25
B12	0.6528		500	32	5.7	4200	*	3.5	20.0	25.7	4700	36	25.7	0.26
B13	0.534		500	40	6.7	5430	*	3.5	25.9	32.5	5930	43	32.5	0.33
B14	0.6284		500	32	6.0	3060	*	2.5	20.4	26.4	3560	30	26.4	0.26
B15	0.534		500	10	10.6	1800	*	2	15.0	25.6	2300	23	25.6	0.26
B16	0.6396		500	32	5.8	1800	*	2	15.0	20.8	2300	23	20.8	0.21
B17	0.6132		500	24	6.8	7500	*	5	25.0	31.8	8000	54	31.8	0.32

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

VERSION: 12-02-1998

STANDARD FORM 2

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

DEVELOPMENT SUMERSETT STORMWATER MASTER PLAN EXISTING CONDITIONS

CALCULATED BY SKG/MEF DATE May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG	R	AREA Ac	LENGTH FT	SLOPE %	ti Min	LENGTH FT	SLOPE %	VEL. FPS	tt Min.	tc Min.	TOTAL LENGTH FT	tc=(L/180)+10 Min.	Min.	LAG ESTIMATE hr (.6)tc*60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
C1	0.6396		500	24	6.4	2100	*	2	17.5	23.9	2600	24	23.9	0.24
C2	0.6396		500	12	8.1	2188	*	2	18.2	26.3	2688	25	26.3	0.26
C3	0.6264		500	8	9.5	3910	*	3	21.7	31.3	4410	35	31.3	0.31
C4	0.5208		1000	8	16.5	2490	*	3	13.8	30.3	3490	29	30.3	0.30
C5	0.6396		400	40	4.8	3950	*	3	21.9	26.8	4350	34	26.8	0.27
C6	0.6		500	40	5.9	2900	*	2.5	19.3	25.2	3400	29	25.2	0.25
C7	0.6924		500	40	4.8	5600	*	4.5	20.7	25.5	6100	44	25.5	0.26
C8	0.666		500	40	5.1	4330	*	4	18.0	23.1	4830	37	23.1	0.23
C9	0.6		500	8	10.1	3095	*	3	17.2	27.3	3595	30	27.3	0.27
C10	0.6792		500	22	6.0	8900	*	5.5	27.0	33.0	9400	62	33.0	0.33
C11	0.668		500	40	5.1	4200	*	5	14.0	19.1	4700	36	19.1	0.19
D1	0.5736		500	24	7.3	4000	*	4	16.7	24.0	4500	35	24.0	0.24
E1	0.6132		500	8	9.8	3790	*	3	21.1	30.9	4290	34	30.9	0.31
E2	0.4284		500	10	12.5	4600	*	3	25.6	38.1	5100	38	38.1	0.38
E3	0.6		500	12	8.8	3300	*	3	18.3	27.1	3800	31	27.1	0.27
E4	0.6132		500	16	7.6	7500	*	4.5	27.8	35.6	8000	54	35.6	0.36
E5	0.6264		500	24	6.6	3000	*	2.5	20.0	26.6	3500	29	26.6	0.27
E6	0.468		500	10	11.8	1190	*	2	9.9	21.7	1690	19	21.7	0.22
F1	0.6132		500	24	6.8	4500	*	3	25.0	31.8	5000	38	31.8	0.32
F2	0.6528		500	16	7.1	3200	*	3	17.8	24.9	3700	31	24.9	0.25

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

SOMERSETT
HYDROLOGIC ANALYSIS

EXISTING CONDITION
JN: 1466.0003
By: BS
12-24-97

Watershed Area: A1

Measured=	72.10	acres
	0.11	sq. miles

Watershed Slope:

Length=	4700	ft
Lc =	2500	ft
Elev. Low	4700	ft
Elev. high	4975	ft
Height=	275	ft
Slope=	5.85%	
Slope=	308.9	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	39.87	55%	sage/brush	78		994,991
D	4.43	6%	sage/brush-rockoutcrop	85		683
B	27.8	39%	1/3 acre residential	72		669,620,480
TOTAL	72.1	100%			**76**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.58

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION

'N: 1466.0003

.y: BS

Watershed Area: A2

Measured=	144.90	acres
	0.23	sq. miles

Watershed Slope:

Length=	3300	ft
Lc =	2080	ft
Elev. Low	4875	ft
Elev. high	5050	ft
Height=	175	ft
Slope=	5.30%	
Slope=	280.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	81.90	57%	sage/brush	78		994,1050,1052
D	59.33	41%	sage/brush	78		683,615,650
B	3.67	3%	sage/brush	59		671,553
TOTAL	144.9	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:

K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.49

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION

'N: 1466.0003

By: BS

Watershed Area: A3

Measured=	104.80	acres
	0.16	sq. miles

Watershed Slope:

Length=	3300	ft
Lc =	1200	ft
Elev. Low	5050	ft
Elev. high	5275	ft
Height=	225	ft
Slope=	6.82%	
Slope=	360.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	104.80	100%	Shrub brush	78		994,1050,1052
TOTAL	104.80	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.40

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
'N: 1466.0003
By: BS

Watershed Area: A4

Measured=	27.40	acres
	0.04	sq. miles

Watershed Slope:

Length=	2190	ft
Lc =	1000	ft
Elev. Low	5050	ft
Elev. high	5200	ft
Height=	150	ft
Slope=	6.85%	
Slope=	361.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	22.90	84%	shrub/brush	58		553
D	4.50	16%	shrub/brush	78		1050
TOTAL	27.40	100%		**61**		

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.33

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION
'N: 1466.0003
3y: BS

Watershed Area: A5

Measured=	90.00	acres
	0.14	sq. miles

Watershed Slope:

Length=	3770	ft
Lc =	1500	ft
Elev. Low	5175	ft
Elev. high	5675	ft
Height=	500	ft
Slope=	13.26%	
Slope=	700.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	25.00	28%	shrub/brush	58		553,673
D	40.00	44%	shrub/brush	78		1050
D	25.00	28%	shrub/brush	78		994
TOTAL	90.00	100%			**72**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.40

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION
N: 1466.0003
By: BS
1-2-97

Watershed Area: A6

Measured=	74.40	acres
	0.12	sq. miles

Watershed Slope:

Length=	3850	ft
Lc =	1638	ft
Elev. Low	5250	ft
Elev. high	5900	ft
Height=	650	ft
Slope=	16.88%	
Slope=	891.4	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	20.30	27%	shrub/brush	58		553
D	49.60	67%	shrub/brush	78		1051,1050
D	4.50	6%	shrub/brush-rock outcrop	85		994
TOTAL	74.40	100%			**73**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.40

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: A7

Measured=	192.12	acres
	0.30	sq. miles

Watershed Slope:

Length=	5700	ft
Lc =	3190	ft
Elev. Low	5480	ft
Elev. high	6800	ft
Height=	1320	ft
Slope=	23.16%	
Slope=	1,222.7	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	44.68	23%	shrub/brush	76		892
D	82.97	43%	shrub/brush	82		892
D	64.47	34%	shrub/brush	82		1051,982
TOTAL	192.12	100%			81	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.53

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: A8

Measured=	95.80	acres
	0.15	sq. miles

Watershed Slope:

Length=	4800	ft
Lc =	3000	ft
Elev. Low	5050	ft
Elev. high	5400	ft
Height=	350	ft
Slope=	7.29%	
Slope=	385.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	17.06	18%		58		673,553
D	78.74	82%	shrub/brush	78		1054,1050,222 994
TOTAL	95.80	100%			74	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.60

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
IN: 1466.0003
By: BS

Watershed Area: A9

Measured=	235.30	acres
	0.37	sq. miles

Watershed Slope:

Length=	8000	ft
Lc =	4600	ft
Elev. Low	5325	ft
Elev. high	6800	ft
Height=	1475	ft
Slope=	18.44%	
Slope=	973.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	66.56	28%	shrub/brush	74		892
D	123.60	53%	shrub/brush	80		892
D	45.14	19%	shrub/brush	80		222,1051,1050
TOTAL	235.30	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.70

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
IN: 1466.0003
by: BS

Watershed Area: A10

Measured=	182.50	acres
	0.29	sq. miles

Watershed Slope:

Length=	6460	ft
Lc =	3000	ft
Elev. Low	5325	ft
Elev. high	6650	ft
Height=	1325	ft
Slope=	20.51%	
Slope=	1,083.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	100.49	55%	shrub/brush	80		1051,1054,222
C	28.70	16%	shrub/brush	73		892
D	53.31	29%	shrub/brush	80		892
TOTAL	182.50	100%			79	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where:

K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.56

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
IN: 1466.0003
By: BS

Watershed Area: A11

Measured=	81.80	acres
	0.13	sq. miles

Watershed Slope:

Length=	4200	ft
Lc =	1970	ft
Elev. Low	5050	ft
Elev. high	5425	ft
Height=	375	ft
Slope=	8.93%	
Slope=	471.4	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	20.80	25%	shrub/brush	58		671
D	40.01	49%	shrub/brush	78		1054,1050
D	20.99	26%	shrub/brush	78		190,615,681
TOTAL	81.80	100%			73	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.48

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
JN: 1466.0003
By: BS

Watershed Area: A12

Measured=	34.80	acres
	0.05	sq. miles

Watershed Slope:

Length=	2650	ft
Lc =	1300	ft
Elev. Low	5220	ft
Elev. high	5650	ft
Height=	430	ft
Slope=	16.23%	
Slope=	856.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	17.40	50%	shrub/brush	78		190,222
D	17.40	50%	shrub/brush	78		681
TOTAL	34.80	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.33

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
IN: 1466.0003
y: BS

Watershed Area: A13

Measured=	125.50	acres
	0.20	sq. miles

Watershed Slope:

Length=	5600	ft
Lc =	2600	ft
Elev. Low	5150	ft
Elev. high	5900	ft
Height=	750	ft
Slope=	13.39%	
Slope=	707.1	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	7.10	4%	shrub/brush	78		1050,1054
D	158.00	96%	shrub/brush	78		222,615,190
OTAL	165.10	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.54

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
IN: 1466.0003
y: BS

Watershed Area: A14

Measured=	262.00	acres
	0.41	sq. miles

Watershed Slope:

Length=	7170	ft
Lc =	2540	ft
Elev. Low	6280	ft
Elev. high	7875	ft
Height=	1595	ft
Slope=	22.25%	
Slope=	1,174.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	7.10	3%	Rock outcrops	85		1181
B	158.00	60%	shrub/brush	66		1181
C	37.90	14%	shrub/brush	80		496
D	59.00	23%	shrub/brush	85		496
OTAL	262.00	100%			73	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.54

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION

JN: 1466.0003

By: BS

Watershed Area: A15

Measured=	100.00	acres
	0.16	sq. miles

Watershed Slope:

Length=	4980	ft
Lc =	1730	ft
Elev. Low	6400	ft
Elev. high	7560	ft
Height=	1160	ft
Slope=	23.29%	
Slope=	1,229.9	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	31.36	31%	shrub/brush	66		1181
C	28.56	29%	shrub/brush	80		496
D	40.08	40%	shrub/brush	85		496,892
TOTAL	100.00	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:

K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.42

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS
12-24-97

Watershed Area: B1

Measured:	42.80	acres
	0.07	sq. miles

Watershed Slope:

Length=	1950	ft
Lc =	800	ft
Elev. Low	4900	ft
Elev. high	5140	ft
Height=	240	ft
Slope=	12.31%	
Slope=	649.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	16.4	38%	sage/brush	72		260
D	26.4	62%	sage/brush	78		994
TOTAL	42.8	100%			**76**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.26

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B2

Measured:	69.90	acres
	0.11	sq. miles

Watershed Slope:

Length=	4300	ft
Lc =	2000	ft
Elev. Low	4975	ft
Elev. high	5295	ft
Height=	320	ft
Slope=	7.44%	
Slope=	392.9	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	48.66	70%	sage/brush	78		994
D	21.24	30%	sage/brush	78		1052
TOTAL	69.9	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.50

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

'N: 1466.0003

3y: BS

Watershed Area: B3

Measured:	47.74	acres
	0.08	sq. miles

Watershed Slope:

Length=	3200	ft
Lc =	1700	ft
Elev. Low	5025	ft
Elev. high	5360	ft
Height=	335	ft
Slope=	10.47%	
Slope=	552.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	19.06	40%	sage/brush	78		1050,1052
D	28.6	60%	sage/brush	78		994
TOTAL	47.66	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.41

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003

By: BS

Watershed Area: B4

Measured:	44.60	acres
	0.07	sq. miles

Watershed Slope:

Length=	3060	ft
Lc =	1480	ft
Elev. Low	4900	ft
Elev. high	5200	ft
Height=	300	ft
Slope=	9.80%	
Slope=	517.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	44.6	100%	sage/brush	78		994
TOTAL	44.6	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.39

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B5

Measured:	27.02	acres
	0.04	sq. miles

Watershed Slope:

Length=	1900	ft
Lc =	700	ft
Elev. Low	5150	ft
Elev. high	5375	ft
Height=	225	ft
Slope=	11.84%	
Slope=	625.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	6.8	25%	sage/brush	58		551
D	20.22	75%	sage/brush	78		994
TOTAL	27.02	100%			**73**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.25

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

IN: 1466.0003
By: BS

Watershed Area: B6

Measured:	22.00	acres
	0.04	sq. miles

Watershed Slope:

Length=	2700	ft
Lc =	1000	ft
Elev. Low	5200	ft
Elev. high	5700	ft
Height=	500	ft
Slope=	18.52%	
Slope=	977.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	7.92	36%	sage/brush	78		994
D	14.08	64%	sage/brush	78		1051
TOTAL	22	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.30

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
'N: 1466.0003
By: BS

Watershed Area: B7

Measured:	32.90	acres
	0.05	sq. miles

Watershed Slope:

Length=	3400	ft
Lc =	1600	ft
Elev. Low	4975	ft
Elev. high	5275	ft
Height=	300	ft
Slope=	8.82%	
Slope=	465.9	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	32.9	100%	sage/brush	78		994
TOTAL	32.9	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.42

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B8

Measured:	134.50	acres
	0.22	sq. miles

Watershed Slope:

Length=	4440	ft
Lc =	2050	ft
Elev. Low	5275	ft
Elev. high	6200	ft
Height=	925	ft
Slope=	20.83%	
Slope=	1,100.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	15.3	11%	sage/brush/outcrop	79		982
C	30.06	22%	sage/brush	73		892
D	55.84	42%	sage/brush	79		892
D	33.3	25%	sage/brush	79		994,1051
TOTAL	134.5	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

N: 1466.0003

By: BS

Watershed Area: B9

Measured:	54.40	acres
	0.09	sq. miles

Watershed Slope:

Length=	3680	ft
Lc =	1400	ft
Elev. Low	5200	ft
Elev. high	5875	ft
Height=	675	ft
Slope=	18.34%	
Slope=	968.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	8.2	15%	sage/brush/outcrop	78		982
C	2.15	4%	sage/brush	72		892
D	25.9	48%	sage/brush	78		1051
D	18.15	33%	sage/brush	78		994,892
TOTAL	54.4	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.37

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

N: 1466.0003

By: BS

Watershed Area: B10

Measured:	79.70	acres
	0.13	sq. miles

Watershed Slope:

Length=	4340	ft
Lc =	2480	ft
Elev. Low	4975	ft
Elev. high	5375	ft
Height=	400	ft
Slope=	9.22%	
Slope=	486.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	12.11	15%	sage/brush/outcrop	78		982
B	13.9	17%	sage/brush	58		551
D	53.6	67%	sage/brush	78		994
TOTAL	79.61	100%			**75**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.52

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B11

Measured:	52.50	acres
	0.08	sq. miles

Watershed Slope:

Length=	3300	ft
Lc =	1800	ft
Elev. Low	5275	ft
Elev. high	5800	ft
Height=	525	ft
Slope=	15.91%	
Slope=	840.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	33.52	64%	sage/brush/outcrop	78		982
C	17.4	33%	sage/brush	72		880
D	1.57	3%	sage/brush	78		1051,994
TOTAL	52.49	100%			76	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.39

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: B12

Measured:	223.00	acres
	0.36	sq. miles

Watershed Slope:

Length=	4700	ft
Lc =	2030	ft
Elev. Low	5575	ft
Elev. high	6680	ft
Height=	1105	ft
Slope=	23.51%	
Slope=	1,241.4	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	31	14%	sage/brush/outcrop	82		982
C	4.37	2%	sage/brush	76		892
C	112.1	50%	sage/brush	76		880
D	75.53	34%	sage/brush	82		496,892
TOTAL	223	100%			**79**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B13

Measured:	153.60	acres
	0.25	sq. miles

Watershed Slope:

Length=	5930	ft
Lc =	1840	ft
Elev. Low	6240	ft
Elev. high	7720	ft
Height=	1480	ft
Slope=	24.96%	
Slope=	1,317.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	114.5	75%	sage/brush/outcrop	66		1181
C	13.68	9%	sage/brush	79		496
D	25.41	17%	sage/brush	84		496
TOTAL	153.59	100%			70	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.45

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION

JN: 1466.0003

By: BS

Watershed Area: B14

Measured:	63.05	acres
	0.10	sq. miles

Watershed Slope:

Length=	3560	ft
Lc =	1690	ft
Elev. Low	5150	ft
Elev. high	5875	ft
Height=	725	ft
Slope=	20.37%	
Slope=	1,075.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	1.6	3%	sage/brush/outcrop	68		551
D	17.11	27%	sage/brush/outcrop	78		994,892
C	0.76	1%	sage/brush	72		892
D	43.58	69%	sage/brush	78		1051,1050
TOTAL	63.05	100%			77	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.38

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

IN: 1466.0003

by: BS

Watershed Area: B15

Measured:	23.90	acres
	0.04	sq. miles

Watershed Slope:

Length=	2300	ft
Lc =	1096	ft
Elev. Low	5025	ft
Elev. high	5175	ft
Height=	150	ft
Slope=	6.52%	
Slope=	344.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	9.31	39%	sage/brush/outcrop	58		551
D	14.58	61%	sage/brush/outcrop	78		994
TOTAL	23.89	100%			**70**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.34

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B16

Measured:	44.51	acres
	0.07	sq. miles

Watershed Slope:

Length=	2300	ft
Lc =	1000	ft
Elev. Low	5075	ft
Elev. high	5425	ft
Height=	350	ft
Slope=	15.22%	
Slope=	803.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	10.7	24%	sage/brush/outcrop	78		1050
D	33.79	76%	sage/brush/outcrop	78		994
TOTAL	44.49	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.29

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
By: BS

Watershed Area: B17

Measured:	264.70	acres
	0.42	sq. miles

Watershed Slope:

Length=	8000	ft
Lc =	2800	ft
Elev. Low	6100	ft
Elev. high	7880	ft
Height=	1780	ft
Slope=	22.25%	
Slope=	1,174.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	41.19	16%	sage/brush	79		1410
C	35.31	13%	sage/brush	79		1410
D	41.19	16%	sage/brush	84		1410
B	93.4	35%	sage/brush	66		1181
C	26.8	10%	sage/brush	79		496
D	26.8	10%	sage/brush	84		496
TOTAL	264.69	100%			76	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.58

SOMERSETT
HYDROLOGIC ANALYSIS

EXISTING CONDITION
JN: 1466.0003
By: BS

Watershed Area: **C1**

Measured:	46.30	acres
	0.07	sq. miles

Watershed Slope:

Length=	2600	ft
Lc =	1000	ft
Elev. Low	4900	ft
Elev. high	5300	ft
Height=	400	ft
Slope=	15.38%	
Slope=	812.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	46.30	100%	sage/brush- fair	78		994,191,1052

TOTAL	46.30	100%		78

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.30

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
JN: 1466.0003
By: BS

Watershed Area: C2

Measured:	109.10	acres
	0.17	sq. miles

Watershed Slope:

Length=	2688	ft
Lc =	1620	ft
Elev. Low	4975	ft
Elev. high	5100	ft
Height=	125	ft
Slope=	4.65%	
Slope=	245.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	54.10	30%	sage/brush	78		994
D	46.90	26%	sage/brush	78		191
D	81.10	45%	sage/brush	78		1052
TOTAL	182.10	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

'N: 1466.0003
.y: BS
12-24-97

Watershed Area: **C3**

Measured:	138.30	acres
	0.22	sq. miles

Watershed Slope:

Length=	4410	ft
Lc =	2040	ft
Elev. Low	4975	ft
Elev. high	5275	ft
Height=	300	ft
Slope=	6.80%	
Slope=	359.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	99.68	71%	sage/brush	78		994
D	21.20	15%	sage/brush	78		683
C	19.10	14%	sage/brush	72		251,252
OTAL	139.98	100%			77	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.52

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION

N: 1466.0003

By: BS

Watershed Area: C4

Watershed Slope:

Measured:	76.70	acres	Length=	3490	ft
	0.12	sq. miles	Lc =	1620	ft
			Elev. Low	5050	ft
			Elev. high	5325	ft
			Height=	275	ft
			Slope=	7.88%	
			Slope=	416.0	ft/mile
			K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	31.70	41%	sage/brush	58		551
D	37.00	48%	sage/brush	78		994
C	8.00	10%	sage/brush	72		252
TOTAL	76.70	100%			69	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: C5

Measured:	97.80	acres
	0.16	sq. miles

Watershed Slope:

Length=	4250	ft
Lc =	2100	ft
Elev. Low	5200	ft
Elev. high	5575	ft
Height=	375	ft
Slope=	8.82%	
Slope=	465.9	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	13.00	13%	sage/brush	73		251
D	84.80	87%	sage/brush	79		994,901
TOTAL	97.80	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.50

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
JN: 1466.0003
Jy: BS

Watershed Area: C6

Measured:	81.90	acres
	0.13	sq. miles

Watershed Slope:

Length=	3400	ft
Lc =	1830	ft
Elev. Low	5250	ft
Elev. high	5650	ft
Height=	400	ft
Slope=	11.76%	
Slope=	621.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	14.10	17%	sage/brush	61		551
C	14.50	18%	sage/brusl sage/brush	73		252
D	45.30	55%	sage/brusl sage/brush	79		994
D	8.00	10%	sage/brusl sage/brush	79		880,892
TOTAL	81.90	100%			**75**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.42

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
dy: BS

Watershed Area: C7

Measured	202.69	acres
	0.32	sq. miles

Watershed Slope:

Length=	6100	ft
Lc =	2700	ft
Elev. Low	5440	ft
Elev. high	6480	ft
Height=	1040	ft
Slope=	17.05%	
Slope=	900.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	24.60	12%	sage/brush	79		880,496
C	49.24	24%	sage/brush	79		892
D	113.95	56%	sage/brush	84		982,901,892
D	14.90	7%	sage/brush	84		350,994
TOTAL	202.69	100%			**82**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.54

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: C8

Measured	152.30	acres
	0.24	sq. miles

Watershed Slope:

Length=	4830	ft
Lc =	1950	ft
Elev. Low	5450	ft
Elev. high	6520	ft
Height=	1070	ft
Slope=	22.15%	
Slope=	1,169.7	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	26.80	18%	sage/brush	83		892
C	125.50	82%	sage/brush/outcrops	79		496,880
TOTAL	152.30	100%			**80**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: C9

Measured:	73.40	acres
	0.12	sq. miles

Watershed Slope:

Length=	3595	ft
Lc =	1700	ft
Elev. Low	5175	ft
Elev. high	5460	ft
Height=	285	ft
Slope=	7.93%	
Slope=	418.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	27.10	37%	sage/brush	79		994,683
C	46.30	63%	sage/brush	73		251,252
TOTAL	73.40	100%			75	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.45

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION
N: 1466.0003
By: BS

Watershed Area: C10

Measured:	421.10	acres
	0.67	sq. miles

Watershed Slope:

Length=	9400	ft
Lc =	5500	ft
Elev. Low	6800	ft
Elev. high	8266	ft
Height=	1466	ft
Slope=	15.60%	
Slope=	823.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	43.00	10%	sage/brush	79		1411
C	245.76	58%	sage/brush	79		1410
D	132.34	31%	sage/brush	84		1410
TOTAL	421.10	100%			**81**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.81

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION
IN: 1466.0003
3y: BS

Watershed Area: C11

Measured:	215.00	acres
	0.34	sq. miles

Watershed Slope:

Length=	4700	ft
Lc =	2200	ft
Elev. Low	6040	ft
Elev. high	7400	ft
Height=	1360	ft
Slope=	28.94%	
Slope=	1,527.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	20.50	10%	sage/brush	65		1410
C	20.50	10%	sage/brush	79		1410
C	33.70	16%	sage/brush	79		496
D	62.60	29%	sage/brush	84		496
C	16.00	7%	sage/brush	79		1411
D	40.10	19%	sage/brush	84		892
C	21.60	10%	sage/brush	79		892
TOTAL	215.00	100%			**80**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION
JN: 1466.0003
By: BS
12-24-97

Watershed Area: D1

Watershed Slope:

Measured:	140.20	acres	Length=	4500	ft
	0.22	sq. miles	Lc =	1400	ft
			Elev. Low	4725	ft
			Elev. high	5280	ft
			Height=	555	ft
			Slope=	12.33%	
			Slope=	651.2	ft/mile
			K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	110.67	79%	sage/brush	72		260
D	29.52	21%	sage/brush	79		994,1052,191

TOTAL	140.19	100%	**73**

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.42

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDTITION

JN: 1466.0003

By: BS

Watershed Area: E1

Measured=	99.06	acres
	0.15	sq. miles

Watershed Slope:

Length=	4290	ft
Lc =	2470	ft
Elev. Low	4700	ft
Elev. high	4980	ft
Height=	280	ft
Slope=	6.53%	
Slope=	344.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	18.00	18%	1/3 ac Residential	72		620,480
D	4.00	4%	1/3 ac Residential	86		991
D	63.06	64%	sage/grass	78		683,994
B	14.00	14%	1/3 ac Residential	72		480,553
TOTAL	99.06	100%			76	

Lag Time Estimate: (Washoe County HCDDM Criteria)

Ave Vel=	2.2	ft/sec
Tt=	0.54	hours
Lag Time=	0.33	
TLAG=	0.55	

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDTITION

IN: 1466.0003

y: BS

Watershed Area: E2

Measured=	105.80	acres
	0.17	sq. miles

Watershed Slope:

Length=	5100	ft
Lc =	2000	ft
Elev. Low	4875	ft
Elev. high	5200	ft
Height=	325	ft
Slope=	6.37%	
Slope=	336.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	82.25	78%	sage/brush	58		974
D	23.55	22%	sage/brush	78		730,191,615
OTAL	105.8	100%			62	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.55

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDTITION

IN: 1466.0003

By: BS

Watershed Area: E3

Measured=	76.20	acres
	0.12	sq. miles

Watershed Slope:

Length=	3800	ft
Lc =	2053	ft
Elev. Low	4700	ft
Elev. high	4860	ft
Height=	160	ft
Slope=	4.21%	
Slope=	222.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	38.5	51%	1/3 ac Residential	72		551,553
D	37.7	49%	sage/brush	78		994,360
TOTAL	76.2	100%			**75**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.54

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDTITION

JN: 1466.0003
By: BS

Watershed Area: E4

Measured=	270.80	acres
	0.43	sq. miles

Watershed Slope:

Length=	8000	ft
Lc =	5000	ft
Elev. Low	4860	ft
Elev. high	5250	ft
Height=	390	ft
Slope=	4.88%	
Slope=	257.4	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	40.10	15%	sage/brush	58		670,974
D	91.05	34%	sage/brush	79		650,190
D	139.6	52%	sage/brush	79		994,1050
TOTAL	270.75	100%			76	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.90

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDTITION

IN: 1466.0003

By: BS

Watershed Area: E5

Measured=	79.40	acres
	0.13	sq. miles

Watershed Slope:

Length=	3500	ft
Lc =	1900	ft
Elev. Low	5075	ft
Elev. high	5425	ft
Height=	350	ft
Slope=	10.00%	
Slope=	528.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	8.30	10%	sage/brush	58		974
D	39.80	50%	sage/brush	79		994,1054,191
D	31.3	39%	sage/brush	79		651,731,730
TOTAL	79.4	100%			**77**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.44

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDTITION

JN: 1466.0003

By: BS

Watershed Area: E6

Measured=	28.70	acres
	0.05	sq. miles

Watershed Slope:

Length=	1690	ft
Lc =	850	ft
Elev. Low	5100	ft
Elev. high	5240	ft
Height=	140	ft
Slope=	8.28%	
Slope=	437.4	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	19.33	67%	sage/brush	58		974
D	9.37	33%	sage/brush	79		191,730,1054
TOTAL	28.7	100%			**65**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.27

SOMERSETT

HYDROLOGIC ANALYSIS

EXISTING CONDITION

JN: 1466.0003

By: BS

Watershed Area: F1

Measured:	126.00	acres
	0.20	sq. miles

Watershed Slope:

Length=	5000	ft
Lc =	2500	ft
Elev. Low	4750	ft
Elev. high	5290	ft
Height=	540	ft
Slope=	10.80%	
Slope=	570.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	58.70	47%	sage/brush	72		260
D	67.30	53%	sage/brush	79		1052,994
TOTAL	126	100%			**76**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.54

SOMERSETT
HYDROLOGIC ANALYSIS
EXISTING CONDITION

JN: 1466.0003
by: BS

Watershed Area: F2

Measured:	86.50	acres
	0.14	sq. miles

Watershed Slope:

Length=	3700	ft
Lc =	2282	ft
Elev. Low	4770	ft
Elev. high	5220	ft
Height=	450	ft
Slope=	12.16%	
Slope=	642.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	57.00	66%	sage/brush	79		1052
D	29.46	34%	sage/brush	79		994
TOTAL	86.46	100%			79	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.46

APPENDIX B - WATERSHED DATA

Proposed Condition Watershed Spreadsheets

WRC NEVADA, INC.

April 17, 1998

VERSION: 12-02-1996

STANDARD FORM 2

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

DEVELOPMENT SOMERSETT STORMWATER MASTER PLAN PROPOSED CONDITIONS

CALCULATED BY SKG/MEF **DATE** May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG	R	AREA Ac	LENGTH FT	SLOPE %	ti Min.	LENGTH FT	SLOPE %	VEL. FPS	tt Min.	tc Min.	TOTAL LENGTH FT	tc=(L/180)+10 Min.	Min.	LAG ESTIMATE hr (.6)tc*60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
A1	0.6132		500	8	9.8	4200	*	3	23.3	33.1	4700	36	33	0.33
A2	0.6264		500	10	8.8	3400	*	3	18.9	27.7	3900	32	28	0.28
A3	0.666		500	8	8.7	1900	*	3	10.6	19.3	2400	23	19	0.19
A4	0.4812		500	24	8.6	1690	*	2.5	11.3	19.9	2190	22	20	0.20
A5	0.7584		100	2	4.9	3585	*	4.5	13.3	18.2	3685	30	18	0.18
A6a	0.6396		500	40	5.4	1360	*	2.5	9.1	14.5	1860	20	14	0.14
A6b	0.6792		500	32	5.3	2530	*	4.5	9.4	14.7	3030	27	15	0.15
A7	0.6792		500	16	6.7	5200	*	3.5	24.8	31.5	5700	42	31	0.31
A8a	0.6528		500	40	5.3	1700	*	2	14.2	19.4	2200	22	19	0.19
A8b	0.6132		100	2	7.0	3874	*	4.5	14.3	21.3	3974	32	21	0.21
A9	0.6396		500	12	8.1	7500	*	5	25.0	33.1	8000	54	33	0.33
A10	0.6528		500	12	7.9	5960	*	4.5	22.1	29.9	6460	46	30	0.30
A11	0.6		500	20	7.4	3900	*	2.5	26.0	33.4	4400	34	33	0.33
A12	0.6396		500	10	8.6	1950	*	2.5	13.0	21.6	2450	24	22	0.22
A13	0.6528		500	32	5.7	4600	*	3.5	21.9	27.6	5100	38	28	0.28
A14	0.5736		1000	16	11.9	6170	*	5	20.6	32.5	7170	50	32	0.32
A15	0.6396		1000	40	7.7	4480	*	3.5	21.3	29.0	5480	40	29	0.29

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

VERSION: 12-02-1996

STANDARD FORM 2

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

DEVELOPMENT SOMERSETT STORMWATER MASTER PLAN PROPOSED CONDITIONS

CALCULATED BY SKG/MEF **DATE** May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG	R	AREA Ac	LENGTH FT	SLOPE %	ti Min.	LENGTH FT	SLOPE %	VEL. FPS	tt Min.	tc Min.	TOTAL LENGTH FT	tc=(L/180)+10 Min.	Min.	LAG ESTIMATE hr (.6)tc*60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
B1	0.7056		500	24	5.5	1360	*	2.5	9.1	14.6	1860	20	15	0.15
B2a	0.7452		100	2	5.1	1927	*	4.5	7.1	12.2	2027	21	12	0.12
B2b	0.7452		500	24	5.0	2700	*	4.5	10.0	15.0	3200	28	15	0.15
B2c	0.7188		500	10	7.1	1790	*	2.5	11.9	19.1	2290	23	19	0.19
B3	0.7188		500	32	4.8	1900	*	2.5	12.7	17.5	2400	23	17	0.17
B4	0.732		50	30	1.5	1900	*	2.5	12.7	14.2	1950	21	14	0.14
B5	0.666		500	12	7.6	2330	*	2.5	15.5	23.2	2830	26	23	0.23
B6	0.6396		500	40	5.4	1760	*	2	14.7	20.1	2260	23	20	0.20
B7	0.6396		500	24	6.4	1805	*	2	15.0	21.5	2305	23	21	0.21
B8a	0.6132		500	32	6.2	3940	*	4	16.4	22.6	4440	35	23	0.23
B8b	0.7188		500	10	7.1	1030	*	2	8.6	15.7	1530	19	16	0.16
B9	0.6528		500	32	5.7	3112	*	2.5	20.7	26.4	3612	30	26	0.26
B10a	0.7188		100	2	5.4	2760	*	2.5	18.4	23.8	2860	26	24	0.24
B10b	0.7584		500	16	5.5	575	*	2	4.8	10.2	1075	16	10	0.10
B10c	0.7584		500	10	6.4	450	*	2	3.8	10.1	950	15	10	0.10
B11	0.6132		500	32	6.2	2700	*	2.5	18.0	24.2	3200	28	24	0.24
B12	0.6528		500	32	5.7	4200	*	3.5	20.0	25.7	4700	36	26	0.26
B13	0.534		500	40	6.7	5430	*	3.5	25.9	32.5	5930	43	33	0.33
B14	0.6396		500	32	5.8	2488	*	2.5	16.6	22.4	2988	27	22	0.22
B15	0.534		500	10	10.6	1800	*	2	15.0	25.6	2300	23	23	0.23
B16	0.7452		500	32	4.5	2300	*	2	19.2	23.7	2800	26	24	0.24
B17	0.6132		500	24	6.8	7500	*	5	25.0	31.8	8000	54	32	0.32

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

VERSION: 12-02-1998

STANDARD FORM 2

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

DEVELOPMENT SOMERSETT STORMWATER MASTER PLAN PROPOSED CONDITIONS

CALCULATED BY SKG/MEF **DATE** May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG	R	AREA Ac	LENGTH FT	SLOPE %	ti Min	LENGTH FT	SLOPE %	VEL. FPS	tt Min.	tc Min.	TOTAL LENGTH FT	tc=(L/180)+10 Min.	Min.	LAG ESTIMATE hr (.6)tc*60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
C1	0.6528		500	24	6.2	2100	*	2	17.5	23.7	2600	24	24	0.24
C2	0.6396		500	12	8.1	2188	*	2	18.2	26.3	2688	25	25	0.25
C3a	0.6132		500	6	9.8	3100	*	3	17.2	27.0	3600	30	27	0.27
C3b	0.6396		500	6	9.3	3150	*	2.5	21.0	30.3	3650	30	30	0.30
C4a	0.6528		100	2	6.4	3800	*	4.5	14.1	20.5	3900	32	20	0.20
C4b	0.6264		100	16	3.4	2250	*	2.5	15.0	18.4	2350	23	18	0.18
C5	0.6396		400	40	4.8	3950	*	3	21.9	26.8	4350	34	27	0.27
C6	0.6264		500	40	5.6	2900	*	2.5	19.3	24.9	3400	29	25	0.25
C7	0.6924		500	40	4.8	5600	*	4.5	20.7	25.5	6100	44	26	0.26
C8	0.666		500	40	5.1	4330	*	4	18.0	23.1	4830	37	23	0.23
C9	0.6		500	8	10.1	3095	*	3	17.2	27.3	3595	30	27	0.27
C10	0.6792		500	22	6.0	8900	*	5.5	27.0	33.0	9400	62	33	0.33
C11	0.666		500	40	5.1	4200	*	5	14.0	19.1	4700	36	19	0.19
D1	0.5736		500	24	7.3	4000	*	4	16.7	24.0	4500	35	24	0.24
E1	0.6132		500	8	9.8	3790	*	3	21.1	30.9	4290	34	31	0.31
E2	0.4284		500	10	12.5	4600	*	3	25.6	38.1	5100	38	38	0.38
E3	0.6		500	12	8.8	3300	*	3	18.3	27.1	3800	31	27	0.27
E4	0.666		500	20	6.4	7450	*	4.5	27.6	34.0	7950	54	34	0.34
E5a	0.8244		100	2	3.9	1655	*	4.5	6.1	10.1	1755	20	10	0.10
E5b	0.8112		100	2	4.1	3400	*	4.5	12.6	16.7	3500	29	17	0.17
E6a	0.7716		100	2	4.7	1250	*	4.5	4.6	9.3	1350	18	9	0.09
E6b	0.7584		200	10	4.0	490	*	4.5	1.8	5.9	690	14	6	0.06
F1a	0.6924		500	10	7.6	1500	*	4.5	5.8	13.2	2000	21	13	0.13
F1b	0.6528		500	10	8.4	2100	*	3	11.7	20.0	2600	24	20	0.20
F2	0.6528		500	16	7.1	3200	*	3	17.8	24.9	3700	31	25	0.25

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

VERSION: 12-02-1998

WASHOE COUNTY

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

DEVELOPMENT SOMERSETT STORMWATER MASTER PLAN PROPOSED CONDITIONS

CALCULATED BY SKG/MEF **DATE** May 6, 1998

SUB-BASIN DATA			INITIAL/OVERLAND TIME (ti)			TRAVEL TIME TIME (tt)				tc (tc+tt)	tc URBANIZED BASINS CHECK		FINAL tc	REMARKS
DESIG	R	AREA Ac	LENGTH FT	SLOPE %	ti Min.	LENGTH FT	SLOPE %	VEL. FPS	tt Min.	tc Min.	TOTAL LENGTH FT	tc=(L/180)+10 Min.	Min.	LAG ESTIMATE hr (.6)tc*60
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
B1-P1	0 6924		500	16	6 5	900	*	3	5.0	11.5	1400	18	12	0.12
B2b-P1	0 6396		500	20	6 8	2150	*	2.5	14.3	21.2	2650	25	21	0.21
B2c-P1	0 7188		500	8	7 7	1750	*	4.5	6.5	14.2	2250	23	14	0.14
B3-P1	0 6396		500	16	7 4	2000	*	2.5	13.3	20.7	2500	24	21	0.21
B2a-P2	0 6396		500	16	7 4	1800	*	2.5	12.0	19.4	2300	23	19	0.19
B3-P2	0 6528		500	16	7 1	2000	*	2.5	13.3	20.5	2500	24	20	0.20
A5a-P3	0 7716		100	2	4 7	2500	*	4.5	9.3	14.0	2600	24	14	0.14
A8-P3	0 6000		500	12	6 8	4300	*	3	23.9	32.7	4800	37	33	0.33
A11-P4	0 5868		500	32	6 5	3900	*	2.5	26.0	32.5	4400	34	33	0.33

ti = (1.8 (1.1 - R) L ^1/2) / S^1/3

STANDARD FORM 2

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

'N: 1466.0003

y: BS

Watershed Area: A2

Measured=	126.31	acres
	0.20	sq. miles

Watershed Slope:

Length=	3900	ft
Lc =	2050	ft
Elev. Low	4875	ft
Elev. high	5055	ft
Height=	180	ft
Slope=	4.62%	
Slope=	243.7	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	78.23	62%	sage/brush	78		1050,1052,994
D	44.41	35%	sage/brush	78		683,615,650
B	3.67	3%	sage/brush	59		553
TOTAL	126.31	100%			77	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.53

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003

by: BS

Watershed Area: A3

Measured=	85.07	acres
	0.13	sq. miles

Watershed Slope:

Length=	2400	ft
Lc =	1090	ft
Elev. Low	5050	ft
Elev. high	5225	ft
Height=	175	ft
Slope=	7.29%	
Slope=	385.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	75.57	89%	Shrub brush	78		1050,1052
	9.50	11%	Comercial/Retail	95		
TOTAL	85.07	100%			**80**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.34

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

'N: 1466.0003

y: BS

Watershed Area: A4

Measured=	25.90	acres
	0.04	sq. miles

Watershed Slope:

Length=	2190	ft
Lc =	1000	ft
Elev. Low	5050	ft
Elev. high	5200	ft
Height=	150	ft
Slope=	6.85%	
Slope=	361.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	17.40	67%	shrub/brush	58		553
B	4.00	15%	1/4 ac residential	87		553
D	4.50	17%	shrub/brush	78		1050
TOTAL	25.90	100%			**66**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.33

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

'N: 1466.0003

:y: BS

Watershed Area: A5

Measured=	82.60	acres
	0.13	sq. miles

Watershed Slope:

Length=	3685	ft
Lc =	1500	ft
Elev. Low	5200	ft
Elev. high	5435	ft
Height=	235	ft
Slope=	6.38%	
Slope=	336.7	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	16.52	20%	Comercial/Retail	92		553,673
D	20.65	25%	shrub/brush	78		1050
D	33.04	40%	1/4 ac residential	87		994
D	12.39	15%	Comercial/Retail	95		994
TOTAL	82.60	100%			**87**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.45

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

'N: 1466.0003
Jy: BS
1-2-97

Watershed Area: A6a

Measured=	37.30	acres
	0.06	sq. miles

Watershed Slope:

Length=	1860	ft
Lc =	670	ft
Elev. Low	5425	ft
Elev. high	5900	ft
Height=	475	ft
Slope=	25.54%	
Slope=	1,348.4	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	37.30	100%	shrub/brush	78		1051,1050
TOTAL	37.30	100%		78		

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.22

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
by: BS

Watershed Area: A6b

Measured=	32.50	acres
	0.05	sq. miles

Watershed Slope:

Length=	3030	ft
Lc =	1530	ft
Elev. Low	5240	ft
Elev. high	5700	ft
Height=	460	ft
Slope=	15.18%	
Slope=	801.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	3.25	10%	1/4 ac residential	75		553
D	13.00	40%	1/4 ac residential	87		1050,1051
D	16.25	50%	shrub/brush	78		1051,1052
TOTAL	32.50	100%			**81**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.37

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

IN: 1466.0003

y: BS

Watershed Area: A8a

Measured=	35.10	acres
	0.05	sq. miles

Watershed Slope:

Length=	2200	ft
Lc =	982	ft
Elev. Low	5285	ft
Elev. high	5450	ft
Height=	165	ft
Slope=	7.50%	
Slope=	396.0	ft/mile
K=	0.087	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	29.84	85%	shrub/brush	78		222
D	5.27	15%	1/4 ac residential	87		1050
TOTAL	35.10	100%			**79**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.31

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003

y: BS

Watershed Area: A8b

Measured=	91.40	acres
	0.14	sq. miles

Watershed Slope:

Length=	3974	ft
Lc =	1900	ft
Elev. Low	5050	ft
Elev. high	5250	ft
Height=	200	ft
Slope=	5.03%	
Slope=	265.7	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	82.26	90%	1/4 ac residential	75		673,553
D	9.14	10%	1/4 ac residential	87		1054,1050,190,61
TOTAL	91.40	100%			76	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
- K=Basin Channel Roughness Factor
- L=Length of Longest Water Course (miles)
- Lc= Length to Basin Centorid (miles)
- S=Average Watercourse Slope (ft/mile)

TLAG= 0.51

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
y: BS

Watershed Area: A9

Measured=	239.11	acres
	0.37	sq. miles

Watershed Slope:

Length=	8000	ft
Lc =	4600	ft
Elev. Low	5325	ft
Elev. high	6800	ft
Height=	1475	ft
Slope=	18.44%	
Slope=	973.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	67.89	28%	shrub/brush	74		892
D	126.08	53%	shrub/brush	80		892
D	45.14	19%	shrub/brush	80		222,1051
TOTAL	239.11	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.70

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
y: BS

Watershed Area: A10

Measured=	180.40	acres
	0.28	sq. miles

Watershed Slope:

Length=	6460	ft
Lc =	3000	ft
Elev. Low	5325	ft
Elev. high	6650	ft
Height=	1325	ft
Slope=	20.51%	
Slope=	1,083.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	98.39	55%	shrub/brush	80		1051
C	28.70	16%	shrub/brush	73		892
D	53.31	30%	shrub/brush	80		892
OTAL	180.40	100%			79	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.56

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003

by: BS

Watershed Area: A11

Measured=	68.34	acres
	0.11	sq. miles

Watershed Slope:

Length=	4400	ft
Lc =	2000	ft
Elev. Low	5025	ft
Elev. high	5425	ft
Height=	400	ft
Slope=	9.09%	
Slope=	480.0	ft/mile
K=	0.087	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	27.33	40%	shrub/brush	58		671
D	23.92	35%	1/4 ac residential	87		683,1050
D	17.08	25%	1/4 ac residential	87		190,615,650
TOTAL	68.33	100%			**75**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.47

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

'N: 1466.0003
by: BS

Watershed Area: A12

Measured=	36.10	acres
	0.06	sq. miles

Watershed Slope:

Length=	2450	ft
Lc =	1300	ft
Elev. Low	5200	ft
Elev. high	5650	ft
Height=	450	ft
Slope=	18.37%	
Slope=	969.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	18.05	50%	shrub/brush	78		222
D	18.05	50%	shrub/brush	78		190,1050
TOTAL	36.10	100%				**78**

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.31

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
by: BS

Watershed Area: A13

Measured=	122.35	acres
	0.19	sq. miles

Watershed Slope:

Length=	5100	ft
Lc =	2450	ft
Elev. Low	5215	ft
Elev. high	5900	ft
Height=	685	ft
Slope=	13.43%	
Slope=	709.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	7.10	6%	sage/grass	78		1050,1054
D	100.00	82%	shrub/brush	78		615,190,222
D	15.25	12%	1 acre Residential	84		615,190,222
TOTAL	122.35	100%			79	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.52

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

IN: 1466.0003

y: BS

12-24-97

Watershed Area: B1

Watershed Slope:

Measured:	33.73	acres	Length=	1860	ft
	0.05	sq. miles	Lc =	930	ft
			Elev. Low	4900	ft
			Elev. high	5150	ft
			Height=	250	ft
			Slope=	13.44%	
			Slope=	709.7	ft/mile
			K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	6.75	20%	sage/brush-	75		260
D	15.18	45%	1/4 ac residential	87		994
D	11.8	35%	sage/brush	82		994
TOTAL	33.73	100%			83	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.27

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
by: BS

Watershed Area: B2a

Measured:	33.45	acres
	0.05	sq. miles

Watershed Slope:

Length=	2027	ft
Lc =	1000	ft
Elev. Low	5225	ft
Elev. high	5300	ft
Height=	75	ft
Slope=	3.70%	
Slope=	195.4	ft/mile
K=	0.085	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	26.76	80%	1/4 ac residential	87		994,1050
D	6.7	20%	irrigated,park	80		1050,1052
TOTAL	33.46	100%			86	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.33

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

JN: 1466.0003

Jy: BS

Watershed Area: B2b

Watershed Slope:

Measured:	80.35	acres	Length=	3200	ft
	0.13	sq. miles	Lc =	1450	ft
			Elev. Low	5025	ft
			Elev. high	5275	ft
			Height=	250	ft
			Slope=	7.81%	
			Slope=	412.5	ft/mile
			K=	0.085	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	59.69	74%	1/4 ac residential	87		994
D	8.035	10%	irrigated,common area	80		1052
D	8.00	10%	1/4 ac residential	87		1052
C	4.59	6%	1/4 ac residential	83		260
TOTAL	80.32	100%			**86**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.38

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003

By: BS

Watershed Area: **B2c**

Measured:	37.89	acres
	0.06	sq. miles

Watershed Slope:

Length=	2290	ft
Lc =	1140	ft
Elev. Low	4950	ft
Elev. high	5075	ft
Height=	125	ft
Slope=	5.46%	
Slope=	288.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	22.73	60%	1/4 ac residential	87		994
D	15.16	40%	irrigated,park	80		994
TOTAL	37.89	100%			84	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.36

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003
Jy: BS

Watershed Area: B3

Measured	28.50	acres
	0.046	sq. miles

Watershed Slope:

Length=	2400	ft
Lc =	1000	ft
Elev. Low	5050	ft
Elev. high	5400	ft
Height=	350	ft
Slope=	14.58%	
Slope=	770.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	16.23	50%	1/4 ac residential	87		1050,1052
D	16.23	50%	irrigated common area	80		994
TOTAL	32.46	100%			**84**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.30

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
by: BS

Watershed Area: B4

Measured:	23.06	acres
	0.04	sq. miles

Watershed Slope:

Length=	2400	ft
Lc =	850	ft
Elev. Low	5000	ft
Elev. high	5200	ft
Height=	200	ft
Slope=	8.33%	
Slope=	440.0	ft/mile
K=	0.09	
	0.085	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	18.44	80%	1/4 ac residential	87		994
D	4.61	20%	sage/brush	78		994
TOTAL	23.05	100%			85	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.31

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003
y: BS

Watershed Area: B5

Measured:	49.05	acres
	0.078	sq. miles

Watershed Slope:

Length=	2830	ft
Lc =	1410	ft
Elev. Low	5050	ft
Elev. high	5275	ft
Height=	225	ft
Slope=	7.95%	
Slope=	419.8	ft/mile
K=	0.085	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	22.07	45%	1/4 ac residential	75		551
D	17.16	35%	1/4 ac residential	87		994
D	9.81	20%	sage/brush	78		994
TOTAL	49.04	100%			**80**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.37

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003

y: BS

Watershed Area: B6

Measured:	18.40	acres
	0.029	sq. miles

Watershed Slope:

Length=	2260	ft
Lc =	1130	ft
Elev. Low	5150	ft
Elev. high	5700	ft
Height=	550	ft
Slope=	24.34%	
Slope=	1,285.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	8.62	55%	sage/brush	78		994
D	7.06	45%	sage/brush	78		1051
TOTAL	15.68	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.28

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003

by: BS

Watershed Area: B7

Measured:	15.36	acres
	0.02	sq. miles

Watershed Slope:

Length=	2305	ft
Lc =	1140	ft
Elev. Low	5050	ft
Elev. high	5250	ft
Height=	200	ft
Slope=	8.68%	
Slope=	458.1	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	15.36	100%	sage/brush	78		994
TOTAL	15.36	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.33

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: B8a

Measured:	156.50	acres
	0.25	sq. miles

Watershed Slope:

Length=	4440	ft
Lc =	2050	ft
Elev. Low	5275	ft
Elev. high	6200	ft
Height=	925	ft
Slope=	20.83%	
Slope=	1,100.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	15.3	10%	sage/brush/outcrop	79		982
C	68.72	44%	sage/brush	73		892
D	41.2	26%	sage/brush	79		994
D	31.28	20%	sage/brush	79		1051
TOTAL	156.5	100%			**76**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.43

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003
y: BS

Watershed Area: B8b

Measured:	24.43	acres
	0.04	sq. miles

Watershed Slope:

Length=	1530	ft
Lc =	800	ft
Elev. Low	5200	ft
Elev. high	5325	ft
Height=	125	ft
Slope=	8.17%	
Slope=	431.4	ft/mile
K=	0.089	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	24.43	100%	1 ac residential	84		994
TOTAL	24.43	100%			84	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.26

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

'N: 1466.0003

y: BS

Watershed Area: B9

Measured:	37.84	acres
	0.06	sq. miles

Watershed Slope:

Length=	3612	ft
Lc =	1806	ft
Elev. Low	5200	ft
Elev. high	5875	ft
Height=	675	ft
Slope=	18.69%	
Slope=	986.7	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	3.7	10%	1 ac residential	78		982
C	1.3	3%	sage/brush	78		892
D	10.88	29%	sage/brush	78		1051
D	13.14	35%	sage/brush	78		994
D	8.82	23%	1/4 ac residential	83		994
TOTAL	37.84	100%			79	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.39

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: B10a

Measured:	67.60	acres
	0.11	sq. miles

Watershed Slope:

Length=	3260	ft
Lc =	1630	ft
Elev. Low	5040	ft
Elev. high	5360	ft
Height=	320	ft
Slope=	9.82%	
Slope=	518.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	20.59	30%	sage/brush/outcrop	87		982
B	17.9	26%	1/4 ac residential	75		551
D	30.1	44%	1/4 ac residential	87		994
TOTAL	68.59	100%			84	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.41

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
by: BS
4-13-98

Watershed Area: B10b

Watershed Slope:

Measured:	23.03	acres	Length=	1075	ft
	0.04	sq. miles	Lc =	475	ft
			Elev. Low	5000	ft
			Elev. high	5140	ft
			Height=	140	ft
			Slope=	13.02%	
			Slope=	687.6	ft/mile
			K=	0.087	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	23.03	100%	1/4 ac residential	87		994
TOTAL	23.03	100%		87		

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.17

SOMERSETT
HYDROLOGIC ANALYSIS

DEVELOPED CONDITION
IN: 1466.0003
y: BS
4-13-98

Watershed Area: B10c

Measured:	8.09	acres
	0.01	sq. miles

Watershed Slope:

Length=	950	ft
Lc =	475	ft
Elev. Low	4950	ft
Elev. high	5065	ft
Height=	115	ft
Slope=	12.11%	
Slope=	639.2	ft/mile
K=	0.087	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	8.09	100%	1/4 ac residential	87		994
TOTAL	8.09	100%			**87**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.17

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

JN: 1466.0003

by: BS

Watershed Area: B11

Measured:	49.75	acres
	0.08	sq. miles

Watershed Slope:

Length=	3300	ft
Lc =	1800	ft
Elev. Low	5275	ft
Elev. high	5800	ft
Height=	525	ft
Slope=	15.91%	
Slope=	840.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	30.78	62%	sage/brush/outcrop	78		982
C	17.4	35%	sage/brush	72		880,252
D	1.57	3%	sage/brush	78		1051,994
TOTAL	49.75	100%			**76**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.39

SOMERSETT

HYDROLOGIC ANALYSIS

DEVELOPED CONDITION

'N: 1466.0003
y: BS
4-13-98

Watershed Area: B14

Watershed Slope:

Measured	56.12	acres	Length=	2988	ft
	0.09	sq. miles	Lc =	1490	ft
			Elev. Low	5275	ft
			Elev. high	5875	ft
			Height=	600	ft
			Slope=	20.08%	
			Slope=	1,060.2	ft/mile
			K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	OMPOSIT CURVE NO.	SOIL TYPE
D	12.54	22%	sage/brush	78		892, 994
D	43.58	78%	sage/brush	78		1050, 1051
.OTAL	56.12	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.34

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: B16

Measured:	58.70	acres
	0.094	sq. miles

Watershed Slope:

Length=	2800	ft
Lc =	1000	ft
Elev. Low	5080	ft
Elev. high	5425	ft
Height=	345	ft
Slope=	12.32%	
Slope=	650.6	ft/mile
K=	0.085	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	10	18%	irrigated common area	80		1050
D	44.7	82%	1/4 ac residential	87		994
TOTAL	54.7	100%			86	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.30

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

IN: 1466.0003
y: BS

Watershed Area: C1

Measured:	51.78	acres
	0.08	sq. miles

Watershed Slope:

Length=	2600	ft
Lc =	1000	ft
Elev. Low	4900	ft
Elev. high	5300	ft
Height=	400	ft
Slope=	15.38%	
Slope=	812.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	
D	47.78	92%	sage/brush- fair	78		994,191,1052
D	4.00	8%	1/4 ac residential	87		994
TOTAL	51.78	100%			**79**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.30

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: C3A

Measured:	74.34	acres
	0.12	sq. miles

Watershed Slope:

Length=	3600	ft
Lc =	1450	ft
Elev. Low	5025	ft
Elev. high	5340	ft
Height=	315	ft
Slope=	8.75%	
Slope=	462.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	51.00	69%	sage/brush	78		994
D	4.24	6%	sage/brush	78		683
C	19.10	26%	sage/brush	72		251,252
TOTAL	74.34	100%			76	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.42

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: C3B

Measured:	63.96	acres
	0.10	sq. miles

Watershed Slope:

Length=	3550	ft
Lc =	1100	ft
Elev. Low	4975	ft
Elev. high	5275	ft
Height=	300	ft
Slope=	8.45%	
Slope=	446.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	47.00	73%	sage/brush	78		994
D	16.96	27%	sage/brush	78		683
TOTAL	63.96	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.38

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: C4a

Measured:	59.50	acres
	0.10	sq. miles

Watershed Slope:

Length=	3900	ft
Lc =	1800	ft
Elev. Low	5125	ft
Elev. high	5385	ft
Height=	260	ft
Slope=	6.67%	
Slope=	352.0	ft/mile
K=	0.085	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	36.20	61%	Residential 1/4 ac.	75		551
C	3.80	6%	Residential 1/4 ac.	83		252
D	19.50	33%	Residential 1/4 ac.	87		994
TOTAL	59.50	100%			**79**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.45

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS
12-24-97

Watershed Area: C4b

Watershed Slope:

Measured:	24.60	acres	Length=	2350	ft
	0.04	sq. miles	Lc =	1050	ft
			Elev. Low	5125	ft
			Elev. high	5225	ft
			Height=	100	ft
			Slope=	4.26%	
			Slope=	224.7	ft/mile
			K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	4.30	17%	sage/brush	72		251.252
D	20.30	83%	sage/brush	78		994
TOTAL	24.60	100%			77	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.37

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: C6

Measured:	61.20	acres
	0.10	sq. miles

Watershed Slope:

Length=	3400	ft
Lc =	1830	ft
Elev. Low	5250	ft
Elev. high	5650	ft
Height=	400	ft
Slope=	11.76%	
Slope=	621.2	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	13.00	21%	sage/brush	72		252,880
D	6.80	11%	sage/brush	78		892
D	41.40	68%	sage/brush	78		994
TOTAL	61.20	100%			77	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.42

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: **E2**

Measured=	102.18	acres
	0.16	sq. miles

Watershed Slope:

Length=	5100	ft
Lc =	2000	ft
Elev. Low	4875	ft
Elev. high	5200	ft
Height=	325	ft
Slope=	6.37%	
Slope=	336.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	82.25	80%	sage/brush	58		974
D	19.93	20%	sage/brush	78		730,191,650
						994,683
TOTAL	102.18	100%				62

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.55

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: **E4**

Measured=	285.80	acres
	0.46	sq. miles

Watershed Slope:

Length=	7950	ft
Lc =	4133	ft
Elev. Low	4860	ft
Elev. high	5320	ft
Height=	460	ft
Slope=	5.79%	
Slope=	305.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	40.10	14%	sage/brush	68		670,974
D	91.05	32%	sage/brush	82		650,651,731
D	154.6	54%	sage/brush	82		994,1050,190
TOTAL	285.75	100%			80	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.82

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: **E5A**

Measured=	22.23	acres
	0.04	sq. miles

Watershed Slope:

Length=	1755	ft
Lc =	930	ft
Elev. Low	5075	ft
Elev. high	5200	ft
Height=	125	ft
Slope=	7.12%	
Slope=	376.1	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	22.23	100.00%	1/8 ac residential	92		994
TOTAL	22.23	100%			92	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.29

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: **E5B**

Measured=	57.17	acres
	0.09	sq. miles

Watershed Slope:

Length=	3500	ft
Lc =	1550	ft
Elev. Low	5140	ft
Elev. high	5320	ft
Height=	180	ft
Slope=	5.14%	
Slope=	271.5	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	8.30	15%	1/8 ac residential	85		974,671
D	17.57	31%	1/8 ac residential	92		994,1054
D	31.3	55%	1/8 ac residential	92		651,731,730
TOTAL	57.17	100%			91	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.46

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
By: BS

Watershed Area: **E6A**

Measured=	22.25	acres
	0.04	sq. miles

Watershed Slope:

Length=	1350	ft
Lc =	650	ft
Elev. Low	5120	ft
Elev. high	5240	ft
Height=	120	ft
Slope=	8.89%	
Slope=	469.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	14.23	64%	1/8 ac residential	85		671,974
D	8.02	36%	1/8 ac residential	92		191,730
TOTAL	22.25	100%			88	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.23

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: **E6B**

Measured=	6.80	acres
	0.01	sq. miles

Watershed Slope:

Length=	690	ft
Lc =	315	ft
Elev. Low	5095	ft
Elev. high	5120	ft
Height=	25	ft
Slope=	3.62%	
Slope=	191.3	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	5.10	75%	1/8 ac residential	85		974
D	1.70	25%	1/8 ac residential	92		191,730
TOTAL	6.8	100%			87	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.17

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION

JN: 1466.0003
3y: BS

Watershed Area: F1A

Measured:	49.69	acres
	0.08	sq. miles

Watershed Slope:

Length=	2000	ft
Lc =	800	ft
Elev. Low	5066	ft
Elev. high	5260	ft
Height=	194	ft
Slope=	9.70%	
Slope=	512.2	ft/mile
K=	0.087	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	19.88	40%	1/4 ac residential	87		260
D	29.81	60%	sage/brush	79		1052,994
OTAL	49.69	100%			82	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.27

SOMERSETT
HYDROLOGIC ANALYSIS
DEVELOPED CONDITION
JN: 1466.0003
By: BS

Watershed Area: F1B

Measured	67.16	acres
	0.11	sq. miles

Watershed Slope:

Length=	2600	ft
Lc =	1450	ft
Elev. Low	4750	ft
Elev. high	5185	ft
Height=	435	ft
Slope=	16.73%	
Slope=	883.4	ft/mile
K=	0.087	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	3.50	5%	1/4 ac residential	87		260
D	60.21	95%	sage/brush	79		1052,994
TOTAL	63.71	100%			79	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33

Where:
K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc= Length to Basin Centorid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.32

APPENDIX B - WATERSHED DATA

Interim Watershed Spreadsheets for Project Phasing

WRC NEVADA, INC.

April 17, 1998

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE I DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **B1**

Measured= 41.78 acres
0.07 sq. miles

Watershed Slope:

Length=	1400	ft
Lc=	600	ft
Elev. Low	4890	ft
Elev. High	5020	ft
Height=	130	ft
Slope=	9.29%	
Slope=	490.3	ft/mile
K=	0.05	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
C	10.27	25%	sage/brush	75		260
D	13.54	32%	1/4 ac residential	87		994
D	17.97	43%	sage/brush	82		994
TOTAL	41.78	100%			**82**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.13

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE I DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **B2b**

Measured= 45.91 acres
0.07 sq. miles

Watershed Slope:

Length=	2650	ft
Lc=	1350	ft
Elev. Low	5020	ft
Elev. High	5290	ft
Height=	270	ft
Slope=	10.19%	
Slope=	538.0	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	45.91	100%	sage/brush	78		994, 1052
TOTAL	45.91	100%			78	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.36

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE I DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **B2c**

Measured= 42.01 acres
0.07 sq. miles

Watershed Slope:

Length=	2250 ft
Lc=	1100 ft
Elev. Low	4950 ft
Elev. High	5100 ft
Height=	150 ft
Slope=	6.67%
Slope=	352.0 ft/mile
K=	0.05

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	26.85	64%	1/4 ac residential	87		994
D	15.16	36%	irrigated, park	80		1052
TOTAL	42.01	100%			**84**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.19

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE I DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **B3**

Measured= 32.37 acres
0.05 sq. miles

Watershed Slope:

Length=	2500 ft
Lc=	1100 ft
Elev. Low	5050 ft
Elev. High	5350 ft
Height=	300 ft
Slope=	12.00%
Slope=	633.6 ft/mile
K=	0.09

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	0.92	3%	1/4 ac residential	87		1050, 1052
D	2.75	8%	irrigated common area	80		994
D	28.70	89%	sage/brush	78		1050, 1052, 994
TOTAL	32.37	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.32

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE II DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **B2a**

Measured= 15.46 acres
0.02 sq. miles

Watershed Slope:

Length=	1300 ft
Lc=	500 ft
Elev. Low	5195 ft
Elev. High	5320 ft
Height=	125 ft
Slope=	9.62%
Slope=	507.7 ft/mile
K=	0.09

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	15.46	100%	sage/brush	78		1050
TOTAL	15.46	100%			**78**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.21

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE II DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **B3**

Measured= 33.29 acres
0.05 sq. miles

Watershed Slope:

Length=	2500	ft
Lc=	1100	ft
Elev. Low	5050	ft
Elev. High	5350	ft
Height=	300	ft
Slope=	12.00%	
Slope=	633.6	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
D	2.44	7%	1/4 ac residential	87		1050, 1052
D	2.75	8%	irrigated common area	80		994
D	28.10	84%	sage/brush	78		1050, 1052, 994
TOTAL	33.29	100%			**79**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.32

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE III DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **A5a**

Measured= 76.55 acres
0.12 sq. miles

Watershed Slope:

Length=	2600	ft
Lc=	1800	ft
Elev. Low	5175	ft
Elev. High	5440	ft
Height=	265	ft
Slope=	10.19%	
Slope=	538.2	ft/mile
K=	0.05	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	16.52	22%	Comercial/Retail	92		553
D	14.60	19%	shrub/brush	78		1050
D	33.04	43%	1/4 ac residential	87		996
D	12.39	16%	Comercial/Retail	95		
TOTAL	76.55	100%			**88**	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.22

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE III DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **A8**

Measured= 89.14 acres
0.14 sq. miles

Watershed Slope:

Length=	4350	ft
Lc=	1600	ft
Elev. Low	5020	ft
Elev. High	5440	ft
Height=	420	ft
Slope=	9.66%	
Slope=	509.8	ft/mile
K=	0.09	

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	15.04	17%	sage/brush	58		673
D	68.52	77%	sage/brush	78		1054, 1050, 222
D	5.58	6%	1/4 ac residential	87		1050
TOTAL	89.14	100%			75	

Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.45

SOMERSETT
HYDROLOGIC ANALYSIS
PHASE IV DEVELOPED CONDITIONS
JN:3011
BY:BJ
4/2/98

Watershed Area: **A11**

Measured= 61.29 acres
0.10 sq. miles

Watershed Slope:

Length=	4400 ft
Lc=	2000 ft
Elev. Low	5025 ft
Elev. High	5425 ft
Height=	400 ft
Slope=	9.09%
Slope=	480.0 ft/mile
K=	0.05

Curve Number Estimate:

HSG	AREA	% OF TOTAL	LAND USE/COVER TYPE	CURVE NO.	COMPOSITE CURVE NO.	SOIL TYPE
B	27.33	45%	shrub/brush	58		671
D	22.46	37%	shrub/brush	87		1050, 1054
D	11.50	19%	1/4 ac residential	87		190, 615, 1050
TOTAL	61.29	100%			**74**	

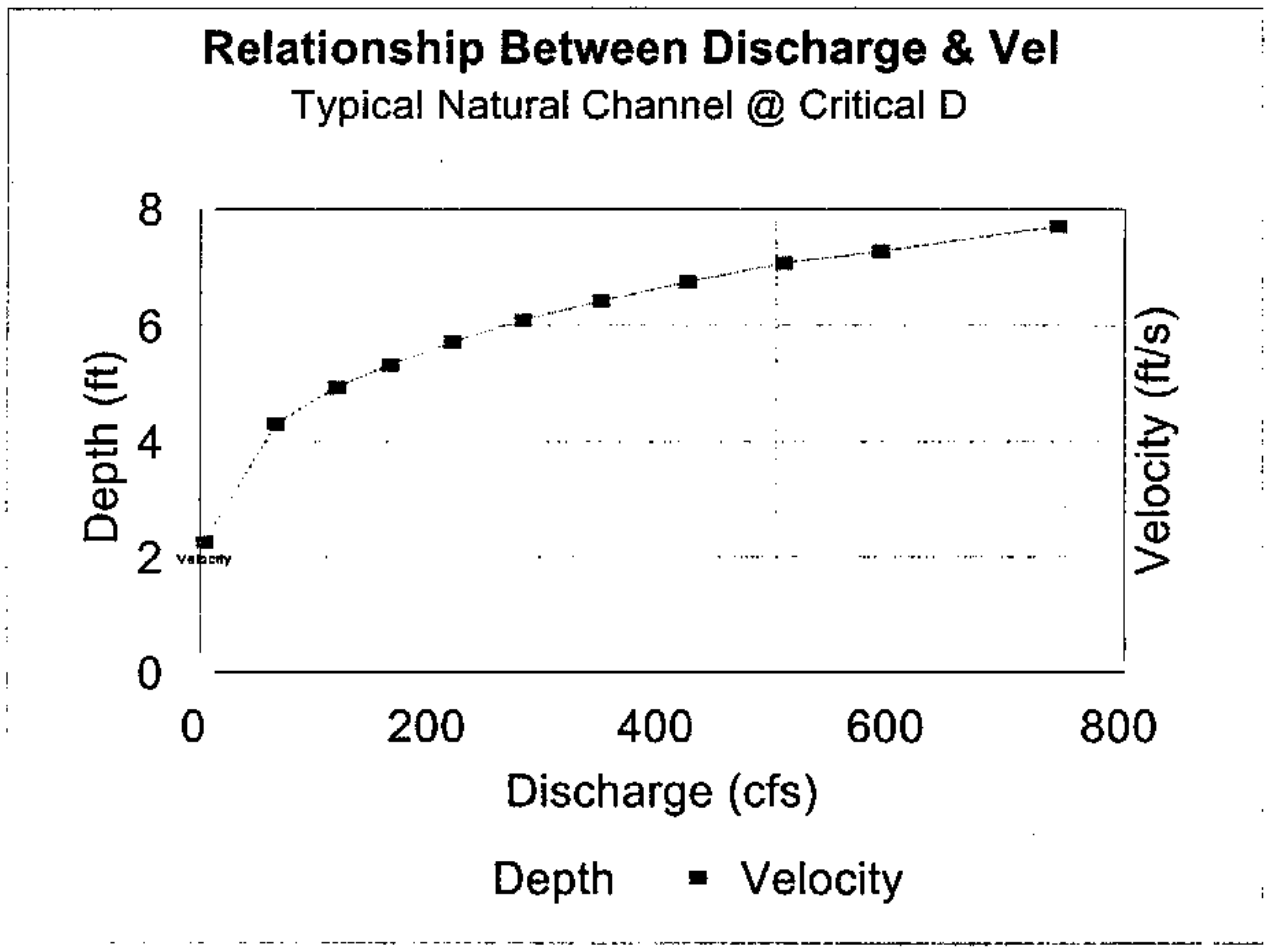
Lag Time Estimate: (Washoe County HCDDM Criteria)

TLAG=22.1*K(L*(Lc/S^0.5))0.33 Where: K=Basin Channel Roughness Factor
L=Length of Longest Water Course (miles)
Lc=Length to Basin Centroid (miles)
S=Average Watercourse Slope (ft/mile)

TLAG= 0.27

APPENDIX B - Watershed Data

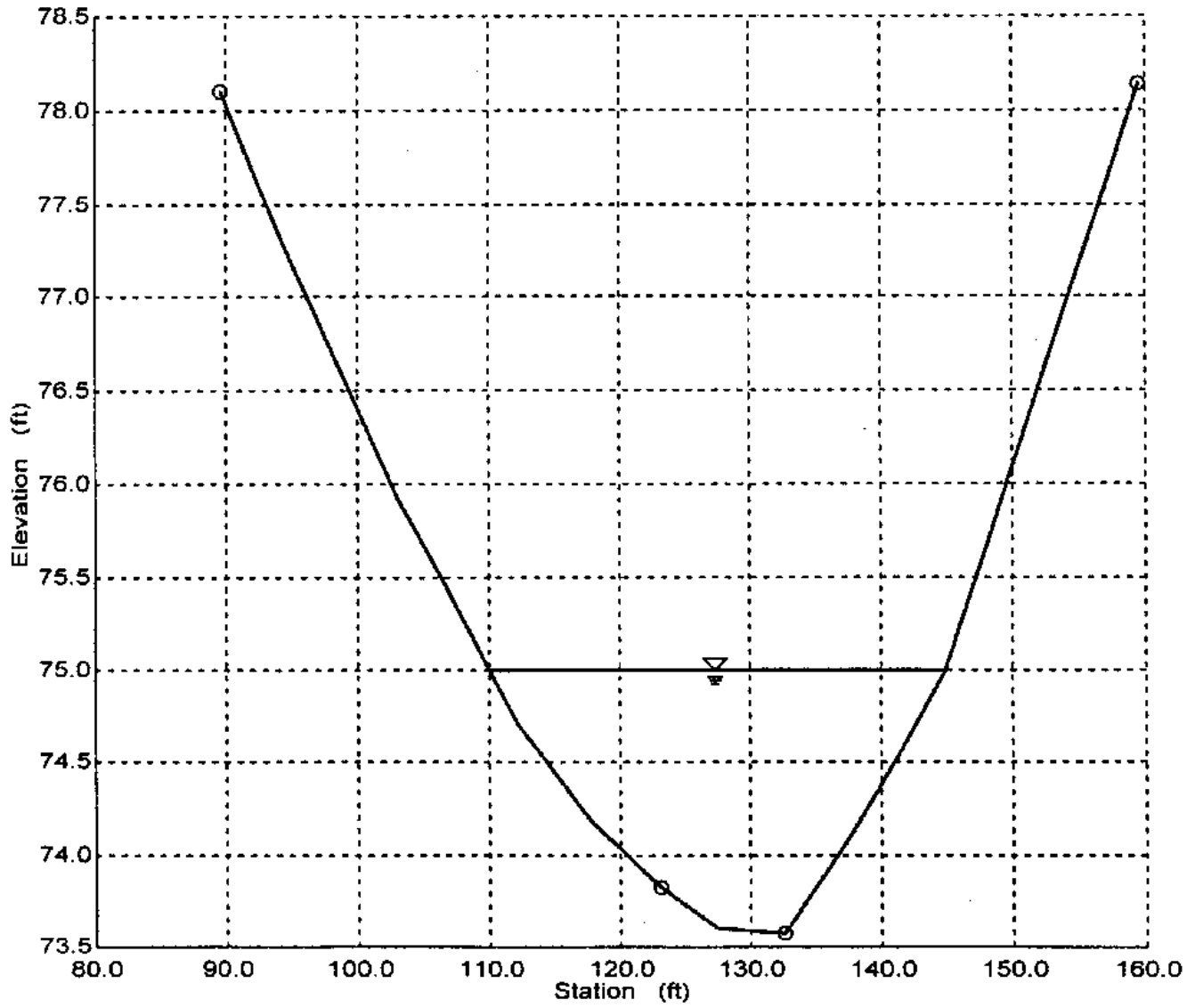
Lag Time Estimates
Supporting Calculations for Channel Reach Velocity Estimates
Natural Channel


Relationship Between Discharge & Vel
Typical Natural Channel @ Critical D
Depth (ft)
Velocity (ft/s)
0
2
4
6
8
0
200
400
600
800
Discharge (cfs)
Depth
Velocity

Typical Natural Channel @ Critical Depth
Cross Section for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.038	
Channel Slope	0.032000	ft/ft
Water Surface Elevation	75.00	ft
Discharge	195.00	cfs



Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.022560	ft/ft
Water Surface Elevation	75.40	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)
89.61	78.10
93.92	77.36
103.00	75.92
106.68	75.44
109.92	75.00
112.24	74.70
117.82	74.18
123.22	73.82
127.52	73.60
132.69	73.58
137.66	74.10
141.12	74.52
144.81	75.00
146.00	75.25
159.57	78.14

Start Station	End Station	Roughness
89.61	123.22	0.055
123.22	132.69	0.033
132.69	159.57	0.055

Results		
Wtd. Mannings Coefficient	0.040	
Discharge	277.93	cfs
Flow Area	45.67	ft²
Wetted Perimeter	39.94	ft
Top Width	39.73	ft
Height	1.82	ft
Critical Depth	75.40	ft
Critical Slope	0.022534	ft/ft
Velocity	6.09	ft/s
Velocity Head	0.58	ft
Specific Energy	75.98	ft
Froude Number	1.00	
Flow is supercritical.		

Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.022560	ft/ft
Water Surface Elevation	75.60	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
89.61	78.10	89.61	123.22	0.055
93.92	77.36	123.22	132.69	0.033
103.00	75.92	132.69	159.57	0.055
106.68	75.44			
109.92	75.00			
112.24	74.70			
117.82	74.18			
123.22	73.82			
127.52	73.60			
132.69	73.58			
137.66	74.10			
141.12	74.52			
144.81	75.00			
146.00	75.25			
159.57	78.14			

Results		
Wtd. Mannings Coefficient	0.041	
Discharge	346.29	cfs
Flow Area	53.86	ft²
Wetted Perimeter	42.44	ft
Top Width	42.19	ft
Height	2.02	ft
Critical Depth	75.60	ft
Critical Slope	0.022419	ft/ft
Velocity	6.43	ft/s
Velocity Head	0.64	ft
Specific Energy	76.24	ft
Froude Number	1.00	
Flow is supercritical.		

Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.022560	ft/ft
Water Surface Elevation	75.80	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
89.61	78.10	89.61	123.22	0.055
93.92	77.36	123.22	132.69	0.033
103.00	75.92	132.69	159.57	0.055
106.68	75.44			
109.92	75.00			
112.24	74.70			
117.82	74.18			
123.22	73.82			
127.52	73.60			
132.69	73.58			
137.66	74.10			
141.12	74.52			
144.81	75.00			
146.00	75.25			
159.57	78.14			

Results		
Wtd. Mannings Coefficient	0.041	
Discharge	422.40	cfs
Flow Area	62.55	ft²
Wetted Perimeter	44.94	ft
Top Width	44.66	ft
Height	2.22	ft
Critical Depth	75.81	ft
Critical Slope	0.022286	ft/ft
Velocity	6.75	ft/s
Velocity Head	0.71	ft
Specific Energy	76.51	ft
Froude Number	1.01	
Flow is supercritical.		

Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.022560	ft/ft
Water Surface Elevation	76.00	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)
89.61	78.10
93.92	77.36
103.00	75.92
106.68	75.44
109.92	75.00
112.24	74.70
117.82	74.18
123.22	73.82
127.52	73.60
132.69	73.58
137.66	74.10
141.12	74.52
144.81	75.00
146.00	75.25
159.57	78.14

Start Station	End Station	Roughness
89.61	123.22	0.055
123.22	132.69	0.033
132.69	159.57	0.055

Results		
Wtd. Mannings Coefficient	0.042	
Discharge	506.83	cfs
Flow Area	71.72	ft²
Wetted Perimeter	47.34	ft
Top Width	47.03	ft
Height	2.42	ft
Critical Depth	76.01	ft
Critical Slope	0.022166	ft/ft
Velocity	7.07	ft/s
Velocity Head	0.78	ft
Specific Energy	76.78	ft
Froude Number	1.01	
Flow is supercritical.		

Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.021900	ft/ft
Water Surface Elevation	76.20	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)
89.61	78.10
93.92	77.36
103.00	75.92
106.68	75.44
109.92	75.00
112.24	74.70
117.82	74.18
123.22	73.82
127.52	73.60
132.69	73.58
137.66	74.10
141.12	74.52
144.81	75.00
146.00	75.25
159.57	78.14

Start Station	End Station	Roughness
89.61	123.22	0.055
123.22	132.69	0.033
132.69	159.57	0.055

Results		
Wtd. Mannings Coefficient	0.042	
Discharge	591.01	cfs
Flow Area	81.35	ft²
Wetted Perimeter	49.58	ft
Top Width	49.23	ft
Height	2.62	ft
Critical Depth	76.20	ft
Critical Slope	0.022063	ft/ft
Velocity	7.27	ft/s
Velocity Head	0.82	ft
Specific Energy	77.02	ft
Froude Number	1.00	
Flow is subcritical.		

Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.021900	ft/ft
Water Surface Elevation	76.50	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)
89.61	78.10
93.92	77.36
103.00	75.92
106.68	75.44
109.92	75.00
112.24	74.70
117.82	74.18
123.22	73.82
127.52	73.60
132.69	73.58
137.66	74.10
141.12	74.52
144.81	75.00
146.00	75.25
159.57	78.14

Start Station	End Station	Roughness
89.61	123.22	0.055
123.22	132.69	0.033
132.69	159.57	0.055

Results		
Wtd. Mannings Coefficient	0.043	
Discharge	743.54	cfs
Flow Area	96.61	ft²
Wetted Perimeter	52.94	ft
Top Width	52.53	ft
Height	2.92	ft
Critical Depth	76.50	ft
Critical Slope	0.021881	ft/ft
Velocity	7.70	ft/s
Velocity Head	0.92	ft
Specific Energy	77.42	ft
Froude Number	1.00	

Flow is supercritical.

Typical Natural Channel @ Critical Depth
Worksheet for Irregular Channel

Project Description	
Project File	d:\haestad\fmw\som-lag.fm2
Worksheet	Typical Natural Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.021600	ft/ft
Water Surface Elevation	76.80	ft

Elevation range: 73.58 ft to 78.14 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
89.61	78.10	89.61	123.22	0.055
93.92	77.36	123.22	132.69	0.033
103.00	75.92	132.69	159.57	0.055
106.68	75.44			
109.92	75.00			
112.24	74.70			
117.82	74.18			
123.22	73.82			
127.52	73.60			
132.69	73.58			
137.66	74.10			
141.12	74.52			
144.81	75.00			
146.00	75.25			
159.57	78.14			

Results		
Wtd. Mannings Coefficient	0.043	
Discharge	908.23	cfs
Flow Area	112.87	ft²
Wetted Perimeter	56.29	ft
Top Width	55.83	ft
Height	3.22	ft
Critical Depth	76.80	ft
Critical Slope	0.021700	ft/ft
Velocity	8.05	ft/s
Velocity Head	1.01	ft
Specific Energy	77.81	ft
Froude Number	1.00	
Flow is subcritical.		

APPENDIX C
5-Year Analysis

APPENDIX C - 5 YEAR ANALYSIS

HEC-1 Output
5-Year Existing Condition Analysis

WRC NEVADA, INC.

April 17, 1998

```
**********************************************
*                                            *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)        *
*             MAY  1991                      *
*           VERSION 4.0.1E                   *
*       Lahey F77L-EM/32 version 5.01        *
*        Dodson & Associates, Inc.           *
*  RUN DATE  05/06/98  TIME  01:40:22        *
**********************************************
```

```
**********************************************
*                                            *
*    U.S. ARMY CORPS OF ENGINEERS            *
*    HYDROLOGIC ENGINEERING CENTER           *
*         609 SECOND STREET                  *
*       DAVIS, CALIFORNIA 95616              *
*         (916) 551-1748                     *
*                                            *
**********************************************
```

```
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

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

          *DIAGRAM
    1     ID   ===========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                     |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                |
    4     ID   | EXISTING CONDITION                                                      |
    5     ID   | Washoe County, Nevada                                                   |
    6     ID   |                                                                         |
    7     ID   |  5- Year Analysis                                                       |
    8     ID   |   - For offsite areas                                                   |
    9     ID   |   - Watersheds measured from USGS 7.5 Minute Quads                      |
   10     ID   |   - Rainfall entered using hypothetical storm option                    |
   11     ID   |   - Rainfall data estimated using revised NOAA precipitation data       |
   12     ID   |   - Curve number estimates based on Sage-Grass, as described in TR-55   |
   13     ID   |     (SCS, 1986)  or NEH-4 (SCS, 1972)                                   |
   14     ID   |   - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   15     ID   |     as modified for the Washoe County Hydrologic Criteria Manual.       |
   16     ID   |                                                                         |
   17     ID   | File: SOMEX005.DAT                          WRC NEVADA, INC.            |
   18     ID   | APRIL 1997                                  1575 DELUCCHI LN STE.207A   |
   19     ID   | Project No.   3011                          Reno, Nevada  89502         |
   20     ID   |                                            (702)332-3737,FAX 332-3740  |
   21     ID   ===========================================================================
   22     IT      3       0       0    1441
   23     IO      5       0       0
          *
          *
          *
          * *********   WATERSHED SUBAREA A    *************
          *
          *

   24     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   25     PH                    0.22    0.41    0.68    0.92    1.11    1.50    2.00    2.51
   26     BA  0.4094
   27     LS       0      73
   28     UD    0.32
          *

   29     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   30     RD    5700    0.14    0.07            TRAP       6       3
          *

   31     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   32     PH                     .21    0.38    0.63    0.87    1.05    1.43    1.89    2.34
   33     BA  0.3002
   34     LS       0      81
   35     UD    0.31
          *

   36     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   37     HC       2
          *
```

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

  38      KK   RT-A6 ROUTE HOROGRAPH TO OUTLET OF AREA A6
  39      RD    2700   0.089    0.07           TRAP       6       3
          *

  40      KK  SA  A6 GENERATE HYDOGRAPH FOR SUB-AREA A6
  41      PH                    0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  42      BA  0.1163
  43      LS       0      73
  44      UD    0.29
          *

  45      KK  CP  A6 COMBINE HYDROGRAPHS FROM AREA A6 AND AREA A7
  46      HC       2
          *

  47      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  48      RD    1700   0.047    0.07           TRAP       6       3
          *

  49      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  50      PH                    0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  51      BA  0.1406
  52      LS       0      72
  53      UD    0.28
          *

  54      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  55      HC       2
          *

  56      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  57      RD    1900   0.063     .07           TRAP       6       3
          *

  58      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  59      PH                   0.18   0.330    0.56    0.76    0.92    1.25    1.68    2.11
  60      BA  0.1638
  61      LS       0      78
  62      UD    0.25
          *

  63      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  64      PH                    0.19    0.34    0.57    0.78    0.94    1.27    1.72    2.16
  65      BA  0.0428
  66      LS       0      61
  67      UD    0.29
          *

  68      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  69      HC       3
          *
```

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

   70     KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
   71     PH                   0.22    0.39    0.65    0.89    1.06    1.43    1.90    2.37
   72     BA  0.2852
   73     LS       0      79
   74     UD    0.30
          *

   75     KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
   76     PH                   0.22    0.41    0.68    0.92    1.10    1.48    2.00    2.51
   77     BA  0.1563
   78     LS       0      78
   79     UD    0.29
          *

   80     KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
   81     RD    6800   0.165     .08            TRAP       6       3
          *

   82     KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
   83     PH                   0.22    0.39    0.65    0.89    1.07    1.44    1.91    2.38
   84     BA  0.3677
   85     LS       0      78
   86     UD    0.33
          *
          *

   87     KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15 AND A10
   88     HC       3
          *

   89     KK   RT-A8 ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8
   90     RD    4800   0.050     .07            TRAP       6       3
          *

   91     KK  SA  A8 GENERATE HYDOGRAPH FOR SUB-AREA A8
   92     PH                   0.20    0.36    0.60    0.82    0.98    1.33    1.78    2.23
   93     BA  0.1497
   94     LS       0      74
   95     UD    0.33
          *

   96     KK  CP  A8 COMBINE HYDROGRAPHS FROM AREA A8 W/ COMB HYDROGRAPH FROM AREA A9 & A10
   97     HC       2
          *

   98     KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
   99     PH                   0.21    0.38    0.64    0.86    1.03    1.38    1.85    2.32
  100     BA  0.1961
  101     LS               78
  102     UD    0.30
          *
```

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

  103     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  104     PH                   0.21    0.38    0.63    0.85    1.01    1.37    1.83    2.30
  105     BA  0.0544
  106     LS       0      78
  107     UD    0.23
          *

  108     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  109     HC       2
          *

  110     KK  RT-A11 ROUTE COMBINED HYDROGRAPH A12&13 TO OUTLET OF A11
  111     RD    2400  0.0147    0.07            TRAP       6       3
          *

  112     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  113     PH                   0.20    0.37    0.61    0.82    0.97    1.30    1.75    2.20
  114     BA  0.1278
  115     LS       0      73
  116     UD    0.31
          *

  117     KK  CP A11 COMBINE HYDROGRAPH FROM AREA A11 W/COMB HYDROGRAPHS FROM AREA A12 & A13
  118     HC       2
          *

  119     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A3, A4, A8 AND A11
  120     HC       3
          *

  121     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  122     RD    4400  0.0386     .07            TRAP       6       3
          *

  123     KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
  124     PH                   0.18    0.33    0.56    0.76    0.91    1.24    1.67    2.11
  125     BA  0.2264
  126     LS       0      78
  127     UD    0.25
          *

  128     KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
  129     HC       2
          *

  130     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
  131     RD    1500    0.07    0.07            TRAP       6       3
          *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  132     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
  133     RD    2400  0.0125   0.040          TRAP      15       3
          *

  134     KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
  135     PH                   0.18    0.33    0.54    0.74    0.89    1.20    1.61    2.02
  136     BA  0.1127
  137     LS       0      76
  138     UD    0.33
          *
          *
          * *********   WATERSHED SUBAREA E    **************
          *
          *

  139     KK  SA  E6 GENERATE HYDOGRAPH FOR SUB-AREA E6
  140     PH                   0.20    0.37    0.61    0.82    0.97    1.30    1.76    2.23
  141     BA  0.0448
  142     LS       0      65
  143     UD    0.22
          *

  144     KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  145     RD    1900  0.0658     .07          TRAP       6       3
          *

  146     KK  SA  E5 GENERATE HYDOGRAPH FOR SUB-AREA E5
  147     PH                   0.20    0.37    0.61    0.83    0.99    1.34    1.81    2.28
  148     BA  0.1241
  149     LS       0      77
  150     UD    0.27
          *

  151     KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  152     RD    2500  0.0360     .07          TRAP       6       3
          *

  153     KK  CP E56 COMBINE HYDROGRAPH  E5 W/HYDROGRAPH E6 AT CONFLUENCE
  154     HC       2
          *

  155     KK   RT-E4 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
  156     RD    4500  0.0310     .07          TRAP       6       3
          *

  157     KK  SA  E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
  158     PH                   0.19    0.35    0.58    0.79    0.94    1.26    1.72    2.18
  159     BA  0.4231
  160     LS       0      76
  161     UD    0.36
          *
```

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

  162     KK  CP  E4 COMBINE HYDROGRAPH  E4 W/HYDROGRAPH E5 AND E6
  163     HC       2
          *

  164     KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
  165     RD    3500  0.0429     .07           TRAP       6       3
          *

  166     KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
  167     PH                  0.19    0.34    0.57    0.76    0.90    1.20    1.63    2.06
  168     BA  0.1191
  169     LS       0      75
  170     UD    0.27
          *

  171     KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
  172     HC       2
          *

  173     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  174     RD     500  0.0125     .04           TRAP      15       3
          *

  175     KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
  176     PH                  0.19    0.34    0.57    0.77    0.92    1.24    1.68    2.12
  177     BA  0.1653
  178     LS       0      62
  179     UD    0.38
          *

  180     KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
  181     RD    3200  0.0375     .07           TRAP       6       3
          *

  182     KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
  183     PH                  0.18    0.33    0.56    0.75    0.89    1.20    1.62    2.04
  184     BA  0.1156
  185     LS       0      76
  186     UD    0.31
          *

  187     KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
  188     HC       2
          *

  189     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  190     RD    1200  0.0125     .04           TRAP      15       3
          *
```

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

  191     KK    I-80
  192     KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
  193     HC      4
          *
          * *********   WATERSHED SUBAREA B    **************
          *
          *
          *

  194     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
  195     PH                  0.22    0.40    0.67    0.91    1.10    1.50    1.96    2.43
  196     BA  0.4136
  197     LS      0      76
  198     UD    0.32
          *

  199     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
  200     RD    3900  0.0133     .07           TRAP      6       3
          *

  201     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  202     PH                  0.22    0.40    0.67    0.91    1.10    1.48    1.98    2.48
  203     BA  0.2400
  204     LS      0      70
  205     UD    0.33
          *

  206     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  207     RD    4500  0.1510     .08           TRAP      6       3
          *

  208     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  209     PH                  0.20    0.37    0.61    0.85    1.03    1.40    1.85    2.30
  210     BA  0.3484
  211     LS      0      79
  212     UD    0.26
          *

  213     KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  214     HC      3
          *

  215     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  216     RD    2000  0.1000     .07           TRAP      6       3
          *

  217     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  218     PH                  0.19    0.35    0.58    0.79    0.95    1.27    1.70    2.12
  219     BA  0.0820
  220     LS      0      76
  221     UD    0.24
          *
```

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

  222     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  223     HC       2
          *

  224     KK  RT-B10 ROUTE HYDROGRAPH TO OUTLET OF B10
  225     RD    4600  0.0696     .07           TRAP       6       3
          *

  226     KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  227     PH                   0.19    0.34    0.57    0.78    0.93    1.26    1.69    2.11
  228     BA  0.0850
  229     LS       0      78
  230     UD    0.27
          *

  231     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B9 TO OUTLET OF AREA B7
  232     RD    2500  0.0760     .07           TRAP       6       3
          *

  233     KK  SA  B8 GENERATE HYDOGRAPH FOR SUB-AREA B8
  234     PH                   0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  235     BA  0.2102
  236     LS       0      78
  237     UD    0.22
          *

  238     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  239     RD    3800  0.0757     .07           TRAP       6       3
          *

  240     KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  241     PH                   0.18    0.32    0.53    0.73    0.89    1.21    1.62    2.04
  242     BA  0.0514
  243     LS       0      78
  244     UD    0.30
          *

  245     KK  CP  B7 COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B8 & B9
  246     HC       3
          *

  247     KK  RT-B10 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B10
  248     RD    1000  0.0800     .07           TRAP       6       3
          *

  249     KK  SA B10 GENERATE HYDOGRAPH FOR SUB-AREA B10
  250     PH                   0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  251     BA  0.1245
  252     LS       0      75
  253     UD    0.35
          *
```

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

  254     KK  CP B10 COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B11,12,13,17
  255     HC       3
          *
          *

  256     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  257     PH                   0.18    0.33    0.56    0.77    0.93    1.27    1.69    2.11
  258     BA  0.0344
  259     LS       0      78
  260     UD    0.21
          *

  261     KK   RT-B4 ROUTE HYDROGRAPH FROM B6 TO OUTLET OF B4
  262     RD    3300  0.0848     .07           TRAP       6       3
          *

  263     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  264     PH                   0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
  265     BA  0.0985
  266     LS       0      77
  267     UD    0.22
          *

  268     KK  RT-B15 ROUTE HYDROGRAPH FROM B14 TO OUTLET OF B15
  269     RD    2500  0.0640     .07           TRAP       6       3
          *

  270     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  271     PH                   0.18    0.33    0.56    0.76    0.92    1.25    1.65    2.06
  272     BA  0.0422
  273     LS       0      73
  274     UD    0.23
          *

  275     KK  RT-B15 ROUTE HYDROGRAPH FROM B14 TO OUTLET OF B15
  276     RD    1600  0.0625     .07           TRAP       6       3
          *

  277     KK  SA B15 GENERATE HYDOGRAPH FOR SUB-AREA B15
  278     PH                   0.18    0.33    0.54    0.75    0.90    1.22    1.64    2.05
  279     BA  0.0373
  280     LS       0      70
  281     UD    0.26
          *

  282     KK  CP B15 COMBINE HYDROGRAPH FROM AREAS B15 W/HYDROGRAPHS FROM AREA B5 & B14
  283     HC       3
          *
```

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

  284     KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
  285     PH                   0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
  286     BA  0.0695
  287     LS       0      78
  288     UD    0.21
          *

  289     KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
  290     RD    1500  0.0533     .07           TRAP       6       3
          *

  291     KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
  292     PH                   0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
  293     BA  0.0746
  294     LS       0      78
  295     UD    0.25
          *

  296     KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
  297     HC       2
          *

  298     KK  CP B15 COMBINE HYDROGRAPH FROM AREAS B3,B16 W/HYDROGRAPHS FROM AREA B5,14&15
  299     HC       2
          *

  300     KK   RT-B4 ROUTE HYDROGRAPH TO OUTLET OF B4
  301     RD    1300  0.0615     .07           TRAP       6       3
          *

  302     KK  SA  B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
  303     PH                   0.18    0.32    0.53    0.73    0.88   1.200    1.60    2.01
  304     BA  0.0697
  305     LS       0      78
  306     UD    0.22
          *

  307     KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B16,15,14,3,5,&6
  308     HC       3
          *

  309     KK  SA  B2 GENERATE HYDOGRAPH FOR SUB-AREA B2
  310     PH                   0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
  311     BA  0.1092
  312     LS       0      78
  313     UD    0.32
          *

  314     KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B2 W/HYDROGRAPH FROM B16,15,14,3,4,5&6
  315     HC       2
          *
```

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

  316     KK  CP B10 COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
  317     HC       2
          *
  318     KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
  319     RD    1400  0.0286     .07           TRAP       6       3
          *
  320     KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
  321     PH                  0.17    0.31    0.52    0.71    0.86    1.17    1.57    1.97
  322     BA  0.0669
  323     LS       0      76
  324     UD    0.16
          *
  325     KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
  326     HC       2
          *
          * *********   WATERSHED SUBAREA C    *************
          *
          *
          *
  327     KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
  328     PH                  0.23    0.42    0.71    0.95    1.14    1.53    2.03    2.53
  329     BA  0.6580
  330     LS       0      77
  331     UD    0.33
          *
  332     KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
  333     RD    4800  0.1583     .07           TRAP       6       3
          *
  334     KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
  335     PH                  0.22    0.39    0.65    0.89    1.06    1.43    1.87    2.30
  336     BA  0.3359
  337     LS       0      80
  338     UD    0.19
          *
  339     KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
  340     HC       2
          *
  341     KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
  342     RD    5500  0.1091     .07           TRAP       6       3
          *
```

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

  343     KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
  344     PH                  0.20    0.36    0.60    0.81    0.97    1.30    1.71    2.11
  345     BA  0.3167
  346     LS       0      80
  347     UD    0.26
          *

  348     KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
  349     HC       2
          *

  350     KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
  351     RD    3000  0.0933     .07           TRAP       6       3
          *

  352     KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
  353     PH                  0.18    0.33    0.56    0.75    0.89    1.20    1.60    2.00
  354     BA  0.1528
  355     LS       0      78
  356     UD    0.27
          *

  357     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
  358     HC       2
          *

  359     KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
  360     PH                  0.20    0.36    0.60    0.81    0.97    1.31    1.74    2.16
  361     BA  0.2380
  362     LS       0      80
  363     UD    0.23
          *

  364     KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
  365     RD    3200  0.0750     .07           TRAP       6       3
          *

  366     KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
  367     PH                  0.18    0.33    0.56    0.76    0.91    1.24    1.64    2.05
  368     BA  0.1280
  369     LS       0      75
  370     UD    0.25
          *

  371     KK  CP  C8 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
  372     HC       2
          *

  373     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
  374     HC       2
          *
```

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

  375     KK   RT-C4 ROUTE HYDROGRAPH TO OUTLET OF C4
  376     RD    2300  0.0610     .07           TRAP      6      3
          *

  377     KK  SA  C4 GENERATE HYDOGRAPH FOR SUB-AREA C4
  378     PH                   0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
  379     BA  0.1198
  380     LS       0      69
  381     UD    0.30
          *

  382     KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
  383     PH                   0.18    0.32    0.53    0.72    0.86    1.16    1.55    1.95
  384     BA  0.1147
  385     LS       0      75
  386     UD    0.27
          *

  387     KK   RT-C4 ROUTE HYDROGRAPH TO OUTLET OF C4
  388     RD    2000  0.0500     .07           TRAP      6      3
          *

  389     KK  CP  C4 COMBINE HYDROGRAPH FROM AREA C4 W/HYDROGRAPH FROM AREA C5 AND C9
  390     HC       3
          *

  391     KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3
  392     RD    1800  0.0556     .07           TRAP      6      3
          *

  393     KK  SA  C3 GENERATE HYDOGRAPH FOR SUB-AREA C3
  394     PH                   0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
  395     BA  0.2161
  396     LS       0      77
  397     UD    0.31
          *

  398     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
  399     HC       2
          *

  400     KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
  401     PH                   0.17    0.30    0.50    0.67    0.80    1.07    1.45    1.84
  402     BA  0.1705
  403     LS       0      78
  404     UD    0.26
          *

  405     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
  406     HC       2
          *
```

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

  407     KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
  408     RD    1500  0.0400     .07           TRAP       6       3
          *

  409     KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
  410     PH                   0.17    0.30    0.50    0.69    0.83    1.13    1.53    1.92
  411     BA  0.0723
  412     LS       0      78
  413     UD    0.24
          *

  414     KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
  415     HC       2
          *

  416     KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
  417     HC       2
          *

  418     KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
  419     RD    3200  0.0500     .07           TRAP       6       2
          *

  420     KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
  421     PH                   0.17    0.31    0.52    0.70    0.85    1.14    1.55    1.96
  422     BA  0.2191
  423     LS       0      73
  424     UD    0.24
          *

  425     KK  MogulE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  426     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  427     HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    *************
          *
          *

  428     KK  SA  F1 GENERATE HYDOGRAPH FOR SUB-AREA F1
  429     PH                   0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
  430     BA  0.1969
  431     LS       0      76
  432     UD    0.32
          *

  433     KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
  434     PH                   0.18    0.33    0.54    0.74    0.89    1.20    1.62    2.04
  435     BA  0.1352
  436     LS       0      79
  437     UD    0.25
          *
```

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

  438     KK  MogulW COMBINE HYDROGRAPH FROM AREA 01 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  439     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  440     HC       2
          *
  441     ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
OUTPUT
 'E      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

  24     SA A14
              V
              V
  29      RT-A7
              .
              .
  31          .      SA  A7
              .           .
              .           .
  36     CP  A7.............
              V
              V
  38      RT-A6
              .
              .
  40          .      SA  A6
              .           .
              .           .
  45     CP  A6.............
              V
              V
   7      RT-A5
              .
              .
  49          .      SA  A5
              .           .
              .           .
  54     CP  A5.............
              V
              V
  56      RT-A4
              .
              .
  58          .      SA  A3
              .           .
              .           .
  63          .           .      SA  A4
              .           .           .
              .           .           .
  68     CP  A4.........................
              .
              .
  70          .      SA A10
              .           .
              .           .
  75          .           .      SA A15
              .           .           V
              .           .           V
  ,0          .           .       RT-A9
              .           .           .
              .           .           .
  82          .           .           .      SA  A9
```

```
                .       .       .       .
                .       .       .       .
 87             .    CP  A9.....................
                .       V
                .       V
 d9             .    RT-A8
                .       .
                .       .
 91             .       .    SA  A8
                .       .       .
                .       .       .
 96             .    CP  A8.....
                .       .
                .       .
 98             .       .    SA A13
                .       .       .
                .       .       .
103             .       .       .       SA A12
                .       .       .         .
                .       .       .         .
108             .       .    CP A12.....
                .       .       V
                .       .       V
110             .       .    RT-A11
                .       .       .
                .       .       .
112             .       .       .       SA A11
                .       .       .         .
                .       .       .         .
                .       .    CP A11.....
                .       .       .
                .       .       .
119          CP4811.....................
                V
                V
121          RT-A2
                .
                .
123             .    SA  A2
                .       .
                .       .
128          CP  A2.....
                V
                V
130          RT-A1
                V
                V
132          RT-A1
                .
                .
134             .    SA  A1
                .       .
                .       .
139             .       .    SA  E6
                .       .       V
                .       .       V
-4              .       .    RT-E56
                .       .       .
                .       .       .
146             .       .       .       SA  E5
```

```
                .       .       .       V
                .       .       .       V
151             .       .       .     RT-E56
                .       .       .       .
                .       .       .       .
 53             .       .    CP E56.....
                .       .       V
                .       .       V
155             .       .    RT-E4
                .       .       .
                .       .       .
157             .       .       .     SA  E4
                .       .       .       .
                .       .       .       .
162             .       .    CP  E4.....
                .       .       V
                .       .       V
164             .       .    RT-E3
                .       .       .
                .       .       .
166             .       .       .     SA  E3
                .       .       .       .
                .       .       .       .
171             .       .    CP  E3.....
                .       .       V
                .       .       V
173             .       .    RT-A1
                .       .       .
                .       .       .
                .       .       .     SA  E2
                .       .       .       V
                .       .       .       V
180             .       .       .     RT-E1
                .       .       .       .
                .       .       .       .
182             .       .       .       .     SA  E1
                .       .       .       .       .
                .       .       .       .       .
187             .       .       .     CP  E1.....
                .       .       .       V
                .       .       .       V
189             .       .       .     RT-A1
                .       .       .       .
                .       .       .       .
191         I-80.....................................
                .
                .
194             .    SA B17
                .       V
                .       V
199             .    RT-B12
                .       .
                .       .
201             .       .    SA B13
                .       .       V
                .       .       V
 -0             .       .    RT-B12
                .       .       .
                .       .       .
208             .       .       .     SA B12
```

```
                .         .         .         .
                .         .         .         .
213             .    CP B12.....................
                .      V
                .      V
_15             .    RT-B11
                .      .
                .      .
217             .      .     SA B11
                .      .       .
                .      .       .
222             .    CP B11.....
                .      V
                .      V
224             .    RT-B10
                .      .
                .      .
226             .      .     SA  B9
                .      .       V
                .      .       V
231             .      .    RT-B7
                .      .       .
                .      .       .
233             .      .       .     SA  B8
                .      .       .       V
                .      .       .       V
238             .      .       .    RT-B7
                .      .       .       .
                .      .       .       .
)               .      .       .       .    SA  B7
                .      .       .       .      -
                .      .       .       .      -
245             .      .    CP  B7.....................
                .      .       V
                .      .       V
247             .      .    RT-B10
                .      .       .
                .      .       .
249             .      .       .     SA B10
                .      .       .       .
                .      .       .       .
254             .    CP B10.....................
                .      .
                .      .
256             .      .     SA  B6
                .      .       V
                .      .       V
261             .      .    RT-B4
                .      .       .
                .      .       .
263             .      .       .     SA B14
                .      .       .       V
                .      .       .       V
268             .      .       .     RT-B15
                .      .       .       .
                .      .       .       .
..0             .      -       .       .    SA  B5
                .      .       .       .      V
                .      .       .       .      V
275             .      .       .       .    RT-B15
```

```
277                                                  SA B15
                                                       .
                                                       .
282                          CP B15.....................
                                .
                                .
284                                SA B16
                                    V
                                    V
289                                RT- B3
                                    .
                                    .
291                                                  SA  B3
                                                       .
                                                       .
296                                CP  B3.............
                                    .
                                    .
298                          CP B15.............
                                V
                                V
300                           RT-B4
                                .
                                .
302                                SA  B4
                                    .
                                    .
                        CP  B4.....................
                            .
                            .
309                                              SA  B2
                                                   .
                                                   .
314                                CP  B4.............
                                    .
                                    .
316                      CP B10.............
                            V
                            V
318                       RT-B1
                            .
                            .
320                                SA  B1
                                    .
                                    .
325                      CP  B1.............
                            .
                            .
327                                SA C10
                                    V
                                    V
332                                RT-C11
                                    .
                                    .
                                                   SA C11
                                                       .
                                                       .
339                                CP C11.............
```

```
                .       .       V
                .       .       V
341             .       .     RT-C7
                .       .       .
                .       .       .
43              .       .       .       SA  C7
                .       .       .         .
                .       .       .         .
348             .       .     CP  C7.............
                .       .       V
                .       .       V
350             .       .     RT-C5
                .       .       .
                .       .       .
352             .       .       .       SA  C5
                .       .       .         .
                .       .       .         .
357             .       .     CP  C5.............
                .       .       .
                .       .       .
359             .       .       .       SA  C8
                .       .       .           V
                .       .       .           V
364             .       .       .         RT-C6
                .       .       .           .
                .       .       .           .
366             .       .       .           .       SA  C6
                .       .       .           .         .
                .       .       .           .         .
                .       .       .       CP  C8.............
                .       .       .           .
                .       .       .           .
373             .       .     CP  C5.............
                .       .       V
                .       .       V
375             .       .     RT-C4
                .       .       .
                .       .       .
377             .       .       .       SA  C4
                .       .       .         .
                .       .       .         .
382             .       .       .           .       SA  C9
                .       .       .           .         V
                .       .       .           .         V
387             .       .       .           .       RT-C4
                .       .       .           .         .
                .       .       .           .         .
389             .       .     CP  C4.........................
                .       .       V
                .       .       V
391             .       .     RT-C3
                .       .       .
                .       .       .
393             .       .       .       SA  C3
                .       .       .         .
                .       .       .         .
78              .       .     CP  C3.............
                .       .       .
                .       .       .
400             .       .       .       SA  C2
```

```
                .         .         .         .
                .         .         .         .
405             .         .      CP  C3.............
                .         .         V
                .         .         V
407             .         .       RT-C1
                .         .         .
                .         .         .
409             .         .         .      SA  C1
                .         .         .         .
                .         .         .         .
414             .         .      CP  C1.............
                .         .         .
                .         .         .
416             .      CP CB1.............
                .         V
                .         V
418             .       RT-D1
                .         .
                .         .
420             .         .      SA  D1
                .         .         .
                .         .         .
425             .      MogulE.............
                .         .
                .         .
428             .         .      SA  F1
                .         .         .
                .         .         .
  3             .         .         .      SA  F2
                .         .         .         .
                .         .         .         .
438             .         .      MogulW.............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*               MAY  1991               *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  01:40:22   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```

```
================================================================================
| SOMERSETT PLANNED UNIT DEVELOPEMENT
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
| EXISTING CONDITION
| Washoe County, Nevada
|
|   5- Year Analysis
|     - For offsite areas
|     - Watersheds measured from USGS 7.5 Minute Quads
|     - Rainfall entered using hypothetical storm option
|     - Rainfall data estimated using revised NOAA precipitation data
|     - Curve number estimates based on Sage-Grass, as described in TR-55
|       (SCS, 1986)  or NEH-4 (SCS, 1972)
|     - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)
|       as modified for the Washoe County Hydrologic Criteria Manual.
|
| File: SOMEX005.DAT                              WRC NEVADA, INC.
| APRIL 1997                                      1575 DELUCCHI LN STE.207A
| Project No.   3011                              Reno, Nevada  89502
|                                                (702)332-3737,FAX 332-3740
================================================================================
```

```
23 10          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   1T          HYDROGRAPH TIME DATA
                     NMIN           3  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1   0  STARTING DATE
                     ITIME         0000  STARTING TIME
                       NQ          1441  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      4   0  ENDING DATE
                    NDTIME         0000  ENDING TIME
                     ICENT           19  CENTURY MARK

                COMPUTATION INTERVAL    0.05 HOURS
                     TOTAL TIME BASE   72.00 HOURS

      ENGLISH UNITS
           DRAINAGE AREA         SQUARE MILES
           PRECIPITATION DEPTH   INCHES
           LENGTH, ELEVATION     FEET
           FLOW                  CUBIC FEET PER SECOND
           STORAGE VOLUME        ACRE-FEET
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SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	62.	12.40	18.	6.	2.	0.41		
ROUTED TO	RT-A7	63.	12.55	18.	6.	2.	0.41		
HYDROGRAPH AT	SA A7	77.	12.35	20.	7.	2.	0.30		
2 COMBINED AT	CP A7	125.	12.50	37.	13.	4.	0.71		
ROUTED TO	RT-A6	126.	12.55	37.	13.	4.	0.71		
HYDROGRAPH AT	SA A6	11.	12.35	4.	1.	0.	0.12		
2 COMBINED AT	CP A6	135.	12.55	41.	14.	5.	0.83		
ROUTED TO	RT-A5	134.	12.65	41.	14.	5.	0.83		
HYDROGRAPH AT	SA A5	12.	12.35	4.	1.	0.	0.14		
2 COMBINED AT	CP A5	142.	12.65	45.	16.	5.	0.97		
ROUTED TO	RT-A4	143.	12.70	45.	16.	5.	0.97		
HYDROGRAPH AT	SA A3	28.	12.30	7.	2.	1.	0.16		
HYDROGRAPH AT	SA A4	0.	15.85	0.	0.	0.	0.04		
3 COMBINED AT	CP A4	156.	12.70	52.	18.	6.	1.17		
HYDROGRAPH AT	SA A10	67.	12.35	17.	6.	2.	0.29		
HYDROGRAPH AT	SA A15	39.	12.35	10.	3.	1.	0.16		
ROUTED TO	RT-A9	39.	12.60	10.	3.	1.	0.16		
HYDROGRAPH AT	SA A9	76.	12.40	21.	7.	2.	0.37		
3 COMBINED AT	CP A9	158.	12.50	47.	16.	5.	0.81		
ROUTED TO	RT-A8	157.	12.65	47.	16.	5.	0.81		
HYDROGRAPH AT	SA A8	17.	12.40	5.	2.	1.	0.15		
2 COMBINED AT	CP A8	169.	12.65	52.	18.	6.	0.96		
HYDROGRAPH AT	SA A13	40.	12.35	10.	4.	1.	0.20		
HYDROGRAPH AT	SA A12	13.	12.30	3.	1.	0.	0.05		
2 COMBINED AT	CP A12	52.	12.35	13.	5.	2.	0.25		
ROUTED TO	RT-A11	52.	12.50	13.	5.	2.	0.25		

HYDROGRAPH AT	SA A11	13.	12.40	4.	1.	0.	0.13
2 COMBINED AT	CP A11	64.	12.50	17.	6.	2.	0.38
3 COMBINED AT	CP4811	375.	12.65	121.	42.	14.	2.51
ROUTED TO	RT-A2	372.	12.80	121.	42.	14.	2.51
HYDROGRAPH AT	SA A2	39.	12.30	10.	3.	1.	0.23
2 COMBINED AT	CP A2	387.	12.80	130.	45.	15.	2.74
ROUTED TO	RT-A1	386.	12.80	130.	45.	15.	2.74
ROUTED TO	RT-A1	386.	12.90	130.	45.	15.	2.74
HYDROGRAPH AT	SA A1	12.	12.40	4.	1.	0.	0.11
HYDROGRAPH AT	SA E6	1.	12.40	1.	0.	0.	0.04
ROUTED TO	RT-E56	1.	12.60	1.	0.	0.	0.04
HYDROGRAPH AT	SA E5	23.	12.30	6.	2.	1.	0.12
ROUTED TO	RT-E56	23.	12.50	6.	2.	1.	0.12
2 COMBINED AT	CP E56	24.	12.55	6.	2.	1.	0.17
ROUTED TO	RT-E4	27.	12.80	6.	2.	1.	0.17
HYDROGRAPH AT	SA E4	53.	12.45	16.	6.	2.	0.42
2 COMBINED AT	CP E4	59.	12.80	23.	8.	3.	0.59
ROUTED TO	RT-E3	58.	13.05	23.	8.	3.	0.59
HYDROGRAPH AT	SA E3	14.	12.35	4.	1.	0.	0.12
2 COMBINED AT	CP E3	63.	12.60	26.	9.	3.	0.71
ROUTED TO	RT-A1	63.	13.05	26.	9.	3.	0.71
HYDROGRAPH AT	SA E2	1.	15.60	1.	1.	0.	0.17
ROUTED TO	RT-E1	1.	16.10	1.	1.	0.	0.17
HYDROGRAPH AT	SA E1	13.	12.40	4.	1.	0.	0.12
2 COMBINED AT	CP E1	13.	12.40	5.	2.	1.	0.28
ROUTED TO	RT-A1	13.	12.50	5.	2.	1.	0.28
4 COMBINED AT	I-80	451.	12.80	164.	58.	19.	3.84
HYDROGRAPH AT	SA B17	77.	12.40	21.	7.	2.	0.41
ROUTED TO	RT-B12	77.	12.65	21.	7.	2.	0.41
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24

ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24
HYDROGRAPH AT	SA B12	80.	12.30	19.	7.	2.	0.35
3 COMBINED AT	CP B12	142.	12.60	48.	17.	6.	1.00
ROUTED TO	RT-B11	143.	12.65	48.	17.	6.	1.00
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08
2 COMBINED AT	CP B11	149.	12.65	51.	18.	6.	1.08
ROUTED TO	RT-B10	150.	12.80	51.	18.	6.	1.08
HYDROGRAPH AT	SA B9	14.	12.30	4.	1.	0.	0.09
ROUTED TO	RT-B7	14.	12.45	4.	1.	0.	0.09
HYDROGRAPH AT	SA B8	44.	12.25	10.	3.	1.	0.21
ROUTED TO	RT-B7	44.	12.40	10.	3.	1.	0.21
HYDROGRAPH AT	SA B7	7.	12.35	2.	1.	0.	0.05
3 COMBINED AT	CP B7	65.	12.45	15.	5.	2.	0.35
ROUTED TO	RT-B10	64.	12.45	15.	5.	2.	0.35
HYDROGRAPH AT	SA B10	11.	12.45	4.	1.	0.	0.12
3 COMBINED AT	CP B10	191.	12.80	70.	24.	8.	1.56
HYDROGRAPH AT	SA B6	6.	12.25	1.	1.	0.	0.03
ROUTED TO	RT-B4	7.	12.50	1.	1.	0.	0.03
HYDROGRAPH AT	SA B14	17.	12.25	4.	1.	0.	0.10
ROUTED TO	RT-B15	17.	12.40	4.	1.	0.	0.10
HYDROGRAPH AT	SA B5	4.	12.30	1.	0.	0.	0.04
ROUTED TO	RT-B15	4.	12.45	1.	0.	0.	0.04
HYDROGRAPH AT	SA B15	2.	12.35	1.	0.	0.	0.04
3 COMBINED AT	CP B15	23.	12.40	6.	2.	1.	0.18
HYDROGRAPH AT	SA B16	13.	12.25	3.	1.	0.	0.07
ROUTED TO	RT- B3	13.	12.35	3.	1.	0.	0.07
HYDROGRAPH AT	SA B3	12.	12.30	3.	1.	0.	0.07
2 COMBINED AT	CP B3	25.	12.35	6.	2.	1.	0.14
2 COMBINED AT	CP B15	46.	12.40	12.	4.	1.	0.32
ROUTED TO	RT-B4	47.	12.45	12.	4.	1.	0.32

HYDROGRAPH AT	SA B4	11.	12.25	3.	1.	0.	0.07
3 COMBINED AT	CP B4	61.	12.45	16.	6.	2.	0.43
HYDROGRAPH AT	SA B2	15.	12.40	4.	1.	0.	0.11
2 COMBINED AT	CP B4	76.	12.45	20.	7.	2.	0.54
2 COMBINED AT	CP B10	246.	12.50	90.	31.	10.	2.09
ROUTED TO	RT-B1	248.	12.55	90.	31.	10.	2.09
HYDROGRAPH AT	SA B1	9.	12.20	2.	1.	0.	0.07
2 COMBINED AT	CP B1	252.	12.55	92.	32.	11.	2.16
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66
ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66
HYDROGRAPH AT	SA C11	103.	12.25	20.	7.	2.	0.34
2 COMBINED AT	CP C11	202.	12.45	59.	20.	7.	0.99
ROUTED TO	RT-C7	202.	12.55	59.	20.	7.	0.99
HYDROGRAPH AT	SA C7	69.	12.30	16.	5.	2.	0.32
2 COMBINED AT	CP C7	245.	12.55	75.	26.	9.	1.31
ROUTED TO	RT-C5	245.	12.60	75.	26.	9.	1.31
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15
2 COMBINED AT	CP C5	259.	12.60	81.	28.	9.	1.46
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24
HYDROGRAPH AT	SA C6	15.	12.30	4.	1.	0.	0.13
2 COMBINED AT	CP C8	71.	12.40	16.	6.	2.	0.37
2 COMBINED AT	CP C5	310.	12.50	97.	33.	11.	1.83
ROUTED TO	RT-C4	314.	12.55	97.	33.	11.	1.83
HYDROGRAPH AT	SA C4	3.	12.45	2.	1.	0.	0.12
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11
ROUTED TO	RT-C4	11.	12.50	3.	1.	0.	0.11
3 COMBINED AT	CP C4	327.	12.55	102.	35.	12.	2.06
ROUTED TO	RT-C3	328.	12.60	102.	35.	12.	2.06
HYDROGRAPH AT	SA C3	22.	12.40	6.	2.	1.	0.22

2 COMBINED AT	CP C3	344.	12.60	108.	37.	12.	2.28
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17
2 COMBINED AT	CP C3	355.	12.60	114.	39.	13.	2.45
ROUTED TO	RT-C1	356.	12.65	114.	39.	13.	2.45
HYDROGRAPH AT	SA C1	10.	12.30	2.	1.	0.	0.07
2 COMBINED AT	CP C1	360.	12.65	116.	40.	13.	2.52
2 COMBINED AT	CP CB1	591.	12.60	208.	72.	24.	4.68
ROUTED TO	RT-D1	592.	12.70	208.	72.	24.	4.68
HYDROGRAPH AT	SA D1	15.	12.30	5.	2.	1.	0.22
2 COMBINED AT	MogulE	600.	12.70	213.	74.	25.	4.90
HYDROGRAPH AT	SA F1	20.	12.40	6.	2.	1.	0.20
HYDROGRAPH AT	SA F2	24.	12.30	6.	2.	1.	0.14
2 COMBINED AT	MogulW	43.	12.35	12.	4.	1.	0.33

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	62.58	753.00	0.57	3.00	62.58	753.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1250E+02 EXCESS=0.0000E+00 OUTFLOW=0.1250E+02 BASIN STORAGE=0.2748E-02 PERCENT ERROR= -0.1

RT-A6	MANE	3.00	126.06	753.00	0.68	3.00	126.06	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2578E+02 EXCESS=0.0000E+00 OUTFLOW=0.2578E+02 BASIN STORAGE=0.1428E-02 PERCENT ERROR= 0.0

RT-A5	MANE	3.00	134.44	759.00	0.64	3.00	134.44	759.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2828E+02 EXCESS=0.0000E+00 OUTFLOW=0.2828E+02 BASIN STORAGE=0.1320E-02 PERCENT ERROR= 0.0

RT-A4	MANE	3.00	143.35	762.00	0.60	3.00	143.35	762.00	0.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3107E+02 EXCESS=0.0000E+00 OUTFLOW=0.3107E+02 BASIN STORAGE=0.1109E-02 PERCENT ERROR= 0.0

RT-A9	MANE	3.00	39.25	756.00	0.79	3.00	39.25	756.00	0.79

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6619E+01 EXCESS=0.0000E+00 OUTFLOW=0.6622E+01 BASIN STORAGE=0.3590E-02 PERCENT ERROR= -0.1

RT-A8	MANE	3.00	156.75	759.00	0.74	3.00	156.75	759.00	0.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3198E+02 EXCESS=0.0000E+00 OUTFLOW=0.3198E+02 BASIN STORAGE=0.3494E-02 PERCENT ERROR= 0.0

RT-A11	MANE	3.00	51.98	750.00	0.67	3.00	51.98	750.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8961E+01 EXCESS=0.0000E+00 OUTFLOW=0.8961E+01 BASIN STORAGE=0.2695E-02 PERCENT ERROR= 0.0

RT-A2	MANE	3.00	372.25	768.00	0.62	3.00	372.25	768.00	0.62

.NUITY SUMMARY (AC-FT) - INFLOW=0.8355E+02 EXCESS=0.0000E+00 OUTFLOW=0.8355E+02 BASIN STORAGE=0.2950E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.67	386.53	770.67	0.62	3.00	386.32	768.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9015E+02 EXCESS=0.0000E+00 OUTFLOW=0.9015E+02 BASIN STORAGE=0.9783E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	385.70	774.00	0.62	3.00	385.70	774.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9014E+02 EXCESS=0.0000E+00 OUTFLOW=0.9015E+02 BASIN STORAGE=0.2404E-02 PERCENT ERROR= 0.0

RT-E56	MANE	1.35	1.28	756.00	0.20	3.00	1.28	756.00	0.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4858E+00 EXCESS=0.0000E+00 OUTFLOW=0.4864E+00 BASIN STORAGE=0.1125E-02 PERCENT ERROR= -0.4

RT-E56	MANE	3.00	23.33	750.00	0.61	3.00	23.33	750.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4011E+01 EXCESS=0.0000E+00 OUTFLOW=0.4012E+01 BASIN STORAGE=0.1771E-02 PERCENT ERROR= -0.1

RT-E4	MANE	3.00	27.49	768.00	0.50	3.00	27.49	768.00	0.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4499E+01 EXCESS=0.0000E+00 OUTFLOW=0.4504E+01 BASIN STORAGE=0.4016E-02 PERCENT ERROR= -0.2

RT-E3	MANE	3.00	57.68	783.00	0.51	3.00	57.68	783.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1598E+02 EXCESS=0.0000E+00 OUTFLOW=0.1599E+02 BASIN STORAGE=0.2251E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.04	62.94	783.18	0.49	3.00	62.71	783.00	0.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1859E+02 EXCESS=0.0000E+00 OUTFLOW=0.1859E+02 BASIN STORAGE=0.5213E-03 PERCENT ERROR= 0.0

RT-E1	MANE	3.00	1.28	972.00	0.11	3.00	1.28	972.00	0.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1003E+01 EXCESS=0.0000E+00 OUTFLOW=0.1003E+01 BASIN STORAGE=0.2248E-02 PERCENT ERROR= -0.3

RT-A1	MANE	3.00	13.22	750.00	0.25	3.00	13.22	750.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3681E+01 EXCESS=0.0000E+00 OUTFLOW=0.3681E+01 BASIN STORAGE=0.1370E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	76.96	759.00	0.65	3.00	76.96	759.00	0.65

NUITY SUMMARY (AC-FT) - INFLOW=0.1438E+02 EXCESS=0.0000E+00 OUTFLOW=0.1438E+02 BASIN STORAGE=0.4274E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	24.40	756.00	0.45	3.00	24.40	756.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5701E+01 EXCESS=0.0000E+00 OUTFLOW=0.5704E+01 BASIN STORAGE=0.2449E-02 PERCENT ERROR= -0.1

RT-B11	MANE	3.00	142.75	759.00	0.62	3.00	142.75	759.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3320E+02 EXCESS=0.0000E+00 OUTFLOW=0.3320E+02 BASIN STORAGE=0.9299E-03 PERCENT ERROR= 0.0

RT-B10	MANE	3.00	150.41	768.00	0.61	3.00	150.41	768.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3528E+02 EXCESS=0.0000E+00 OUTFLOW=0.3529E+02 BASIN STORAGE=0.3015E-02 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	14.27	747.00	0.55	3.00	14.27	747.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2481E+01 EXCESS=0.0000E+00 OUTFLOW=0.2481E+01 BASIN STORAGE=0.1290E-02 PERCENT ERROR= -0.1

RT-B7	MANE	3.00	43.79	744.00	0.59	3.00	43.79	744.00	0.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6594E+01 EXCESS=0.0000E+00 OUTFLOW=0.6597E+01 BASIN STORAGE=0.2047E-02 PERCENT ERROR= -0.1

RT-B10	MANE	2.78	64.43	748.96	0.57	3.00	63.85	747.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1046E+02 EXCESS=0.0000E+00 OUTFLOW=0.1046E+02 BASIN STORAGE=0.6494E-03 PERCENT ERROR= 0.0

RT-B4	MANE	3.00	6.60	750.00	0.55	3.00	6.60	750.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1004E+01 EXCESS=0.0000E+00 OUTFLOW=0.1005E+01 BASIN STORAGE=0.1712E-02 PERCENT ERROR= -0.2

RT-B15	MANE	3.00	17.46	744.00	0.54	3.00	17.46	744.00	0.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2819E+01 EXCESS=0.0000E+00 OUTFLOW=0.2819E+01 BASIN STORAGE=0.1443E-02 PERCENT ERROR= -0.1

RT-B15	MANE	2.55	3.84	747.15	0.35	3.00	3.84	747.00	0.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7816E+00 EXCESS=0.0000E+00 OUTFLOW=0.7820E+00 BASIN STORAGE=0.9290E-03 PERCENT ERROR= -0.2

RT- B3	MANE	3.00	12.89	741.00	0.54	3.00	12.89	741.00	0.54

.NUITY SUMMARY (AC-FT) - INFLOW=0.2007E+01 EXCESS=0.0000E+00 OUTFLOW=0.2007E+01 BASIN STORAGE=0.1080E-02 PERCENT ERROR= -0.1

RT-B4	MANE	3.00	46.94	747.00	0.48	3.00	46.94	747.00	0.48

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8210E+01 EXCESS=0.0000E+00 OUTFLOW=0.8211E+01 BASIN STORAGE=0.7660E-03 PERCENT ERROR= 0.0

RT-B1	MANE	3.00	248.15	753.00	0.56	3.00	248.15	753.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6229E+02 EXCESS=0.0000E+00 OUTFLOW=0.6230E+02 BASIN STORAGE=0.1061E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	202.06	753.00	0.76	3.00	202.06	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4008E+02 EXCESS=0.0000E+00 OUTFLOW=0.4009E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	245.22	756.00	0.73	3.00	245.21	756.00	0.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5073E+02 EXCESS=0.0000E+00 OUTFLOW=0.5073E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT-C4	MANE	3.00	313.61	753.00	0.67	3.00	313.61	753.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6585E+02 EXCESS=0.0000E+00 OUTFLOW=0.6586E+02 BASIN STORAGE=0.1284E-02 PERCENT ERROR= 0.0

RT-C4	MANE	3.00	10.70	750.00	0.36	3.00	10.70	750.00	0.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2181E+01 EXCESS=0.0000E+00 OUTFLOW=0.2182E+01 BASIN STORAGE=0.1209E-02 PERCENT ERROR= -0.1

RT-C3	MANE	3.00	327.93	756.00	0.63	3.00	327.93	756.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6933E+02 EXCESS=0.0000E+00 OUTFLOW=0.6934E+02 BASIN STORAGE=0.1123E-02 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	355.77	759.00	0.59	3.00	355.77	759.00	0.59

.NUITY SUMMARY (AC-FT) - INFLOW=0.7739E+02 EXCESS=0.0000E+00 OUTFLOW=0.7739E+02 BASIN STORAGE=0.1114E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	591.99	762.00	0.57	3.00	591.99	762.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1428E+03 BASIN STORAGE=0.2165E-02 PERCENT ERROR= 0.0

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

HEC-1 Output
5-Year Proposed (Phase I to V) Condition Analysis
Without Detention

WRC NEVADA, INC.

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
* RUN DATE  05/06/98  TIME  01:40:38    *
*****************************************
```

```
*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*        609 SECOND STREET              *
*      DAVIS, CALIFORNIA 95616          *
*        (916) 551-1748                 *
*                                       *
*****************************************
```

```
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

```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
          *DIAGRAM
    1     ID   ================================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                          |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                     |
    4     ID   | DEVELOPED CONDITION WITHOUT DETENTION BASINS
    5     ID   | Washoe County, Nevada                                                        |
    6     ID   |                                                                              |
    7     ID   |  5-Year Analysis                                                             |
    8     ID   |    - For offsite areas                                                       |
    9     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                          |
   10     ID   |    - Rainfall entered using hypothetical storm option                        |
   11     ID   |    - Rainfall data estimated using revised NOAA precipitation data           |
   12     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55       |
   13     ID   |      (SCS, 1986)  or NEH-4 (SCS, 1972)                                      |
   14     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)    |
   15     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.           |
   16     ID   |                                                                              |
   17     ID   | File: SOMDV005.DAT                                WRC NEVADA, INC.           |
   18     ID   | APRIL 1998                                        1575 DELUCCHI LN STE.207A  |
   19     ID   | Project No.   3011                                Reno, Nevada  89502        |
   20     ID   |                                                  (702)332-3737,FAX 332-3740 |
   21     ID   ================================================================================
   22     IT      3       0       0    1441
   23     IO      5       0       0
          *
          *
          * *********   WATERSHED SUBAREA A    *************
          *
          *

   24     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   25     PH       1            0.22    0.41    0.68    0.92    1.11    1.50    2.00    2.51
   26     BA  0.4094
   27     LS       0      73
   28     UD    0.32
          *

   29     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   30     RD    5700    0.14    0.07            TRAP       6       3
          *

   31     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   32     PH       1            0.21    0.38    0.63    0.87    1.05    1.43    1.89    2.34
   33     BA  0.3002
   34     LS       0      79
   35     UD    0.31
          *

   36     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   37     HC       2
          *
```

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

  38      KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
  39      RD     700   0.140    0.07           TRAP       6       3
          *

  40      KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
  41      PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  42      BA  0.0583
  43      LS       0      78
  44      UD    0.14
          *

  45      KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
  46      HC       2
          *

  47      KK  RT-A6b ROUTE HDROGRAPH TO OUTLET OF AREA A6b
  48      RD    2400   0.069    0.07           TRAP       6       3
          *

  49      KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
  50      PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  51      BA  0.0508
  52      LS       0      81
  53      UD    0.15
          *

  54      KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
  55      HC       2
          *

  56      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  57      RD    1100   0.055    0.07           TRAP       6       3
          *

  58      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  59      PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  60      BA  0.1291
  61      LS       0      87
  62      UD    0.18
          *

  63      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  64      HC       2
          *

  65      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  66      RD    2900   0.055     .07           TRAP       6       3
          *
```

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

  67      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  68      PH       1           0.18    0.33    0.56    0.76    0.92    1.25    1.68    2.11
  69      BA  0.1329
  70      LS       0      80
  71      UD    0.19
          *

  72      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  73      PH       1           0.19    0.34    0.57    0.78    0.94    1.27    1.72    2.16
  74      BA  0.0405
  75      LS       0      66
  76      UD    0.20
          *

  77      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  78      HC       3
          *

  79      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  80      PH       1           0.22    0.39    0.65    0.89    1.06    1.43    1.90    2.37
  81      BA  0.2819
  82      LS       0      79
  83      UD    0.30
          *

  84      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
  85      PH       1           0.22    0.41    0.68    0.92    1.10    1.48    2.00    2.51
  86      BA  0.1563
  87      LS       0      78
  88      UD    0.29
          *

  89      KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
  90      RD    6800   0.165     .08          TRAP       6       3
          *

  91      KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
  92      PH       1           0.22    0.39    0.65    0.89    1.07    1.44    1.91    2.38
  93      BA  0.3636
  94      LS       0      78
  95      UD    0.33
          *

  96      KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
  97      HC       2
          *

  98      KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
  99      HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  100     KK  RT-A8A ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8A
  101     RD    1500   0.060     .07           TRAP       6       3
          *

  102     KK  SA A8A GENERATE HYDOGRAPH FOR SUB-AREA A8A
  103     PH       1           0.20    0.36    0.60    0.82    0.98    1.33    1.78    2.23
  104     BA  0.0548
  105     LS       0      79
  106     UD    0.19
          *

  107     KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
  108     HC       2
          *

  109     KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
  110     PH       1           0.21    0.38    0.64    0.86    1.03    1.38    1.85    2.32
  111     BA  0.1912
  112     LS              79
  113     UD    0.28
          *

  114     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  115     PH       1           0.21    0.38    0.63    0.85    1.01    1.37    1.83    2.30
  116     BA  0.0564
  117     LS       0      78
  118     UD    0.22
          *

  119     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  120     HC       2
          *

  121     KK  RT-A8B ROUTE COMBINED HYDROGRAPH A9&10 TO OUTLET OF A8B
  122     RD    3300  0.0550    0.07           TRAP       6       3
          *

  123     KK  SA A8B GENERATE HYDROGRAPH FOR SUB AREA A8B
  124     PH       1           0.20    0.36    0.60    0.82    0.98    1.33    1.78    2.23
  125     BA  0.1428
  126     LS       0      76
  127     UD    0.21
          *

  128     KK  CP A8B COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  129     HC       3
          *

  130     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  131     PH       1           0.20    0.37    0.61    0.82    0.97    1.30    1.75    2.20
  132     BA  0.1068
  133     LS       0      75
  134     UD    0.33
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  135     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A11, A8
  136     HC       3
          *

  137     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  138     RD    4400  0.0386     .07           TRAP       6       3
          *

  139     KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
  140     PH       1            0.18    0.33    0.56    0.76    0.91    1.24    1.67    2.11
  141     BA  0.1974
  142     LS       0      77
  143     UD    0.28
          *

  144     KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
  145     HC       2
          *

  146     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
  147     RD    1500    0.07    0.07           TRAP       6       3
          *

  148     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
  149     RD    2400  0.0125   0.040           TRAP      15       3
          *

  150     KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
  151     PH                   0.18    0.33    0.54    0.74    0.89    1.20    1.61    2.02
  152     BA  0.1127
  153     LS       0      76
  154     UD    0.33
          *
          *
          * ************   WATERSHED SUBAREA E ******************
          *
          *

  155     KK  SA E6A GENERATE HYDROGRAPH FOR SUB AREA E6A
  156     PH       1            0.20    0.37    0.61    0.82    0.97    1.30    1.76    2.23
  157     BA  0.0348
  158     LS       0      88
  159     UD    0.09
          *

  160     KK  RT-E6B ROUTE HYDROGRAPH TO OUTLET OF E6B
  161     RD     450    0.05    0.07           trap       6       3
          *
```

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

  162     KK  SA E6B GENERATE HYDOGRAPH FOR SUB-AREA E6B
  163     PH                  0.20    0.37    0.61    0.82    0.97    1.30    1.76    2.23
  164     BA   .0106
  165     LS      0      87
  166     UD     .06
          *

  167     KK    C-E6 COMBINE HYDROGRAPHS FOR E6 A AND B
  168     HC       2
          *

  169     KK  RT-E64 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
  170     RD    1900   .0658     .07           TRAP       6       3
          *

  171     KK     E5B GENERATE HYDOGRAPH FOR SUB-AREA E5B
  172     PH       1          0.20    0.37    0.61    0.83    0.99    1.34    1.81    2.28
  173     BA   .0893
  174     LS       0      91
  175     UD     .17
          *

  176     KK  RT-E5B ROUTE HYDROGRAPH TO OUTLET OF E5A
  177     RD     900     .08     .07           TRAP       6       3
          *

  178     KK     E5A GENERATE HYDROGRAPH FOR SUB-AREA E5A
  179     PH       1             .20     .37    0.61    0.82     .98    1.31    1.75    2.19
  180     BA   .0347
  181     LS       0      92
  182     UD     .10
          *

  183     KK    C-E5 COMBINE HYDROGRAPHS FROM E5 A AND B
  184     HC       2
          *

  185     KK  RT-E54 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  186     RD    2500    .036     .07           TRAP       6       3
          *

  187     KK   C-E56 COMBINE HYDROGRAPHS FROM E5 and E6
  188     HC       2
          *

  189     KK   RT-E4 ROUTE HYDROGRAPH TO OUTLET OF E4
  190     RD    4500    .031     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  191     KK  SA  E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
  192     PH       1           0.19    0.35    0.58    0.79    0.94    1.26    1.72    2.18
  193     BA  0.4466
  194     LS       0      80
  195     UD    0.34
          *

  196     KK  CP  E4 COMBINE HYDROGRAPH  E4 W/HYDROGRAPH E5 AND E6
  197     HC       2
          *

  198     KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
  199     RD    3500  0.0429     .07           TRAP       6       3
          *

  200     KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
  201     PH       1           0.19    0.34    0.57    0.76    0.90    1.20    1.63    2.06
  202     BA  0.1191
  203     LS       0      75
  204     UD    0.27
          *

  205     KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
  206     HC       2
          *

  207     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  208     RD     500  0.0125     .04           TRAP      15       3
          *

  209     KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
  210     PH       1           0.19    0.34    0.57    0.77    0.92    1.24    1.68    2.12
  211     BA  0.1597
  212     LS       0      62
  213     UD    0.38
          *

  214     KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
  215     RD    3200  0.0375     .07           TRAP       6       3
          *

  216     KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
  217     PH       1           0.18    0.33    0.56    0.75    0.89    1.20    1.62    2.04
  218     BA  0.1156
  219     LS       0      76
  220     UD    0.31
          *

  221     KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
  222     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  223     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  224     RD    1200  0.0125     .04           TRAP      15      3
          *

  225     KK    I-80
  226     KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
  227     HC       4
          *
          *
          * *********   WATERSHED SUBAREA B    **************
          *
          *
          *

  228     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
  229     PH       1            0.22    0.40    0.67    0.91    1.10    1.50    1.96    2.43
  230     BA  0.4136
  231     LS       0      74
  232     UD    0.32
          *

  233     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
  234     RD    3900  0.0133     .07           TRAP       6      3
          *

  235     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  236     PH       1            0.22    0.40    0.67    0.91    1.10    1.48    1.98    2.48
  237     BA  0.2400
  238     LS       0      70
  239     UD    0.33
          *

  240     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  241     RD    4500  0.1510     .08           TRAP       6      3
          *

  242     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  243     PH       1            0.20    0.37    0.61    0.85    1.03    1.40    1.85    2.30
  244     BA  0.3484
  245     LS       0      75
  246     UD    0.26
          *

  247     KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  248     HC       3
          *

  249     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  250     RD    2000  0.1000     .07           TRAP       6      3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  251     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  252     PH       1            0.19    0.35    0.58    0.79    0.95    1.27    1.70    2.12
  253     BA  0.0777
  254     LS       0      76
  255     UD    0.24
          *

  256     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  257     HC       2
          *

  258     KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  259     RD    3100  0.0710     .07           TRAP       6       3
          *

  260     KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  261     PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  262     BA  0.1056
  263     LS       0      84
  264     UD    0.24
          *

  265     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  266     HC       2
          *

  267     KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  268     PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  269     BA  0.2445
  270     LS       0      76
  271     UD    0.23
          *

  272     KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  273     RD    1100  0.0770     .07           TRAP       6       3
          *

  274     KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  275     PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  276     BA  0.0382
  277     LS       0      84
  278     UD    0.16
          *

  279     KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  280     PH       1            0.19    0.34    0.57    0.78    0.93    1.26    1.69    2.11
  281     BA  0.0591
  282     LS       0      79
  283     UD    0.26
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  284     KK  CP 88b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  285     HC       3
          *

  286     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  287     RD    2200  0.0680     .07           TRAP       6       3
          *

  288     KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  289     PH       1            0.18    0.32    0.53    0.73    0.89    1.21    1.62    2.04
  290     BA  0.0240
  291     LS       0      78
  292     UD    0.21
          *

  293     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  294     HC       3
          *

  295     KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  296     RD     500  0.0500     .07           TRAP       6       3
          *

  297     KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  298     PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  299     BA  0.0360
  300     LS       0      87
  301     UD    0.10
          *

  302     KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
  303     HC       2
          *

  304     KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
  305     RD     800  0.0563     .07           TRAP       6       3
          *

  306     KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
  307     PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  308     BA  0.0126
  309     LS       0      87
  310     UD    0.10
          *

  311     KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
  312     HC       2
          *
```

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

  313     KK  SAB14b GENERATE HYDOGRAPH FOR SUB-AREA B14b
  314     PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
  315     BA  0.0387
  316     LS       0      78
  317     UD    0.22
          *

  318     KK  RT-B16 ROUTE HYDROGRAPH FROM B14b TO OUTLET OF B16
  319     RD    2000  0.0500    .035           TRAP       6       3
          *

  320     KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
  321     PH       1            0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
  322     BA    .094
  323     LS       0      86
  324     UD    0.24
          *

  325     KK  CP B16 COMBINE HYDROGRAPH FROM AREAS B16 W/HYDROGRAPHS FROM AREA B14b
  326     HC       2
          *

  327     KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
  328     RD     400  0.0533     .05           TRAP       6       3
          *

  329     KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
  330     PH       1            0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
  331     BA    .046
  332     LS       0      84
  333     UD    0.17
          *

  334     KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
  335     HC       2
          *

  336     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  337     PH       1            0.18    0.33    0.56    0.77    0.93    1.27    1.69    2.11
  338     BA    .029
  339     LS       0      78
  340     UD     .20
          *

  341     KK  RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
  342     RD    1775   .0620     .07           TRAP       5       2
          *

  343     KK  SAB14a GENERATE HYDOGRAPH FOR SUB-AREA B14a
  344     PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
  345     BA  0.0490
  346     LS       0      78
  347     UD    0.22
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 348      KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B14a TO OUTLET OF AREA B5
 349      RD    2325   .0538     .07           TRAP       5       2
          *

 350      KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
 351      PH       1            0.18    0.33    0.56    0.76    0.92    1.25    1.65    2.06
 352      BA    .078
 353      LS       0      80
 354      UD    0.23
          *

 355      KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5, B6, B3, and B14a
 356      HC       4
          *

 357      KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
 358      RD     700  0.0500     .06           TRAP       6       3
          *

 359      KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
 360      RD     900  0.0390     .07           TRAP       6       3
          *

 361      KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
 362      PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
 363      BA  0.0360
 364      LS       0      85
 365      UD    0.14
          *

 366      KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
 367      HC       2
          *

 368      KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
 369      RD     950  0.0260     .07           TRAP       6       3
          *

 370      KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
 371      PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
 372      BA  0.0523
 373      LS       0      86
 374      UD    0.12
          *

 375      KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
 376      RD    1800  0.0890     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  377     KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
  378     PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
  379     BA  0.1255
  380     LS       0      86
  381     UD    0.15
          *

  382     KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
  383     HC       2
          *

  384     KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
  385     RD    2100  0.0430    .07           TRAP       6       3
          *

  386     KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
  387     PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
  388     BA  0.0592
  389     LS       0      84
  390     UD    0.19
          *

  391     KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
  392     HC       3
          *

  393     KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
  394     HC       2
          *

  395     KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
  396     RD    1400  0.0286     .07           TRAP       6       3
          *

  397     KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
  398     PH       1            0.17    0.31    0.52    0.71    0.86    1.17    1.57    1.97
  399     BA  0.0527
  400     LS       0      83
  401     UD    0.15
          *

  402     KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
  403     HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    **************
          *
          *
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 404      KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
 405      PH       1            0.23    0.42    0.71    0.95    1.14    1.53    2.03    2.53
 406      BA  0.6580
 407      LS       0      77
 408      UD    0.33
          *

 409      KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
 410      RD    4800  0.1583     .07           TRAP       6       3
          *

 411      KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
 412      PH       1            0.22    0.39    0.65    0.89    1.06    1.43    1.87    2.30
 413      BA  0.3156
 414      LS       0      80
 415      UD    0.19
          *

 416      KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
 417      HC       2
          *

 418      KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
 419      RD    5500  0.1091     .07           TRAP       6       3
          *

 420      KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
 421      PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.71    2.11
 422      BA  0.3359
 423      LS       0      80
 424      UD    0.26
          *

 425      KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
 426      HC       2
          *

 427      KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
 428      RD    3000  0.0933     .07           TRAP       6       3
          *

 429      KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
 430      PH       1            0.18    0.33    0.56    0.75    0.89    1.20    1.60    2.00
 431      BA  0.1528
 432      LS       0      78
 433      UD    0.27
          *

 434      KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
 435      HC       2
          *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

436       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
437       PH       1            0.20    0.36    0.60    0.81    0.97    1.31    1.74    2.16
438       BA  0.2380
439       LS       0      80
440       UD    0.23
          *

441       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
442       RD    3200  0.0750     .07           TRAP       6       3
          *

443       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
444       PH       1            0.18    0.33    0.56    0.76    0.91    1.24    1.64    2.05
445       BA  0.0956
446       LS       0      77
447       UD    0.25
          *

448       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
449       HC       2
          *

450       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
451       HC       2
          *

452       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
453       RD    1100   0.055     .07           TRAP       6       3
          *

454       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
455       PH       1            0.18    0.32    0.53    0.72    0.86    1.16    1.55    1.95
456       BA  0.1147
457       LS       0      75
458       UD    0.27
          *

459       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
460       HC       2
          *

461       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
462       RD    1200  0.0580     .07           TRAP       6       3
          *

463       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
464       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
465       BA  0.0930
466       LS       0      79
467       UD    0.20
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

468       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
469       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
470       BA  0.0384
471       LS       0      77
472       UD    0.18
          *

473       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
474       HC       3
          *

475       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
476       RD    1200     .04     .07           TRAP       6       3
          *

477       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
478       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
479       BA     .12
480       LS       0      76
481       UD     .27
          *

482       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
483       HC       2
          *

484       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
485       RD     950     .05     .07           TRAP       6       3
          *

486       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
487       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
488       BA      .1
489       LS       0      78
490       UD     .30
          *

491       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
492       HC       2
          *

493       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
494       PH       1            0.17    0.30    0.50    0.67    0.80    1.07    1.45    1.84
495       BA  0.1705
496       LS       0      78
497       UD    0.25
          *

498       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
499       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

500       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
501       RD    1500  0.0400     .07           TRAP       6       3
          *

502       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
503       PH       1           0.17    0.30    0.50    0.69    0.83    1.13    1.53    1.92
504       BA  0.0809
505       LS       0      79
506       UD    0.24
          *

507       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
508       HC       2
          *

509       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
510       HC       2
          *

511       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
512       RD    3200  0.0500     .07           TRAP       6       2
          *

513       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
514       PH       1           0.17    0.31    0.52    0.70    0.85    1.14    1.55    1.96
515       BA  0.2191
516       LS       0      78
517       UD    0.24
          *

518       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
519       KM        MOGUL MEADOWS EAST CHANNEL DISCHARGE
520       HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    **************
          *
          *

521       KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
522       PH       1           0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
523       BA   .0726
524       LS       0      82
525       UD     .13
          *

526       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
527       RD    2700     .11     .07           TRAP      10       4
          *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  528     KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
  529     PH       1           0.18   0.32   0.53   0.72   0.87   1.17   1.58   2.00
  530     BA     .11
  531     LS       0      79
  532     UD     .20
          *

  533     KK      F1 Combine Hydrographs at F1
  534     HC       2
          *

  535     KK  SA   F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
  536     PH       1           0.18   0.33   0.54   0.74   0.89   1.20   1.62   2.04
  537     BA  0.1352
  538     LS       0      79
  539     UD    0.25
          *

  540     KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  541     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  542     HC       2
  543     ZZ
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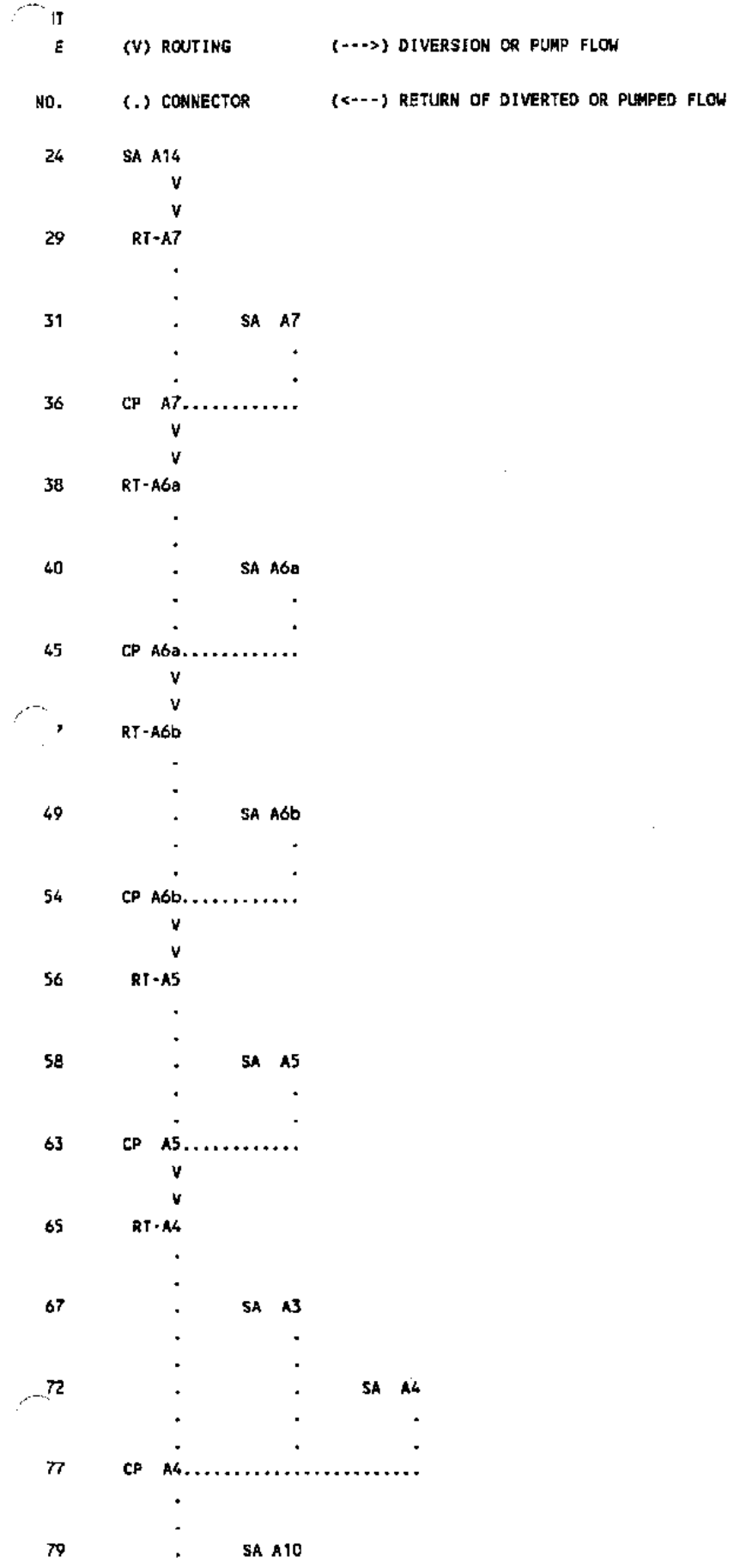
SCHEMATIC DIAGRAM OF STREAM NETWORK



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                .         .
                .         .
 84             .         .      SA A15
                .         .          V
                .         .          V
 89             .         .       RT-A9
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 91             .         .          .      SA  A9
                .         .          .           .
                .         .          .           .
 96             .         .       CP  A9.........
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                .         .          .
 98             .      CPA910.........
                .         V
                .         V
100             .      RT-A8A
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102             .         .      SA A8A
                .         .          .
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107             .      CP A8a.........
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                .         .
109             .         .      SA A13
                .         .          .
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                .         .          .      SA A12
                .         .          .           .
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119             .         .      CP A12.........
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                .         .          V
121             .         .      RT-A8B
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123             .         .          .      SA A8B
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                .         .          .           .
128             .      CP A8B.....................
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                .         .
130             .         .      SA A11
                .         .          .
                .         .          .
135          CP4811.....................
                V
                V
137          RT-A2
                .
                .
139             .      SA  A2
                .         .
                .         .
144          CP  A2.........
                V
                V
146          RT-A1
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                V
                V
148         RT-A1
                .
                .
150             .     SA  A1
                .       .
                .       .
155             .       .     SA E6A
                .       .       V
                .       .       V
160             .       .     RT-E6B
                .       .       .
                .       .       .
162             .       .       .       SA E6B
                .       .       .         .
                .       .       .         .
167             .       .     C-E6.........
                .       .       V
                .       .       V
169             .       .     RT-E64
                .       .       .
                .       .       .
171             .       .       .         E5B
                .       .       .           V
                .       .       .           V
176             .       .       .       RT-E5B
                .       .       .         .
                .       .       .         .
                .       .       .         .       E5A
                .       .       .         .         .
                .       .       .         .         .
183             .       .       .       C-E5.........
                .       .       .         V
                .       .       .         V
185             .       .       .       RT-E54
                .       .       .         .
                .       .       .         .
187             .       .     C-E56.........
                .       .       V
                .       .       V
189             .       .     RT-E4
                .       .       .
                .       .       .
191             .       .       .       SA  E4
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                .       .       .         .
196             .       .     CP  E4.........
                .       .       V
                .       .       V
198             .       .     RT-E3
                .       .       .
                .       .       .
200             .       .       .       SA  E3
                .       .       .         .
                .       .       .         .
205             .       .     CP  E3.........
                .       .       V
                .       .       V
207             .       .     RT-A1
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                .          .          .
                .          .          .
209             .          .          .      SA  E2
                .          .          .          V
                .          .          .          V
214             .          .          .       RT-E1
                .          .          .          .
                .          .          .          .
216             .          .          .          .      SA  E1
                .          .          .          .          .
                .          .          .          .          .
221             .          .          .       CP  E1.........
                .          .          .          V
                .          .          .          V
223             .          .          .       RT-A1
                .          .          .          .
                .          .          .          .
225          I-80.....................................
                .
                .
228             .     SA B17
                .          V
                .          V
233             .     RT-B12
                .          .
                .          .
235             .          .     SA B13
                .          .          V
                .          .          V
                .          .     RT-B12
                .          .          .
                .          .          .
242             .          .          .      SA B12
                .          .          .          .
                .          .          .          .
247             .     CP B12.....................
                .          V
                .          V
249             .     RT-B11
                .          .
                .          .
251             .          .     SA B11
                .          .          .
                .          .          .
256             .     CP B11.........
                .          V
                .          V
258             .     RT-10a
                .          .
                .          .
260             .          .     SAB10a
                .          .          .
                .          .          .
265             .     CPB10a.........
                .          .
                .          .
267             .          .     SA 88a
                .          .          V
                .          .          V
272             .          .     RT-88b
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274 SA B8b

279 SA B9

284 CP B8b.....

286 RT-B7

288 SA B7

293 CPB10a.....

295 RT-10b

297 SAB10b

302 CPB10b.....

RT-10c

306 SAB10c

311 CPB10c.....

313 SAB14b

318 RT-B16

320 SA B16

325 CP B16.....

327 RT- B3

329 SA B3

334 CP B3.....

336 SA B6

```
                                    V
                                    V
341                                 RT-B5
                                      .
                                      .
343                                   .        SAB14a
                                      .           V
                                      .           V
348                                   .        RT-B5
                                      .           .
                                      .           .
350                                   .           .        SA  B5
                                      .           .          .
                                      .           .          .
355                                CP B5.....................
                                      V
                                      V
357                                RT-B5
                                      V
                                      V
359                                RT-B4
                                      .
                                      .
361                                   .        SA B4
                                      .           .
                                      .           .
366                                CP  B4.....
                                      V
                                      V
  1                                RT-B2c
                                      .
                                      .
370                                   .        SA B2a
                                      .           V
                                      .           V
375                                   .        RT-B2b
                                      .           .
                                      .           .
377                                   .           .        SA B2b
                                      .           .          .
                                      .           .          .
382                                   .        CP B2b.....
                                      .           V
                                      .           V
384                                   .        RT-B2c
                                      .           .
                                      .           .
386                                   .           .        SA B2c
                                      .           .          .
                                      .           .          .
391                                CP B2c.....................
                                      .
                                      .
393                             CPB10c.....
                                   V
                                   V
395                             RT-B1
                                   .
                                   .
397                                SA  B1
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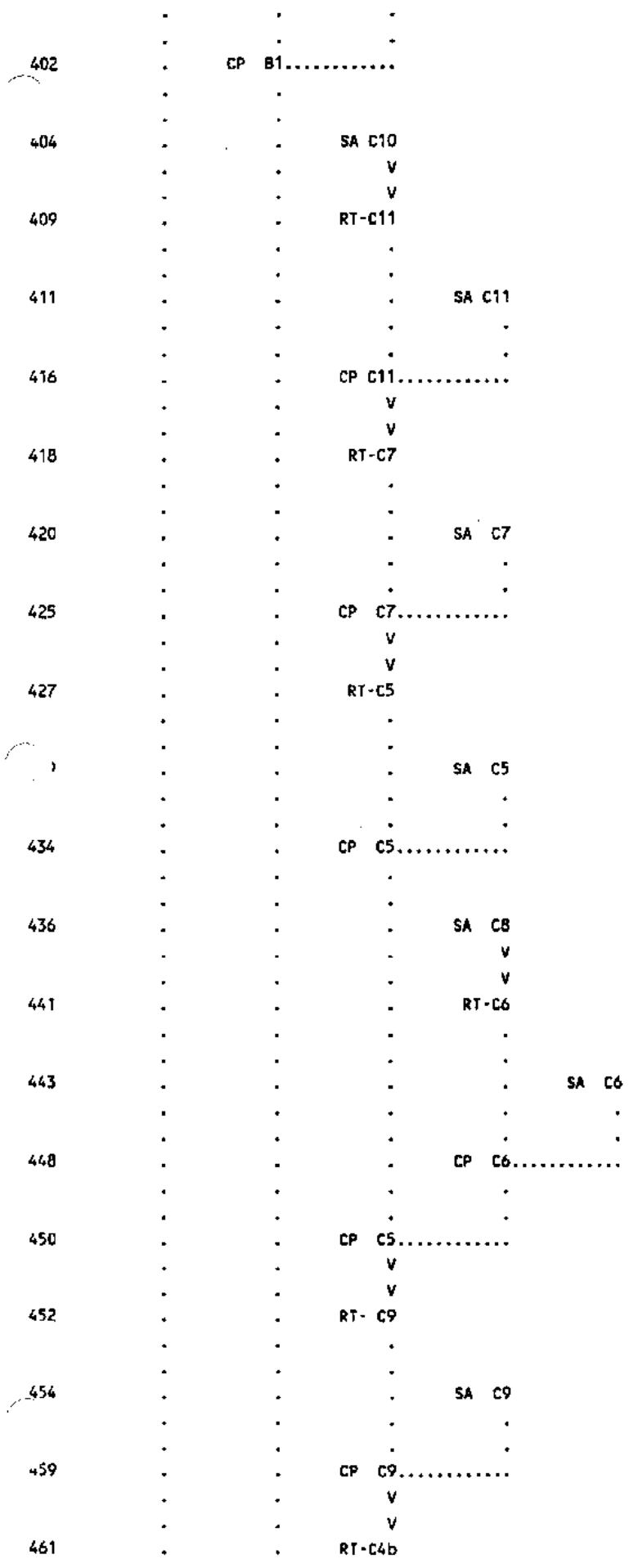
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409 RT-C11
411 SA C11
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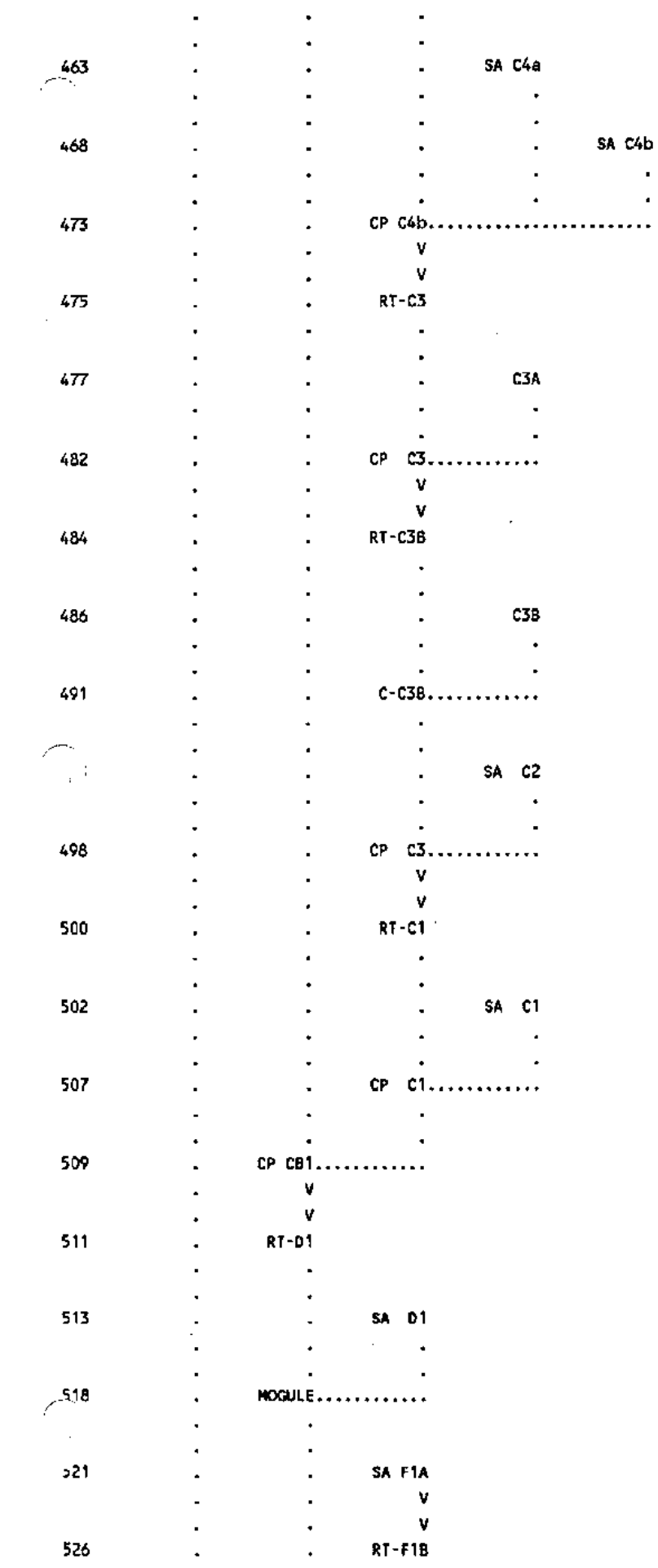
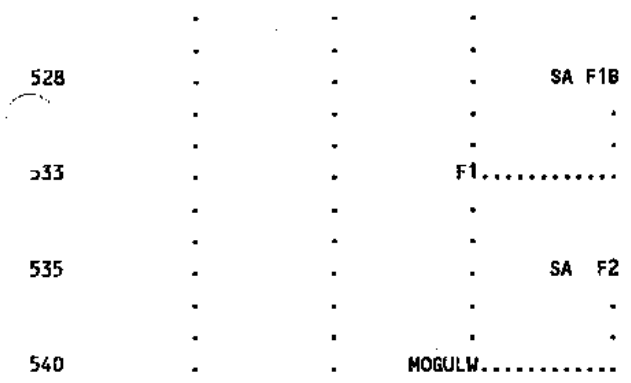
418 RT-C7
420 SA C7
425 CP C7
427 RT-C5
SA C5
434 CP C5
436 SA C8
441 RT-C6
443 SA C6
448 CP C6
450 CP C5
452 RT- C9
454 SA C9
459 CP C9
461 RT-C4b


463
SA C4a
468
SA C4b
473
CP C4b
475
RT-C3
477
C3A
482
CP C3
484
RT-C3B
486
C3B
491
C-C3B
498
CP C3
500
RT-C1
502
SA C1
507
CP C1
509
CP CB1
511
RT-D1
513
SA D1
518
MODULE
521
SA F1A
526
RT-F1B



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY  1991                *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  01:40:38   *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748               *
*                                       *
*****************************************
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SOMERSETT PLANNED UNIT DEVELOPEMENT
DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
DEVELOPED CONDITION WITHOUT DETENTION BASINS
Washoe County, Nevada

 5-Year Analysis
   - For offsite areas
   - Watersheds measured from USGS 7.5 Minute Quads
   - Rainfall entered using hypothetical storm option
   - Rainfall data estimated using revised NOAA precipitation data
   - Curve number estimates based on Sage-Grass, as described in TR-55
     (SCS, 1986)  or NEH-4 (SCS, 1972)
   - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)
     as modified for the Washoe County Hydrologic Criteria Manual.

File: SOMDV005.DAT                          WRC NEVADA, INC.
APRIL 1998                                  1575 DELUCCHI LN STE.207A
Project No.   3011                          Reno, Nevada  89502
                                           (702)332-3737,FAX 332-3740
```

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23 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
                  NO       1441  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE     4   0  ENDING DATE
               NDTIME      0000  ENDING TIME
               ICENT         19  CENTURY MARK

             COMPUTATION INTERVAL    0.05 HOURS
                 TOTAL TIME BASE   72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	62.	12.40	18.	6.	2.	0.41		
ROUTED TO	RT-A7	63.	12.55	18.	6.	2.	0.41		
HYDROGRAPH AT	SA A7	66.	12.35	17.	6.	2.	0.30		
2 COMBINED AT	CP A7	116.	12.50	35.	12.	4.	0.71		
ROUTED TO	RT-A6a	116.	12.50	35.	12.	4.	0.71		
HYDROGRAPH AT	SA A6a	14.	12.20	3.	1.	0.	0.06		
2 COMBINED AT	CP A6a	120.	12.50	38.	13.	4.	0.77		
ROUTED TO	RT-A6b	121.	12.60	38.	13.	4.	0.77		
HYDROGRAPH AT	SA A6b	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP A6b	125.	12.60	41.	14.	5.	0.82		
ROUTED TO	RT-A5	125.	12.65	41.	14.	5.	0.82		
HYDROGRAPH AT	SA A5	56.	12.20	10.	4.	1.	0.13		
2 COMBINED AT	CP A5	141.	12.60	50.	18.	6.	0.95		
ROUTED TO	RT-A4	142.	12.75	50.	18.	6.	0.95		
HYDROGRAPH AT	SA A3	31.	12.25	6.	2.	1.	0.13		
HYDROGRAPH AT	SA A4	1.	12.35	1.	0.	0.	0.04		
3 COMBINED AT	CP A4	152.	12.75	57.	20.	7.	1.12		
HYDROGRAPH AT	SA A10	66.	12.35	17.	6.	2.	0.28		
HYDROGRAPH AT	SA A15	39.	12.35	10.	3.	1.	0.16		
ROUTED TO	RT-A9	39.	12.60	10.	3.	1.	0.16		
HYDROGRAPH AT	SA A9	75.	12.40	20.	7.	2.	0.36		
2 COMBINED AT	CP A9	102.	12.50	30.	10.	3.	0.52		
2 COMBINED AT	CPA910	157.	12.50	46.	16.	5.	0.80		
ROUTED TO	RT-A8A	156.	12.55	46.	16.	5.	0.80		
HYDROGRAPH AT	SA A8A	14.	12.25	3.	1.	0.	0.05		
2 COMBINED AT	CP A8a	162.	12.55	49.	17.	6.	0.86		

HYDROGRAPH AT	SA A13	44.	12.35	11.	4.	1.	0.19
HYDROGRAPH AT	SA A12	13.	12.25	3.	1.	0.	0.06
2 COMBINED AT	CP A12	57.	12.30	14.	5.	2.	0.25
ROUTED TO	RT-A8B	57.	12.45	14.	5.	2.	0.25
HYDROGRAPH AT	SA A8B	26.	12.25	6.	2.	1.	0.14
3 COMBINED AT	CP A8B	234.	12.45	69.	24.	8.	1.25
HYDROGRAPH AT	SA A11	14.	12.40	4.	1.	0.	0.11
3 COMBINED AT	CP4811	380.	12.45	130.	45.	15.	2.47
ROUTED TO	RT-A2	380.	12.60	130.	45.	15.	2.47
HYDROGRAPH AT	SA A2	29.	12.35	8.	3.	1.	0.20
2 COMBINED AT	CP A2	400.	12.55	138.	48.	16.	2.67
ROUTED TO	RT-A1	400.	12.60	137.	48.	16.	2.67
ROUTED TO	RT-A1	399.	12.70	137.	48.	16.	2.67
HYDROGRAPH AT	SA A1	12.	12.40	4.	1.	0.	0.11
HYDROGRAPH AT	SA E6A	23.	12.10	3.	1.	0.	0.03
ROUTED TO	RT-E6B	22.	12.15	3.	1.	0.	0.03
HYDROGRAPH AT	SA E6B	7.	12.10	1.	0.	0.	0.01
2 COMBINED AT	C-E6	28.	12.15	4.	1.	0.	0.05
ROUTED TO	RT-E64	29.	12.25	4.	1.	0.	0.05
HYDROGRAPH AT	E5B	55.	12.20	9.	3.	1.	0.09
ROUTED TO	RT-E5B	55.	12.25	9.	3.	1.	0.09
HYDROGRAPH AT	E5A	27.	12.10	4.	1.	0.	0.03
2 COMBINED AT	C-E5	74.	12.20	13.	5.	2.	0.12
ROUTED TO	RT-E54	75.	12.30	13.	5.	2.	0.12
2 COMBINED AT	C-E56	99.	12.30	17.	6.	2.	0.17
ROUTED TO	RT-E4	104.	12.55	17.	6.	2.	0.17
HYDROGRAPH AT	SA E4	85.	12.40	23.	8.	3.	0.45
2 COMBINED AT	CP E4	177.	12.50	40.	14.	5.	0.62
ROUTED TO	RT-E3	177.	12.65	40.	14.	5.	0.62
HYDROGRAPH AT	SA E3	14.	12.35	4.	1.	0.	0.12

2 COMBINED AT	CP E3	185.	12.65	44.	16.	5.	0.74
ROUTED TO	RT-A1	184.	12.70	44.	16.	5.	0.74
HYDROGRAPH AT	SA E2	1.	15.60	1.	0.	0.	0.16
ROUTED TO	RT-E1	1.	16.10	1.	0.	0.	0.16
HYDROGRAPH AT	SA E1	13.	12.40	4.	1.	0.	0.12
2 COMBINED AT	CP E1	13.	12.40	5.	2.	1.	0.28
ROUTED TO	RT-A1	13.	12.50	5.	2.	1.	0.28
4 COMBINED AT	I-80	601.	12.70	189.	67.	22.	3.80
HYDROGRAPH AT	SA B17	64.	12.40	19.	6.	2.	0.41
ROUTED TO	RT-B12	63.	12.70	19.	6.	2.	0.41
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24
ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24
HYDROGRAPH AT	SA B12	55.	12.30	15.	5.	2.	0.35
3 COMBINED AT	CP B12	116.	12.60	41.	14.	5.	1.00
ROUTED TO	RT-B11	117.	12.70	41.	14.	5.	1.00
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08
2 COMBINED AT	CP B11	122.	12.70	44.	15.	5.	1.08
ROUTED TO	RT-10a	124.	12.80	44.	15.	5.	1.08
HYDROGRAPH AT	SAB10a	28.	12.30	6.	2.	1.	0.11
2 COMBINED AT	CPB10a	133.	12.80	49.	17.	6.	1.19
HYDROGRAPH AT	SA B8a	41.	12.30	10.	3.	1.	0.24
ROUTED TO	RT-B8b	41.	12.35	10.	3.	1.	0.24
HYDROGRAPH AT	SA B8b	15.	12.20	3.	1.	0.	0.04
HYDROGRAPH AT	SA B9	11.	12.30	3.	1.	0.	0.06
3 COMBINED AT	CP B8b	63.	12.30	15.	5.	2.	0.34
ROUTED TO	RT-B7	63.	12.40	15.	5.	2.	0.34
HYDROGRAPH AT	SA B7	4.	12.25	1.	0.	0.	0.02
3 COMBINED AT	CPB10a	163.	12.80	65.	23.	8.	1.55
ROUTED TO	RT-10b	162.	12.80	65.	23.	8.	1.55
HYDROGRAPH AT	SAB10b	17.	12.10	3.	1.	0.	0.04

2 COMBINED AT	CPB10b	165.	12.80	67.	24.	8.	1.59
ROUTED TO	RT-10c	163.	12.85	67.	24.	8.	1.59
HYDROGRAPH AT	SAB10c	6.	12.10	1.	0.	0.	0.01
2 COMBINED AT	CPB10c	164.	12.85	68.	24.	8.	1.60
HYDROGRAPH AT	SAB14b	7.	12.25	2.	1.	0.	0.04
ROUTED TO	RT-B16	8.	12.35	2.	1.	0.	0.04
HYDROGRAPH AT	SA B16	31.	12.30	7.	2.	1.	0.09
2 COMBINED AT	CP B16	38.	12.30	8.	3.	1.	0.13
ROUTED TO	RT- B3	37.	12.30	8.	3.	1.	0.13
HYDROGRAPH AT	SA B3	15.	12.20	3.	1.	0.	0.05
2 COMBINED AT	CP B3	50.	12.30	11.	4.	1.	0.18
HYDROGRAPH AT	SA B6	6.	12.25	1.	0.	0.	0.03
ROUTED TO	RT-B5	6.	12.40	1.	0.	0.	0.03
HYDROGRAPH AT	SAB14a	9.	12.25	2.	1.	0.	0.05
ROUTED TO	RT-B5	10.	12.40	2.	1.	0.	0.05
HYDROGRAPH AT	SA B5	16.	12.30	4.	1.	0.	0.08
4 COMBINED AT	CP B5	76.	12.35	18.	6.	2.	0.33
ROUTED TO	RT-B5	76.	12.35	18.	6.	2.	0.33
ROUTED TO	RT-B4	76.	12.40	18.	6.	2.	0.33
HYDROGRAPH AT	SA B4	13.	12.15	2.	1.	0.	0.04
2 COMBINED AT	CP B4	82.	12.40	20.	7.	2.	0.37
ROUTED TO	RT-B2c	81.	12.45	20.	7.	2.	0.37
HYDROGRAPH AT	SA B2a	23.	12.15	4.	1.	0.	0.05
ROUTED TO	RT-B2b	24.	12.25	4.	1.	0.	0.05
HYDROGRAPH AT	SA B2b	50.	12.20	8.	3.	1.	0.13
2 COMBINED AT	CP B2b	71.	12.20	12.	4.	1.	0.18
ROUTED TO	RT-B2c	71.	12.30	12.	4.	1.	0.18
HYDROGRAPH AT	SA B2c	18.	12.25	4.	1.	0.	0.06
3 COMBINED AT	CP B2c	158.	12.35	36.	13.	4.	0.61
2 COMBINED AT	CPB10c	289.	12.45	103.	37.	12.	2.21

ROUTED TO	RT-B1	289.	12.50	103.	37.	12.	2.21
HYDROGRAPH AT	SA B1	15.	12.20	3.	1.	0.	0.05
2 COMBINED AT	CP B1	295.	12.50	106.	38.	13.	2.26
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66
ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66
HYDROGRAPH AT	SA C11	97.	12.25	19.	6.	2.	0.32
2 COMBINED AT	CP C11	198.	12.45	58.	20.	7.	0.97
ROUTED TO	RT-C7	198.	12.55	58.	20.	7.	0.97
HYDROGRAPH AT	SA C7	73.	12.30	17.	6.	2.	0.34
2 COMBINED AT	CP C7	243.	12.55	75.	25.	8.	1.31
ROUTED TO	RT-C5	243.	12.60	75.	25.	8.	1.31
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15
2 COMBINED AT	CP C5	257.	12.60	81.	27.	9.	1.46
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24
HYDROGRAPH AT	SA C6	14.	12.30	4.	1.	0.	0.10
2 COMBINED AT	CP C6	70.	12.40	16.	5.	2.	0.33
2 COMBINED AT	CP C5	306.	12.50	97.	33.	11.	1.80
ROUTED TO	RT- C9	305.	12.55	97.	33.	11.	1.80
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11
2 COMBINED AT	CP C9	313.	12.50	100.	34.	11.	1.91
ROUTED TO	RT-C4b	313.	12.60	100.	34.	11.	1.91
HYDROGRAPH AT	SA C4a	17.	12.25	4.	1.	0.	0.09
HYDROGRAPH AT	SA C4b	6.	12.25	1.	0.	0.	0.04
3 COMBINED AT	CP C4b	322.	12.55	104.	36.	12.	2.04
ROUTED TO	RT-C3	322.	12.60	104.	36.	12.	2.04
HYDROGRAPH AT	C3A	11.	12.35	3.	1.	0.	0.12
2 COMBINED AT	CP C3	330.	12.60	108.	37.	12.	2.16
ROUTED TO	RT-C3B	329.	12.65	108.	37.	12.	2.16
HYDROGRAPH AT	C3B	12.	12.35	3.	1.	0.	0.10

2 COMBINED AT	C-C3B	336.	12.65	111.	38.	13.	2.26
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17
2 COMBINED AT	CP C3	346.	12.65	116.	40.	13.	2.43
ROUTED TO	RT-C1	346.	12.70	116.	40.	13.	2.43
HYDROGRAPH AT	SA C1	12.	12.30	3.	1.	0.	0.08
2 COMBINED AT	CP C1	351.	12.70	119.	41.	14.	2.51
2 COMBINED AT	CP CB1	603.	12.60	225.	78.	26.	4.77
ROUTED TO	RT-D1	602.	12.70	225.	78.	26.	4.77
HYDROGRAPH AT	SA D1	31.	12.30	8.	3.	1.	0.22
2 COMBINED AT	MOGULE	616.	12.70	232.	81.	27.	4.99
HYDROGRAPH AT	SA F1A	22.	12.15	4.	1.	0.	0.07
ROUTED TO	RT-F1B	23.	12.30	4.	1.	0.	0.07
HYDROGRAPH AT	SA F1B	20.	12.25	4.	2.	1.	0.11
2 COMBINED AT	F1	42.	12.30	8.	3.	1.	0.18
HYDROGRAPH AT	SA F2	24.	12.30	6.	2.	1.	0.14
2 COMBINED AT	MOGULW	66.	12.30	14.	5.	2.	0.32

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	62.58	753.00	0.57	3.00	62.58	753.00	0.57
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1250E+02 EXCESS=0.0000E+00 OUTFLOW=0.1250E+02 BASIN STORAGE=0.2748E-02 PERCENT ERROR= -0.1									
RT-A6a	MANE	1.35	115.89	749.79	0.64	3.00	115.80	750.00	0.64
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2421E+02 EXCESS=0.0000E+00 OUTFLOW=0.2421E+02 BASIN STORAGE=0.3375E-03 PERCENT ERROR= 0.0									
RT-A6b	MANE	3.00	120.91	756.00	0.64	3.00	120.91	756.00	0.64
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2604E+02 EXCESS=0.0000E+00 OUTFLOW=0.2604E+02 BASIN STORAGE=0.1562E-02 PERCENT ERROR= 0.0									
RT-A5	MANE	2.92	125.04	758.96	0.64	3.00	124.98	759.00	0.64
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2800E+02 EXCESS=0.0000E+00 OUTFLOW=0.2801E+02 BASIN STORAGE=0.6739E-03 PERCENT ERROR= 0.0									
RT-A4	MANE	3.00	141.79	765.00	0.70	3.00	141.79	765.00	0.70
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3523E+02 EXCESS=0.0000E+00 OUTFLOW=0.3523E+02 BASIN STORAGE=0.2211E-02 PERCENT ERROR= 0.0									
RT-A9	MANE	3.00	39.25	756.00	0.79	3.00	39.25	756.00	0.79
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6619E+01 EXCESS=0.0000E+00 OUTFLOW=0.6622E+01 BASIN STORAGE=0.3590E-02 PERCENT ERROR= -0.1									
RT-A8A	MANE	3.00	156.35	753.00	0.74	3.00	156.35	753.00	0.74
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3169E+02 EXCESS=0.0000E+00 OUTFLOW=0.3169E+02 BASIN STORAGE=0.1039E-02 PERCENT ERROR= 0.0									
RT-A8B	MANE	3.00	57.39	747.00	0.71	3.00	57.39	747.00	0.71
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9319E+01 EXCESS=0.0000E+00 OUTFLOW=0.9321E+01 BASIN STORAGE=0.2363E-02 PERCENT ERROR= 0.0									
RT-A2	MANE	3.00	379.94	756.00	0.68	3.00	379.94	756.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8993E+02 EXCESS=0.0000E+00 OUTFLOW=0.8993E+02 BASIN STORAGE=0.3045E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.64	399.97	756.11	0.67	3.00	399.78	756.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9527E+02 EXCESS=0.0000E+00 OUTFLOW=0.9527E+02 BASIN STORAGE=0.8304E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	399.45	762.00	0.67	3.00	399.45	762.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9527E+02 EXCESS=0.0000E+00 OUTFLOW=0.9527E+02 BASIN STORAGE=0.3178E-02 PERCENT ERROR= 0.0

RT-E68	MANE	1.98	22.50	729.53	1.15	3.00	22.45	729.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2141E+01 EXCESS=0.0000E+00 OUTFLOW=0.2141E+01 BASIN STORAGE=0.3420E-03 PERCENT ERROR= 0.0

RT-E64	MANE	3.00	29.31	735.00	1.14	3.00	29.31	735.00	1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2756E+01 EXCESS=0.0000E+00 OUTFLOW=0.2757E+01 BASIN STORAGE=0.1115E-02 PERCENT ERROR= -0.1

RT-E5B	MANE	2.62	54.84	735.01	1.41	3.00	54.84	735.00	1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6723E+01 EXCESS=0.0000E+00 OUTFLOW=0.6724E+01 BASIN STORAGE=0.5690E-03 PERCENT ERROR= 0.0

RT-E54	MANE	3.00	74.67	738.00	1.41	3.00	74.67	738.00	1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9334E+01 EXCESS=0.0000E+00 OUTFLOW=0.9335E+01 BASIN STORAGE=0.2177E-02 PERCENT ERROR= 0.0

RT-E4	MANE	3.00	104.14	753.00	1.34	3.00	104.14	753.00	1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1209E+02 EXCESS=0.0000E+00 OUTFLOW=0.1210E+02 BASIN STORAGE=0.4268E-02 PERCENT ERROR= -0.1

RT-E3	MANE	3.00	177.18	759.00	0.86	3.00	177.18	759.00	0.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2816E+02 EXCESS=0.0000E+00 OUTFLOW=0.2816E+02 BASIN STORAGE=0.3089E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.46	185.03	761.59	0.78	3.00	183.83	762.00	0.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3077E+02 EXCESS=0.0000E+00 OUTFLOW=0.3077E+02 BASIN STORAGE=0.5864E-03 PERCENT ERROR= 0.0

RT-E1	MANE	3.00	1.24	972.00	0.11	3.00	1.24	972.00	0.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9687E+00 EXCESS=0.0000E+00 OUTFLOW=0.9694E+00 BASIN STORAGE=0.2198E-02 PERCENT ERROR= -0.3

RT-A1	MANE	3.00	13.22	750.00	0.25	3.00	13.22	750.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3647E+01 EXCESS=0.0000E+00 OUTFLOW=0.3647E+01 BASIN STORAGE=0.1346E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	63.43	762.00	0.57	3.00	63.43	762.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1254E+02 EXCESS=0.0000E+00 OUTFLOW=0.1254E+02 BASIN STORAGE=0.4176E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	24.40	756.00	0.45	3.00	24.40	756.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5701E+01 EXCESS=0.0000E+00 OUTFLOW=0.5704E+01 BASIN STORAGE=0.2449E-02 PERCENT ERROR= -0.1

RT-B11	MANE	3.00	117.05	762.00	0.53	3.00	117.05	762.00	0.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2822E+02 EXCESS=0.0000E+00 OUTFLOW=0.2822E+02 BASIN STORAGE=0.1209E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	124.08	768.00	0.52	3.00	124.08	768.00	0.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3019E+02 EXCESS=0.0000E+00 OUTFLOW=0.3020E+02 BASIN STORAGE=0.1735E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	3.00	40.63	741.00	0.51	3.00	40.63	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6638E+01 EXCESS=0.0000E+00 OUTFLOW=0.6639E+01 BASIN STORAGE=0.6975E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	63.17	744.00	0.56	3.00	63.17	744.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1027E+02 EXCESS=0.0000E+00 OUTFLOW=0.1027E+02 BASIN STORAGE=0.1635E-02 PERCENT ERROR= 0.0

RT-10b	MANE	1.28	162.32	767.67	0.55	3.00	162.13	768.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4535E+02 EXCESS=0.0000E+00 OUTFLOW=0.4535E+02 BASIN STORAGE=0.3287E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.95	164.62	769.79	0.56	3.00	163.42	771.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4710E+02 EXCESS=0.0000E+00 OUTFLOW=0.4710E+02 BASIN STORAGE=0.5789E-03 PERCENT ERROR= 0.0

RT-B16	MANE	3.00	7.54	741.00	0.58	3.00	7.54	741.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1190E+01 EXCESS=0.0000E+00 OUTFLOW=0.1190E+01 BASIN STORAGE=0.8471E-03 PERCENT ERROR= -0.1

RT- B3	MANE	1.17	37.74	739.81	0.82	3.00	37.34	738.00	0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5829E+01 EXCESS=0.0000E+00 OUTFLOW=0.5829E+01 BASIN STORAGE=0.1924E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.55	744.00	0.55	3.00	5.55	744.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8464E+00 EXCESS=0.0000E+00 OUTFLOW=0.8467E+00 BASIN STORAGE=0.1192E-02 PERCENT ERROR= -0.2

RT-B5	MANE	3.00	9.57	744.00	0.58	3.00	9.57	744.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1507E+01 EXCESS=0.0000E+00 OUTFLOW=0.1507E+01 BASIN STORAGE=0.1410E-02 PERCENT ERROR= -0.1

RT-B5	MANE	1.97	75.94	742.31	0.71	3.00	75.86	741.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1262E+02 EXCESS=0.0000E+00 OUTFLOW=0.1262E+02 BASIN STORAGE=0.3716E-03 PERCENT ERROR= 0.0

RT-B4	MANE	3.00	75.81	744.00	0.71	3.00	75.81	744.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1262E+02 EXCESS=0.0000E+00 OUTFLOW=0.1262E+02 BASIN STORAGE=0.5910E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	81.44	747.00	0.72	3.00	81.44	747.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1416E+02 EXCESS=0.0000E+00 OUTFLOW=0.1416E+02 BASIN STORAGE=0.7453E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	23.56	735.00	0.88	3.00	23.56	735.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2453E+01 EXCESS=0.0000E+00 OUTFLOW=0.2453E+01 BASIN STORAGE=0.8794E-03 PERCENT ERROR= -0.1

RT-B2c	MANE	3.00	70.88	738.00	0.88	3.00	70.88	738.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8338E+01 EXCESS=0.0000E+00 OUTFLOW=0.8339E+01 BASIN STORAGE=0.1884E-02 PERCENT ERROR= 0.0

RT-B1	MANE	3.00	289.34	750.00	0.62	3.00	289.34	750.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7265E+02 EXCESS=0.0000E+00 OUTFLOW=0.7265E+02 BASIN STORAGE=0.1166E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	198.11	753.00	0.76	3.00	198.11	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3927E+02 EXCESS=0.0000E+00 OUTFLOW=0.3927E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	243.33	756.00	0.72	3.00	243.33	756.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5056E+02 EXCESS=0.0000E+00 OUTFLOW=0.5056E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT- C9	MANE	2.28	306.83	751.45	0.68	3.00	305.11	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6534E+02 EXCESS=0.0000E+00 OUTFLOW=0.6534E+02 BASIN STORAGE=0.7993E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	2.42	313.20	753.57	0.66	3.00	312.74	756.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6752E+02 EXCESS=0.0000E+00 OUTFLOW=0.6752E+02 BASIN STORAGE=0.6963E-03 PERCENT ERROR= 0.0

RT-C3	MANE	2.75	322.51	756.08	0.65	3.00	322.28	756.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7087E+02 EXCESS=0.0000E+00 OUTFLOW=0.7088E+02 BASIN STORAGE=0.9912E-03 PERCENT ERROR= 0.0

RT-C3B	MANE	1.99	329.87	757.95	0.63	3.00	328.98	759.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7315E+02 EXCESS=0.0000E+00 OUTFLOW=0.7315E+02 BASIN STORAGE=0.6612E-03 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	346.32	762.00	0.61	3.00	346.32	762.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7899E+02 EXCESS=0.0000E+00 OUTFLOW=0.7899E+02 BASIN STORAGE=0.1074E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	602.41	762.00	0.61	3.00	602.41	762.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1556E+03 EXCESS=0.0000E+00 OUTFLOW=0.1556E+03 BASIN STORAGE=0.2355E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	22.94	738.00	0.65	3.00	22.94	738.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2511E+01 EXCESS=0.0000E+00 OUTFLOW=0.2513E+01 BASIN STORAGE=0.1484E-02 PERCENT ERROR= -0.1

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

HEC-1 Output
5 -Year Proposed (Phase I to V) Condition Analysis
With Detention

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             MAY  1991                 *
*           VERSION 4.0.1E              *
*       Lahey F77L-EM/32 version 5.01   *
*        Dodson & Associates, Inc.      *
*  RUN DATE  05/06/98  TIME  12:20:11   *
*****************************************
```

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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748               *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   | DEVELOPED CONDITION WITH DETENTION BASINS
    5     ID   | Washoe County, Nevada                                                  |
    6     ID   |                                                                        |
    7     ID   |  5-Year Analysis                                                       |
    8     ID   |    - For offsite areas                                                 |
    9     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   10     ID   |    - Rainfall entered using hypothetical storm option                  |
   11     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   12     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   13     ID   |       (SCS, 1986)  or NEH-4 (SCS, 1972)                                |
   14     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n) |
   15     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   16     ID   |                                                                        |
   17     ID   | File: SOMDT005.DAT                          WRC NEVADA, INC.          |
   18     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A|
   19     ID   | Project No.   3011                          Reno, Nevada  89502       |
   20     ID   |                                            (702)332-3737,FAX 332-3740|
   21     ID   ==========================================================================
   22     IT      3       0       0    1441
   23     IO      5       0       0
          *
          *
          *
          * *********   WATERSHED SUBAREA A    **************
          *
          *

   24     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   25     PH       1            0.22    0.41    0.68    0.92    1.11    1.50    2.00    2.51
   26     BA  0.4094
   27     LS       0     73
   28     UD    0.32
          *

   29     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   30     RD    5700    0.14    0.07            TRAP       6       3
          *

   31     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   32     PH       1            0.21    0.38    0.63    0.87    1.05    1.43    1.89    2.34
   33     BA  0.3002
   34     LS       0     79
   35     UD    0.31
          *

   36     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   37     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  38      KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
  39      RD     700   0.140    0.07          TRAP      6      3
          *

  40      KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
  41      PH       1             0.19   0.34   0.57   0.79   0.95   1.30   1.74   2.18
  42      BA  0.0583
  43      LS       0      78
  44      UD    0.14
          *

  45      KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
  46      HC       2
          *

  47      KK    DB12 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 12
  48      KM         24" RCP ie 5425
  49      KM         4'x4'RCB at 5439
  50      RS       1    STOR      -1
  51      SA    .039    .122    .276   .531   .840  1.162
  52      SE    5425    5430    5435   5440   5445   5450
  53      SQ       0    21.4    30.3   37.1   42.8   47.8   52.4   56.6   87.7  141.0
  54      SQ   208.7   288.2   317.7  598.6
  55      SE    5425    5427    5429   5431   5433   5435   5437   5439   5441   5443
  56      SE    5445    5447    5449   5451
          *

  57      KK  RT-A6b ROUTE HDROGRAPH TO OUTLET OF AREA A6b
  58      RD    2400   0.069    0.07          TRAP      6      3
          *

  59      KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
  60      PH       1             0.19   0.34   0.57   0.79   0.95   1.30   1.74   2.18
  61      BA  0.0508
  62      LS       0      81
  63      UD    0.15
          *

  64      KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
  65      HC       2
          *

  66      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  67      RD    1100   0.055    0.07          TRAP      6      3
          *

  68      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  69      PH       1             0.19   0.34   0.57   0.79   0.95   1.30   1.74   2.18
  70      BA  0.1291
  71      LS       0      87
  72      UD    0.18
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  73      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  74      HC       2
          *

  75      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  76      RD    2900   0.055     .07           TRAP      6       3
          *

  77      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  78      PH       1            0.18    0.33    0.56    0.76    0.92    1.25    1.68    2.11
  79      BA  0.1329
  80      LS       0      80
  81      UD    0.19
          *

  82      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  83      PH       1            0.19    0.34    0.57    0.78    0.94    1.27    1.72    2.16
  84      BA  0.0405
  85      LS       0      66
  86      UD    0.20
          *

  87      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  88      HC       3
          *

  89      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  90      PH       1            0.22    0.39    0.65    0.89    1.06    1.43    1.90    2.37
  91      BA  0.2819
  92      LS       0      79
  93      UD    0.30
          *

  94      KK    DB10 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 10
  95      KM        24"RCP ie 5375
  96      RS       1    STOR      -1
  97      SA     .04     .11     .26    .294    .396    .508    .628    .754    1.23
  98      SE    5375    5380    5385    5390    5392    5394    5396    5398    5400
  99      SQ       0    12.0    24.0    36.0    48.0    60.0    72.0
 100      SE    5375 5376.75 5378.47 5381.39 5385.47 5391.99 5406.13
          *

 101      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
 102      PH       1            0.22    0.41    0.68    0.92    1.10    1.48    2.00    2.51
 103      BA  0.1563
 104      LS       0      78
 105      UD    0.29
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  106     KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
  107     RD    6800   0.165     .08          TRAP      6       3
          *
  108     KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
  109     PH       1             0.22   0.39   0.65   0.89   1.07   1.44   1.91   2.38
  110     BA  0.3636
  111     LS       0      78
  112     UD    0.33
          *
  113     KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
  114     HC       2
          *
  115     KK     DB9 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 9
  116     KM          2-60"RCP fe 5382
  117     RS       1    STOR      -1
  118     SA   0.168   0.213   0.262   0.314
  119     SE    5384    5386    5388    5390
  120     SQ    0.00      60     120     180     240     300     360     420     480     524
  121     SE    5382 5383.63 5384.76 5385.64 5386.46 5387.32 5388.31 5389.48 5390.86 5392.00
          *
  122     KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
  123     HC       2
          *
  124     KK  RT-A8A ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8A
  125     RD    1500   0.060     .07          TRAP      6       3
          *
  126     KK  SA A8A GENERATE HYDOGRAPH FOR SUB-AREA A8A
  127     PH       1             0.20   0.36   0.60   0.82   0.98   1.33   1.78   2.23
  128     BA  0.0548
  129     LS       0      79
  130     UD    0.19
          *
  131     KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
  132     HC       2
          *
  133     KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
  134     PH       1             0.21   0.38   0.64   0.86   1.03   1.38   1.85   2.32
  135     BA  0.1912
  136     LS              79
  137     UD    0.28
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  138     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  139     PH       1            0.21    0.38    0.63    0.85    1.01    1.37    1.83    2.30
  140     BA  0.0564
  141     LS       0      78
  142     UD    0.22
          *

  143     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  144     HC       2
          *

  145     KK     DB6 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 6
  146     KM           18" RCP ie 5184 and 6'X8' at 5191
  147     RS       1    STOR      -1
  148     SA   0.036   0.091   0.153   0.224   0.302   0.391   0.450
  149     SE    5186    5188    5190    5192    5194    5196    5198
  150     SQ     8.5    12.0    14.7    17.0    19.0    20.8    22.5    40.9    73.0   114.2
  151     SQ   162.6   189.2   249.1
  152     SE    5185    5186    5187    5188    5189    5190    5191    5192    5193    5194
  153     SE    5195  5195.5    5196
          *

  154     KK  RT-A8B ROUTE COMBINED HYDROGRAPH A9&10 TO OUTLET OF A8B
  155     RD    3300  0.0550    0.07            TRAP       6       3
          *

  156     KK  SA A8B GENERATE HYDROGRAPH FOR SUB AREA A8B
  157     PH       1            0.20    0.36    0.60    0.82    0.98    1.33    1.78    2.23
  158     BA  0.1428
  159     LS       0      76
  160     UD    0.21
          *

  161     KK  CP A8B COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  162     HC       3
          *

  163     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  164     PH       1            0.20    0.37    0.61    0.82    0.97    1.30    1.75    2.20
  165     BA  0.1068
  166     LS       0      75
  167     UD    0.33
          *

  168     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A11, A8
  169     HC       3
          *

  170     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  171     RD    4400  0.0386     .07            TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  172     KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
  173     PH       1              0.18   0.33   0.56   0.76   0.91   1.24   1.67   2.11
  174     BA  0.1974
  175     LS       0      77
  176     UD    0.28
          *

  177     KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
  178     HC       2
          *

  179     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
  180     RD    1500    0.07    0.07          TRAP       6       3
          *

  181     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
  182     RD    2400  0.0125   0.040          TRAP      15       3
          *

  183     KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
  184     PH       1              0.18   0.33   0.54   0.74   0.89   1.20   1.61   2.02
  185     BA  0.1127
  186     LS       0      76
  187     UD    0.33
          *
          *
          *
          * ************   WATERSHED SUBAREA E ********************
          *
          *

  188     KK  SA E6A GENERATE HYDROGRAPH FOR SUB AREA E6A
  189     PH       1              0.20   0.37   0.61   0.82   0.97   1.30   1.76   2.23
  190     BA  0.0348
  191     LS       0      88
  192     UD    0.09
          *

  193     KK     DB5 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 5
  194     KM         12"RCP 1@ 5114
  195     RS       1    STOR      -1
  196     SA    .119    .172    .231    .296    .366     0.5
  197     SE    5114    5116    5118    5120    5122    5124
  198     SQ       0       1       2       3       4       5       6       7       8       9
  199     SE    5114 5114.59 5114.91 5115.24 5115.68 5116.26 5117.50 5119.38 5121.55 5124.00
          *

  200     KK  RT-E6B ROUTE HYDROGRAPH TO OUTLET OF E6B
  201     RD     450    0.05    0.07          trap       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  202     KK  SA E6B GENERATE HYDOGRAPH FOR SUB-AREA E6B
  203     PH       1           0.20    0.37    0.61    0.82    0.97    1.30    1.76    2.23
  204     BA   .0106
  205     LS       0      87
  206     UD     .06
          *

  207     KK    C-E6 COMBINE HYDROGRAPHS FOR E6 A AND B
  208     HC       2
          *

  209     KK  RT-E64 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
  210     RD    1900   .0658     .07           TRAP       6       3
          *

  211     KK     E5B GENERATE HYDOGRAPH FOR SUB-AREA E5B
  212     PH       1           0.20    0.37    0.61    0.83    0.99    1.34    1.81    2.28
  213     BA   .0893
  214     LS       0      91
  215     UD     .17
          *

  216     KK     D8B ROUTE HYDROGRAPH THROUGH DETENTION BASIN 8
  217     KM         24"RCP ie 5122
  218     RS       1    STOR      -1
  219     SA    .085    .134    .198    .273    .356    .445    .540
  220     SE    5122    5124    5126    5128    5130    5132    5134
  221     SQ       0       5      10      15      20      25      30      35      40      45
  222     SQ      50    53.4
  223     SE    5122 5123.03 5123.63 5124.18 5124.86 5125.76 5126.87 5128.19 5129.70 5131.41
  224     SE  5133.4 5135.00
          *

  225     KK  RT-E5B ROUTE HYDROGRAPH TO OUTLET OF E5A
  226     RD     900     .08     .07           TRAP       6       3
          *

  227     KK     E5A GENERATE HYDROGRAPH FOR SUB-AREA E5A
  228     PH       1           .20     .37    0.61    0.82     .98    1.31    1.75    2.19
  229     BA   .0347
  230     LS       0      92
  231     UD     .10
          *

  232     KK    C-E5 COMBINE HYDROGRAPHS FROM E5 A AND B
  233     HC       2
          *

  234     KK    D814 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 14
  235     KM         12"RCP ie 5060
  236     RS       1    STOR      -1
  237     SA    .341    .475    .631    .811   1.025   1.274    1.50
  238     SE    5060    5062    5064    5066    5068    5070    5072
  239     SQ       0       2       4       6       8      10      12      14
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
  240     SE    5060 5060.88 5061.65 5062.95 5064.75 5067.38 5071.49 5071.98
              *
  241     KK  RT-E54 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  242     RD    2500    .036     .07           TRAP      6       3
              *
  243     KK   C-E56 COMBINE HYDROGRAPHS FROM E5 and E6
  244     HC       2
              *
  245     KK   RT-E4 ROUTE HYDROGRAPH TO OUTLET OF E4
  246     RD    4500    .031     .07           TRAP      6       3
              *
  247     KK  SA  E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
  248     PH       1            0.19    0.35   0.58    0.79    0.94    1.26    1.72    2.18
  249     BA  0.4466
  250     LS       0      80
  251     UD    0.34
              *
  252     KK  CP  E4 COMBINE HYDROGRAPH  E4 W/HYDROGRAPH E5 AND E6
  253     HC       2
              *
              *
  254     KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
  255     RD    3500  0.0429     .07           TRAP      6       3
              *
  256     KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
  257     PH       1            0.19    0.34   0.57    0.76    0.90    1.20    1.63    2.06
  258     BA  0.1191
  259     LS       0      75
  260     UD    0.27
              *
  261     KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
  262     HC       2
              *
  263     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  264     RD     500  0.0125     .04           TRAP     15       3
              *
  265     KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
  266     PH       1            0.19    0.34   0.57    0.77    0.92    1.24    1.68    2.12
  267     BA  0.1597
  268     LS       0      62
  269     UD    0.38
              *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  270     KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
  271     RD    3200  0.0375     .07          TRAP      6      3
          *

  272     KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
  273     PH       1            0.18   0.33   0.56   0.75   0.89   1.20   1.62   2.04
  274     BA  0.1156
  275     LS       0      76
  276     UD    0.31
          *

  277     KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
  278     HC       2
          *

  279     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  280     RD    1200  0.0125     .04          TRAP     15      3
          *

  281     KK    I-80
  282     KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
  283     HC       4
          *
          *
          *
          * *********   WATERSHED SUBAREA B    ************
          *
          *
          *

  284     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
  285     PH       1            0.22   0.40   0.67   0.91   1.10   1.50   1.96   2.43
  286     BA  0.4136
  287     LS       0      74
  288     UD    0.32
          *

  289     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
  290     RD    3900  0.0133     .07          TRAP      6      3
          *

  291     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  292     PH       1            0.22   0.40   0.67   0.91   1.10   1.48   1.98   2.48
  293     BA  0.2400
  294     LS       0      70
  295     UD    0.33
          *

  296     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  297     RD    4500  0.1510     .08          TRAP      6      3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  298     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  299     PH       1            0.20    0.37    0.61    0.85    1.03    1.40    1.85    2.30
  300     BA  0.3484
  301     LS       0      75
  302     UD    0.26
          *

  303     KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  304     HC       3
          *

  305     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  306     RD    2000  0.1000     .07           TRAP       6       3
          *

  307     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  308     PH       1            0.19    0.35    0.58    0.79    0.95    1.27    1.70    2.12
  309     BA  0.0777
  310     LS       0      76
  311     UD    0.24
          *

  312     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  313     HC       2
          *

  314     KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  315     RD    3100  0.0710     .07           TRAP       6       3
          *

  316     KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  317     PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  318     BA  0.1056
  319     LS       0      84
  320     UD    0.24
          *

  321     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  322     HC       2
          *

  323     KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  324     PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  325     BA  0.2445
  326     LS       0      76
  327     UD    0.23
          *

  328     KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  329     RD    1100  0.0770     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  330     KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  331     PH       1            0.20   0.36   0.60   0.81   0.97   1.30   1.74   2.18
  332     BA  0.0382
  333     LS       0      84
  334     UD    0.16
          *

  335     KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  336     PH       1            0.19   0.34   0.57   0.78   0.93   1.26   1.69   2.11
  337     BA  0.0591
  338     LS       0      79
  339     UD    0.26
          *

  340     KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  341     HC       3
          *

  342     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  343     RD    2200  0.0680     .07          TRAP      6      3
          *

  344     KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  345     PH       1            0.18   0.32   0.53   0.73   0.89   1.21   1.62   2.04
  346     BA  0.0240
  347     LS       0      78
  348     UD    0.21
          *

  349     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  350     HC       3
          *

  351     KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  352     RD     500  0.0500     .07          TRAP      6      3
          *

  353     KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  354     PH       1            0.18   0.32   0.53   0.73   0.88   1.20   1.60   2.01
  355     BA  0.0360
  356     LS       0      87
  357     UD    0.10
          *

  358     KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
  359     HC       2
          *

  360     KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
  361     KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
  362     RS       1    STOR      -1
  363     SA     .34    .490    .660    .840   1.04   1.26   1.67
  364     SE    5010    5012    5014    5016   5018   5020   5025
  365     SQ       0    65.5    92.7   167.8  284.6  428.7  594.9  780.5  1073.4
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
366       SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *
367       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
368       RD     800  0.0563     .07            TRAP       6       3
          *
369       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
370       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
371       BA  0.0126
372       LS       0      87
373       UD    0.10
          *
374       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
375       HC       2
          *
376       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
377       PH       1            0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
378       BA    .094
379       LS       0      86
380       UD    0.24
          *
381       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
382       RD     400  0.0533     .05            TRAP       6       3
          *
383       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
384       PH       1            0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
385       BA    .046
386       LS       0      84
387       UD    0.17
          *
388       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
389       HC       2
          *
390       KK     D81  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
391       KM       12"RCP ie 5050
392       RS       1    STOR      -1
393       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
394       SE    5050    5051    5052    5054    5056    5058    5060
395       SQ       0       1       2       3       4       5       6       7       8
396       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *
397       KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
398       RD     700  0.0500     .06            TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  399     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  400     PH       1           0.18    0.33    0.56    0.77    0.93    1.27    1.69    2.11
  401     BA    .029
  402     LS       0      78
  403     UD     .20
          *

  404     KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
  405     RD    2100   .0500     .07           TRAP       5       2
          *

  406     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  407     PH       1           0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
  408     BA  0.0877
  409     LS       0      78
  410     UD    0.22
          *

  411     KK   RT-B5 ROUTE HYDROGRAPH FROM B14b TO OUTLET OF B5
  412     RD    2325  0.0538    .070           TRAP       5       2
          *

  413     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  414     PH       1           0.18    0.33    0.56    0.76    0.92    1.25    1.65    2.06
  415     BA    .078
  416     LS       0      80
  417     UD    0.23
          *

  418     KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5, B6, B3, and B14a
  419     HC       4
          *

  420     KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
  421     RD     900  0.0390     .07           TRAP       6       3
          *

  422     KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
  423     PH       1           0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  424     BA  0.0360
  425     LS       0      85
  426     UD    0.14
          *

  427     KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
  428     HC       2
          *

  429     KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
  430     RD     950  0.0260     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

431       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
432       PH       1              0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
433       BA  0.0523
434       LS       0      86
435       UD    0.12
          *

436       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
437       RD    1800  0.0890     .07          TRAP       6      3
          *

438       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
439       PH       1              0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
440       BA  0.1255
441       LS       0      86
442       UD    0.15
          *

443       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
444       HC       2
          *

445       KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
446       KM        36" RCP I= 5045
447       RS       1    STOR      -1
448       SA    .027    .149    .360    .658
449       SE    5045    5050    5055    5060
450       SQ       0      10      20      30      40      50      60      70      80      90
451       SQ     120   128.4
452       SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
453       SE  5054.8    5060
          *

454       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
455       RD    2100  0.0430     .07          TRAP       6      3
          *

456       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
457       PH       1              0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
458       BA  0.0592
459       LS       0      84
460       UD    0.19
          *

461       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
462       HC       3
          *

463       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
464       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

465       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
466       RD    1400  0.0286     .07           TRAP      6      3
          *

467       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
468       PH       1           0.17    0.31    0.52    0.71    0.86    1.17    1.57    1.97
469       BA  0.0527
470       LS       0      83
471       UD    0.15
          *

472       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
473       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    *************
          *
          *
          *

474       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
475       PH       1           0.23    0.42    0.71    0.95    1.14    1.53    2.03    2.53
476       BA  0.6580
477       LS       0      77
478       UD    0.33
          *

479       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
480       RD    4800  0.1583     .07           TRAP      6      3
          *

481       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
482       PH       1           0.22    0.39    0.65    0.89    1.06    1.43    1.87    2.30
483       BA  0.3156
484       LS       0      80
485       UD    0.19
          *

486       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
487       HC       2
          *

488       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
489       RD    5500  0.1091     .07           TRAP      6      3
          *

490       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
491       PH       1           0.20    0.36    0.60    0.81    0.97    1.30    1.71    2.11
492       BA  0.3359
493       LS       0      80
494       UD    0.26
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
495       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
496       HC       2
          *
497       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
498       RD    3000  0.0933     .07          TRAP       6       3
          *
499       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
500       PH       1              0.18   0.33    0.56    0.75    0.89    1.20    1.60    2.00
501       BA  0.1528
502       LS       0      78
503       UD    0.27
          *
504       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
505       HC       2
          *
506       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
507       PH       1              0.20   0.36    0.60    0.81    0.97    1.31    1.74    2.16
508       BA  0.2380
509       LS       0      80
510       UD    0.23
          *
511       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
512       RD    3200  0.0750     .07          TRAP       6       3
          *
513       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
514       PH       1              0.18   0.33    0.56    0.76    0.91    1.24    1.64    2.05
515       BA  0.0956
516       LS       0      77
517       UD    0.25
          *
518       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
519       HC       2
          *
520       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
521       HC       2
          *
522       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
523       RD    1100  0.055      .07          TRAP       6       3
          *
```

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

  524     KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
  525     PH       1           0.18    0.32    0.53    0.72    0.86    1.16    1.55    1.95
  526     BA  0.1147
  527     LS       0      75
  528     UD    0.27
          *

  529     KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
  530     HC       2
          *

  531     KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
  532     RD    1200  0.0580     .07           TRAP       6       3
          *

  533     KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
  534     PH       1           0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
  535     BA  0.0930
  536     LS       0      79
  537     UD    0.20
          *

  538     KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
  539     PH       1           0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
  540     BA  0.0384
  541     LS       0      77
  542     UD    0.18
          *

  543     KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
  544     HC       3
          *

  545     KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
  546     KM           36"RCP ie 5085 and 8'x6' at 5106
  547     RS       1   STOR      -1
  548     SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
  549     SE    5085    5090    5095    5100    5105    5110    5115    5120
  550     SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   203.8
  551     SQ   291.5   402.8   533.1   679.7   841.0   889.9  1201.8
  552     SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
  553     SE    5109    5111    5113    5115    5117    5118    5120
          *

  554     KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
  555     RD   1200     .04     .07           TRAP       6       3
          *

  556     KK    C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
  557     PH       1           0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
  558     BA     .12
  559     LS       0      76
  560     UD     .27
          *
```

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

  561     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
  562     HC       2
          *

  563     KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
  564     KM         10'x6' RCB ie 5020
  565     RS       1    STOR      -1
  566     SA    .270   1.030   1.430   2.340
  567     SE    5020    5025    5030    5035
  568     SQ       0      90     180     270     360     400     540     630     720     810
  569     SQ     900     972
  570     SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
  571     SE  5033.5 5035.00
          *

  572     KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
  573     RD     950     .05     .07           TRAP       6       3
          *

  574     KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
  575     PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
  576     BA      .1
  577     LS       0      78
  578     UD     .30
          *

  579     KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
  580     HC       2
          *

  581     KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
  582     PH       1            0.17    0.30    0.50    0.67    0.80    1.07    1.45    1.84
  583     BA  0.1705
  584     LS       0      78
  585     UD    0.25
          *

  586     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
  587     HC       2
          *

  588     KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
  589     RD    1500  0.0400     .07           TRAP       6       3
          *

  590     KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
  591     PH       1            0.17    0.30    0.50    0.69    0.83    1.13    1.53    1.92
  592     BA  0.0809
  593     LS       0      79
  594     UD    0.24
          *
```

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

595       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
596       HC       2
          *

597       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
598       HC       2
          *

599       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
600       RD    3200  0.0500     .07          TRAP      6       2
          *

601       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
602       PH       1            0.17  0.31   0.52   0.70   0.85   1.14   1.55   1.96
603       BA  0.2191
604       LS       0      78
605       UD    0.24
          *

606       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
607       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
608       HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    **************
          *
          *

609       KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
610       PH       1            0.18  0.32   0.53   0.72   0.87   1.17   1.58   2.00
611       BA   .0726
612       LS       0      82
613       UD     .13
          *

614       KK    DB13 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
615       KM          10" RCP ie 5066
616       RS       1    STOR      -1
617       SA    .238    .367    .519    .703    .919   1.184
618       SE    5066    5068    5070    5072    5074    5075
619       SQ       0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0     9.0
620       SQ    10.0
621       SE  5066.0  5066.6  5067.1  5067.7  5068.6  5069.9  5071.4  5074.0 5075.02 5075.03
622       SE  5075.1
          *
          *

623       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
624       RD    2700     .11     .07          TRAP      10       4
          *
```

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

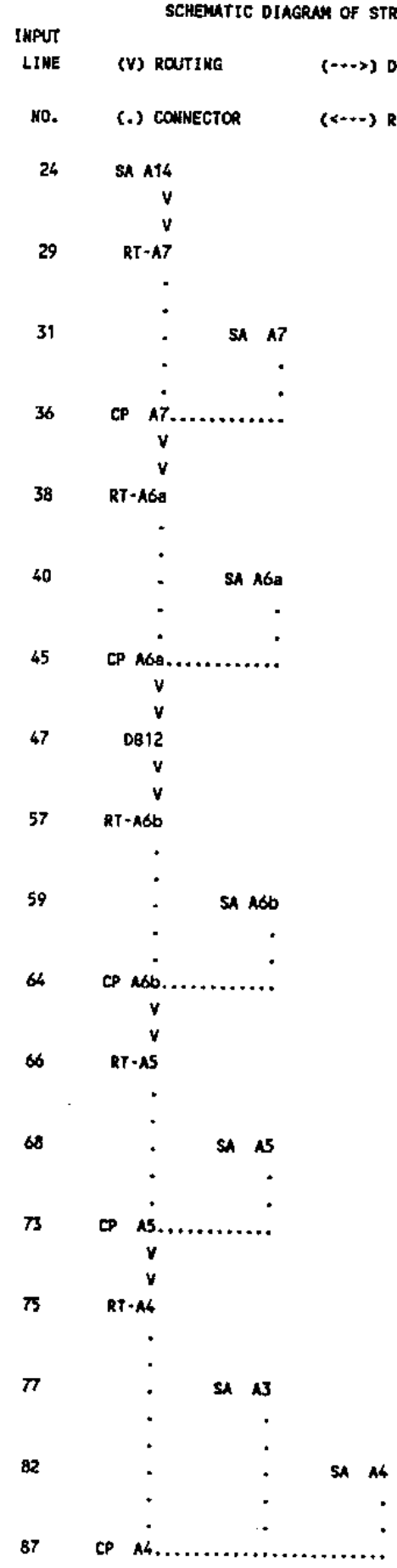
  625     KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
  626     PH       1           0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
  627     BA     .11
  628     LS       0      79
  629     UD     .20
          *

  630     KK      F1 Combine Hydrographs at F1
  631     HC       2
          *

  632     KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
  633     PH       1           0.18    0.33    0.54    0.74    0.89    1.20    1.62    2.04
  634     BA  0.1352
  635     LS       0      79
  636     UD    0.25
          *

  637     KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  638     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  639     HC       2
  640     ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK



```
                .
                .
 89             .   SA A10
                .     V
                .     V
 94             .   DB10
                .     .
                .     .
101             .     .     SA A15
                .     .       V
                .     .       V
106             .     .     RT-A9
                .     .       .
                .     .       .
108             .     .       .       SA  A9
                .     .       .         .
                .     .       .         .
113             .     .     CP  A9.............
                .     .       V
                .     .       V
115             .     .     DB9
                .     .       .
                .     .       .
122             .   CPA910.............
                .     V
                .     V
124             .   RT-ABA
                .     .
                .     .
                .     .     SA ABA
                .     .       .
                .     .       .
131             .   CP AB8.............
                .     .
                .     .
133             .     .     SA A13
                .     .       .
                .     .       .
138             .     .       .       SA A12
                .     .       .         .
                .     .       .         .
143             .     .     CP A12.............
                .     .       V
                .     .       V
145             .     .     DB6
                .     .       V
                .     .       V
154             .     .     RT-A88
                .     .       .
                .     .       .
156             .     .       .       SA A88
                .     .       .         .
                .     .       .         .
161             .   CP A88.........................
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 ..5            .     .     SA A11
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                .     .       .
168         CP4811.........................
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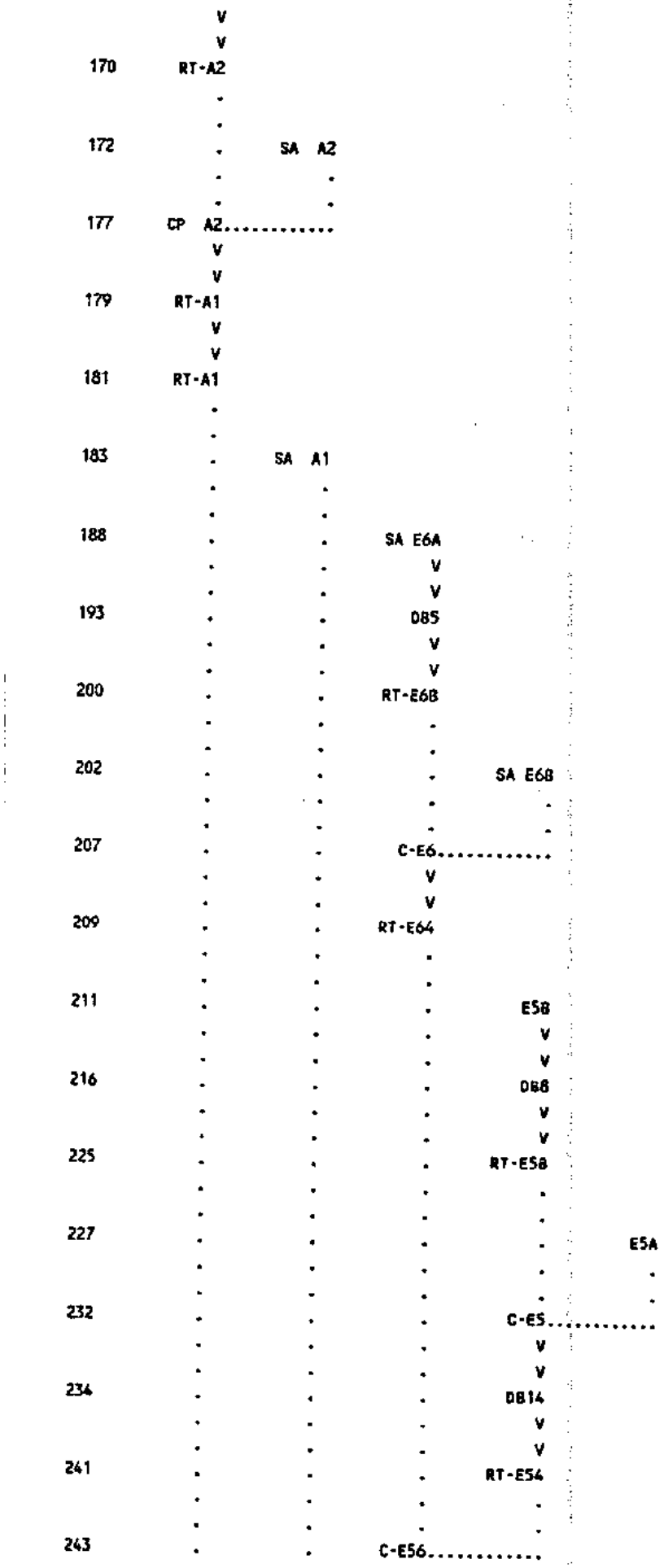
170 RT-A2
172 SA A2
177 CP A2
179 RT-A1
181 RT-A1
183 SA A1
188 SA E6A
193 DB5
200 RT-E6B
202 SA E6B
207 C-E6
209 RT-E64
211 E5B
216 DB8
225 RT-E5B
227 E5A
232 C-E5
234 DB14
241 RT-E54
243 C-E56

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                .       -       V
                .       -       V
245             .       .     RT-E4
                .       .       .
                .       .       .
./              .       .       .       SA  E4
                .       .       .         .
                .       .       .         .
252             .       .     CP  E4.............
                .       .       V
                .       .       V
254             .       .     RT-E3
                .       .       .
                .       .       .
256             .       .       .       SA  E3
                .       .       .         .
                .       .       .         .
261             .       .     CP  E3.............
                .       .       V
                .       .       V
263             .       .     RT-A1
                .       .       .
                .       .       .
265             .       .       .       SA  E2
                .       .       .         V
                .       .       .         V
270             .       .       .       RT-E1
                .       .       .         .
                .       .       .         .
                .       .       .         .       SA  E1
                .       .       .         .         .
                .       .       .         .         .
277             .       .       .       CP  E1.............
                .       .       .         V
                .       .       .         V
279             .       .       .       RT-A1
                .       .       .         .
                .       .       .         .
281         I-80.....................................
                .
                .
284             .     SA B17
                .       V
                .       V
289             .     RT-B12
                .       .
                .       .
291             .       .     SA B13
                .       .       V
                .       .       V
296             .       .     RT-B12
                .       .       .
                .       .       .
298             .       .       .       SA B12
                .       .       .         .
                .       .       .         .
                .     CP B12.........................
                .       V
                .       V
305             .     RT-B11
```

307 SA B11

312 CP B11

314 RT-10a

316 SAB10a

321 CPB10a

323 SA B8a

328 RT-B8b

330 SA B8b

335 SA B9

340 CP B8b

342 RT-B7

344 SA B7

349 CPB10a

351 RT-10b

353 SAB10b

358 CPB10b

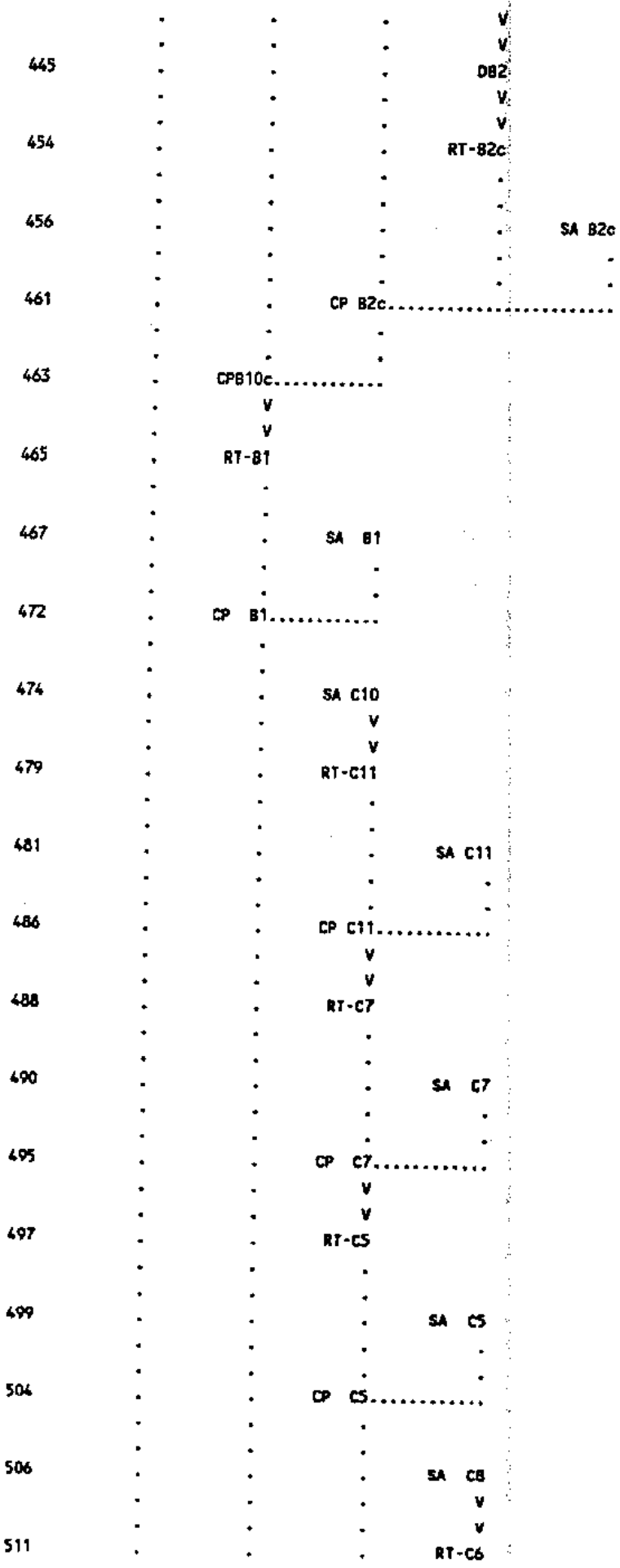
360 DB3

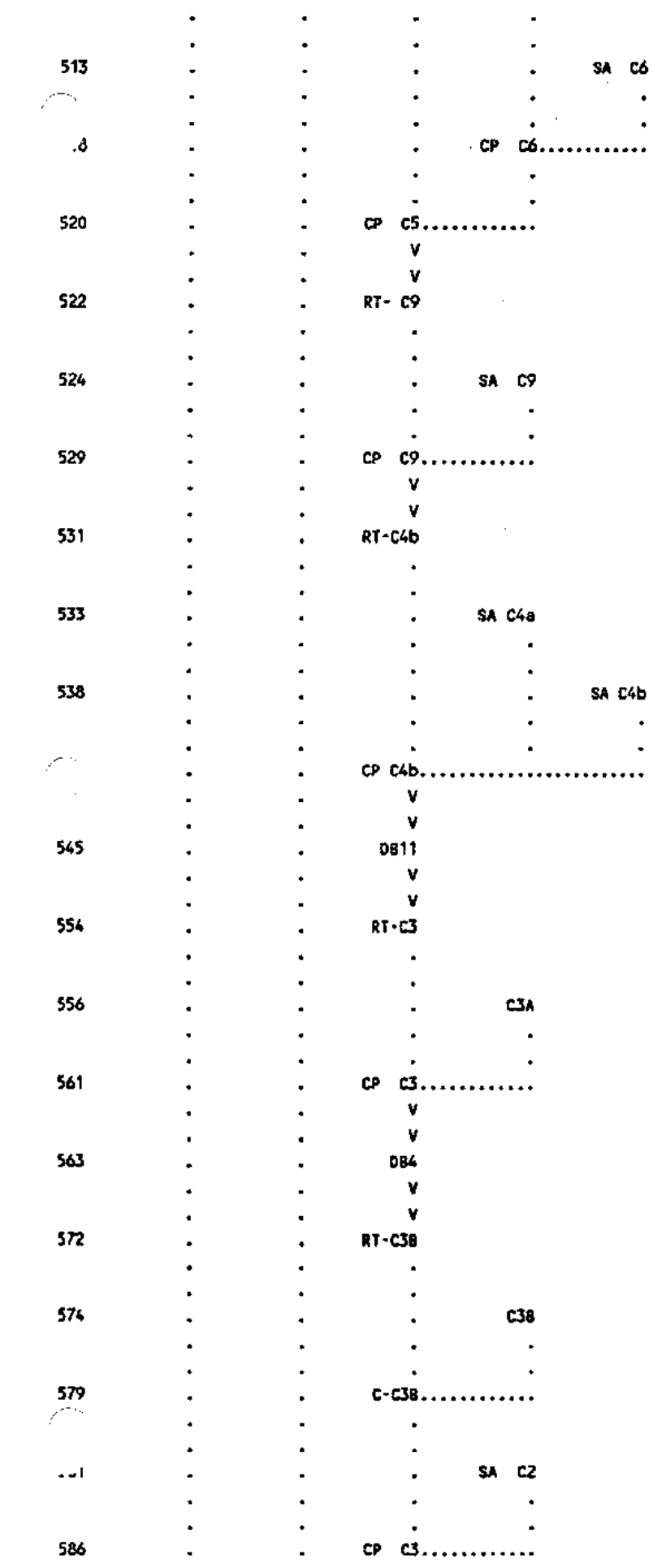
367 RT-10c

369 SAB10c

374 CPB10c

376	SA B16				
	V				
	V				
381	RT- B3				
	.				
	.				
383	.	SA B3			
	.	.			
	.	.			
388	CP B3	.....			
	V				
	V				
390	DB1				
	V				
	V				
397	RT-B5				
	.				
	.				
399	.	SA B6			
	.	V			
	.	V			
404	.	RT-B5			
	.	.			
	.	.			
406	.	.	SA B14		
	.	.	V		
	.	.	V		
	.	.	RT-B5		
	.	.	.		
	.	.	.		
	.	.	.		
	.	.	.		
413	.	.	.	SA B5	
	.	.	.	.	
	.	.	.	.	
418	CP B5	.....			
	V				
	V				
420	RT-B4				
	.				
	.				
422	.	SA B4			
	.	.			
	.	.			
427	CP B4	.....			
	V				
	V				
429	RT-B2c				
	.				
	.				
431	.	SA B2a			
	.	V			
	.	V			
436	.	RT-B2b			
	.	.			
	.	.			
438	.	.	SA B2b		
	.	.	.		
	.	.	.		
443	.	CP B2b	.....		


445
454
456
461
463
465
467
472
474
479
481
486
488
490
495
497
499
504
506
511
V
DB2
RT-B2c
SA B2c
CP B2c
CPB10c
RT-B1
SA B1
CP B1
SA C10
RT-C11
SA C11
CP C11
RT-C7
SA C7
CP C7
RT-C5
SA C5
CP C5
SA C8
RT-C6


513
SA C6
.8
CP C6
520
CP C5
522
RT- C9
524
SA C9
529
CP C9
531
RT-C4b
533
SA C4a
538
SA C4b
CP C4b
545
DB11
554
RT-C3
556
C3A
561
CP C3
563
DB4
572
RT-C3B
574
C3B
579
C-C3B
SA C2
586
CP C3

```
                V
                V
588          RT-C1
                .
                .
590             .          SA  C1
                .           .
                .           .
595             .     CP  C1.....
                .           .
                .           .
597          CP C81.....
                V
                V
599          RT-D1
                .
                .
601             .     SA  D1
                .           .
                .           .
606          MOGULE.....
                .
                .
609             .     SA F1A
                .           V
                .           V
614             .      DB13
                .           V
                .           V
623             .     RT-F1B
                .           .
                .           .
                .           .
                .           .
625             .           .     SA F1B
                .           .           .
                .           .           .
630             .           .  F1.....
                .           .           .
                .           .           .
632             .           .           .     SA  F2
                .           .           .           .
                .           .           .           .
637             .           .  MOGULW.....
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
**********************************************
*                                            *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)         *
*                MAY   1991                  *
*             VERSION 4.0.1E                 *
*     Lahey F77L-EM/32 version 5.01          *
*       Dodson & Associates, Inc.            *
*  RUN DATE  05/06/98  TIME  12:20:11        *
**********************************************
```


```
**************************************
*                                    *
*    U.S. ARMY CORPS OF ENGINEERS    *
*    HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET          *
*       DAVIS, CALIFORNIA 95616      *
*         (916) 551-1748             *
*                                    *
**************************************
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```
| SOMERSETT PLANNED UNIT DEVELOPEMENT                                          |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                     |
| DEVELOPED CONDITION WITH DETENTION BASINS                                    |
| Washoe County, Nevada                                                        |
|                                                                              |
|  5-Year Analysis                                                             |
|    - For offsite areas                                                       |
|    - Watersheds measured from USGS 7.5 Minute Quads                          |
|    - Rainfall entered using hypothetical storm option                        |
|    - Rainfall data estimated using revised NOAA precipitation data           |
|    - Curve number estimates based on Sage-Grass, as described in TR-55       |
|      (SCS, 1986)  or NEH-4 (SCS, 1972)                                       |
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)    |
|      as modified for the Washoe County Hydrologic Criteria Manual.           |
|                                                                              |
| File: SOMOT005.DAT                                WRC NEVADA, INC.           |
| APRIL 1998                                        1575 DELUCCHI LN STE.207A  |
| Project No.   3011                                Reno, Nevada  89502        |
|                                                  (702)332-3737,FAX 332-3740  |
```

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

   IT        HYDROGRAPH TIME DATA
                 MNIN          3  MINUTES IN COMPUTATION INTERVAL
                IDATE      1    0  STARTING DATE
                ITIME         0000  STARTING TIME
                   NQ         1441  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      4    0  ENDING DATE
               NDTIME         0000  ENDING TIME
               ICENT           19  CENTURY MARK

            COMPUTATION INTERVAL     0.05 HOURS
                TOTAL TIME BASE     72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	62.	12.40	18.	6.	2.	0.41		
ROUTED TO	RT-A7	63.	12.55	18.	6.	2.	0.41		
HYDROGRAPH AT	SA A7	66.	12.35	17.	6.	2.	0.30		
2 COMBINED AT	CP A7	116.	12.50	35.	12.	4.	0.71		
ROUTED TO	RT-A6a	116.	12.50	35.	12.	4.	0.71		
HYDROGRAPH AT	SA A6a	14.	12.20	3.	1.	0.	0.06		
2 COMBINED AT	CP A6a	120.	12.50	38.	13.	4.	0.77		
ROUTED TO	DB12	63.	13.00	38.	13.	4.	0.77	5439.42	13.00
ROUTED TO	RT-A6b	63.	13.15	38.	13.	4.	0.77		
HYDROGRAPH AT	SA A6b	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP A6b	66.	13.05	40.	14.	5.	0.82		
ROUTED TO	RT-A5	67.	13.10	40.	14.	5.	0.82		
HYDROGRAPH AT	SA A5	56.	12.20	10.	4.	1.	0.13		
2 COMBINED AT	CP A5	90.	12.25	50.	18.	6.	0.95		
ROUTED TO	RT-A4	91.	12.35	50.	18.	6.	0.95		
HYDROGRAPH AT	SA A3	31.	12.25	6.	2.	1.	0.13		
HYDROGRAPH AT	SA A4	1.	12.35	1.	0.	0.	0.04		
3 COMBINED AT	CP A4	116.	12.35	57.	20.	7.	1.12		
HYDROGRAPH AT	SA A10	66.	12.35	17.	6.	2.	0.28		
ROUTED TO	DB10	42.	12.60	17.	6.	2.	0.28	5383.47	12.60
HYDROGRAPH AT	SA A15	39.	12.35	10.	3.	1.	0.16		
ROUTED TO	RT-A9	39.	12.60	10.	3.	1.	0.16		
HYDROGRAPH AT	SA A9	75.	12.40	20.	7.	2.	0.36		
2 COMBINED AT	CP A9	102.	12.50	30.	10.	3.	0.52		
ROUTED TO	DB9	100.	12.55	30.	10.	3.	0.52	5384.39	12.55
2 COMBINED AT	CPA910	142.	12.55	46.	16.	5.	0.80		

ROUTED TO	RT-A8A	142.	12.60	46.	16.	5.	0.80		
HYDROGRAPH AT	SA A8A	14.	12.25	3.	1.	0.	0.05		
2 COMBINED AT	CP A8a	147.	12.60	49.	17.	6.	0.86		
HYDROGRAPH AT	SA A13	44.	12.35	11.	4.	1.	0.19		
HYDROGRAPH AT	SA A12	13.	12.25	3.	1.	0.	0.06		
2 COMBINED AT	CP A12	57.	12.30	14.	5.	2.	0.25		
ROUTED TO	DB6	43.	12.50	14.	5.	2.	0.25	5192.07	12.50
ROUTED TO	RT-A8B	44.	12.65	14.	5.	2.	0.25		
HYDROGRAPH AT	SA A8B	26.	12.25	6.	2.	1.	0.14		
3 COMBINED AT	CP A8B	200.	12.65	69.	24.	8.	1.25		
HYDROGRAPH AT	SA A11	14.	12.40	4.	1.	0.	0.11		
3 COMBINED AT	CP4811	294.	12.60	130.	45.	15.	2.47		
ROUTED TO	RT-A2	291.	12.50	130.	45.	15.	2.47		
HYDROGRAPH AT	SA A2	29.	12.35	8.	3.	1.	0.20		
2 COMBINED AT	CP A2	314.	12.50	137.	48.	16.	2.67		
ROUTED TO	RT-A1	312.	12.55	137.	48.	16.	2.67		
ROUTED TO	RT-A1	312.	12.65	137.	48.	16.	2.67		
HYDROGRAPH AT	SA A1	12.	12.40	4.	1.	0.	0.11		
HYDROGRAPH AT	SA E6A	23.	12.10	3.	1.	0.	0.03		
ROUTED TO	DB5	6.	12.40	3.	1.	0.	0.03	5117.04	12.40
ROUTED TO	RT-E6B	6.	12.45	3.	1.	0.	0.03		
HYDROGRAPH AT	SA E6B	7.	12.10	1.	0.	0.	0.01		
2 COMBINED AT	C-E6	11.	12.10	4.	1.	0.	0.05		
ROUTED TO	RT-E64	12.	12.25	4.	1.	0.	0.05		
HYDROGRAPH AT	E5B	55.	12.20	9.	3.	1.	0.09		
ROUTED TO	DB8	31.	12.40	9.	3.	1.	0.09	5127.06	12.40
ROUTED TO	RT-E5B	31.	12.40	9.	3.	1.	0.09		
HYDROGRAPH AT	E5A	27.	12.10	4.	1.	0.	0.03		
2 COMBINED AT	C-E5	45.	12.15	13.	5.	2.	0.12		
ROUTED TO	DB14	9.	14.05	9.	5.	2.	0.12	5066.23	14.05

ROUTED TO	RT-E54	9.	14.20	9.	5.	2.	0.12
2 COMBINED AT	C-E56	17.	12.25	12.	6.	2.	0.17
ROUTED TO	RT-E4	17.	12.65	12.	6.	2.	0.17
HYDROGRAPH AT	SA E4	85.	12.40	23.	8.	3.	0.45
2 COMBINED AT	CP E4	92.	12.40	35.	14.	5.	0.62
ROUTED TO	RT-E3	92.	12.55	35.	14.	5.	0.62
HYDROGRAPH AT	SA E3	14.	12.35	4.	1.	0.	0.12
2 COMBINED AT	CP E3	102.	12.55	39.	15.	5.	0.74
ROUTED TO	RT-A1	101.	12.55	39.	15.	5.	0.74
HYDROGRAPH AT	SA E2	1.	15.60	1.	0.	0.	0.16
ROUTED TO	RT-E1	1.	16.10	1.	0.	0.	0.16
HYDROGRAPH AT	SA E1	13.	12.40	4.	1.	0.	0.12
2 COMBINED AT	CP E1	13.	12.40	5.	2.	1.	0.28
ROUTED TO	RT-A1	13.	12.50	5.	2.	1.	0.28
4 COMBINED AT	I-80	429.	12.65	184.	67.	22.	3.80
HYDROGRAPH AT	SA B17	64.	12.40	19.	6.	2.	0.41
ROUTED TO	RT-B12	63.	12.70	19.	6.	2.	0.41
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24
ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24
HYDROGRAPH AT	SA B12	55.	12.30	15.	5.	2.	0.35
3 COMBINED AT	CP B12	116.	12.60	41.	14.	5.	1.00
ROUTED TO	RT-B11	117.	12.70	41.	14.	5.	1.00
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08
2 COMBINED AT	CP B11	122.	12.70	44.	15.	5.	1.08
ROUTED TO	RT-10a	124.	12.80	44.	15.	5.	1.08
HYDROGRAPH AT	SAB10a	28.	12.30	6.	2.	1.	0.11
2 COMBINED AT	CPB10a	133.	12.80	49.	17.	6.	1.19
HYDROGRAPH AT	SA B8a	41.	12.30	10.	3.	1.	0.24
ROUTED TO	RT-B8b	41.	12.35	10.	3.	1.	0.24
HYDROGRAPH AT	SA B8b	15.	12.20	3.	1.	0.	0.04

HYDROGRAPH AT	SA B9	11.	12.30	3.	1.	0.	0.06		
3 COMBINED AT	CP B8b	63.	12.30	15.	5.	2.	0.34		
ROUTED TO	RT-87	63.	12.40	15.	5.	2.	0.34		
HYDROGRAPH AT	SA B7	4.	12.25	1.	0.	0.	0.02		
3 COMBINED AT	CPB10a	163.	12.80	65.	23.	8.	1.55		
ROUTED TO	RT-10b	162.	12.80	65.	23.	8.	1.55		
HYDROGRAPH AT	SAB10b	17.	12.10	3.	1.	0.	0.04		
2 COMBINED AT	CPB10b	165.	12.80	67.	24.	8.	1.59		
ROUTED TO	DB3	143.	12.95	67.	24.	8.	1.59	5015.33	12.95
ROUTED TO	RT-10c	143.	13.00	67.	24.	8.	1.59		
HYDROGRAPH AT	SAB10c	6.	12.10	1.	0.	0.	0.01		
2 COMBINED AT	CPB10c	144.	13.00	68.	24.	8.	1.60		
HYDROGRAPH AT	SA B16	31.	12.30	7.	2.	1.	0.09		
ROUTED TO	RT- B3	31.	12.30	7.	2.	1.	0.09		
HYDROGRAPH AT	SA B3	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B3	45.	12.25	10.	3.	1.	0.14		
ROUTED TO	DB1	4.	17.10	4.	3.	1.	0.14	5054.01	17.45
ROUTED TO	RT-85	4.	17.55	4.	3.	1.	0.14		
HYDROGRAPH AT	SA B6	6.	12.25	1.	0.	0.	0.03		
ROUTED TO	RT-85	6.	12.40	1.	0.	0.	0.03		
HYDROGRAPH AT	SA B14	17.	12.25	4.	1.	0.	0.09		
ROUTED TO	RT-85	17.	12.40	4.	1.	0.	0.09		
HYDROGRAPH AT	SA B5	16.	12.30	4.	1.	0.	0.08		
4 COMBINED AT	CP B5	39.	12.40	13.	6.	2.	0.33		
ROUTED TO	RT-84	40.	12.45	13.	6.	2.	0.33		
HYDROGRAPH AT	SA B4	13.	12.15	2.	1.	0.	0.04		
2 COMBINED AT	CP B4	45.	12.40	15.	7.	2.	0.37		
ROUTED TO	RT-82c	45.	12.50	15.	7.	2.	0.37		
HYDROGRAPH AT	SA B2a	23.	12.15	4.	1.	0.	0.05		
ROUTED TO	RT-B2b	24.	12.25	4.	1.	0.	0.05		

HYDROGRAPH AT	SA B2b	50.	12.20	8.	3.	1.	0.13		
2 COMBINED AT	CP B2b	71.	12.20	12.	4.	1.	0.18		
ROUTED TO	D82	60.	12.30	12.	4.	1.	0.18	5049.70	12.30
ROUTED TO	RT-B2c	60.	12.40	12.	4.	1.	0.18		
HYDROGRAPH AT	SA B2c	18.	12.25	4.	1.	0.	0.06		
3 COMBINED AT	CP B2c	111.	12.45	30.	13.	4.	0.61		
2 COMBINED AT	CPB10c	192.	12.50	97.	37.	12.	2.21		
ROUTED TO	RT-B1	192.	12.55	97.	37.	12.	2.21		
HYDROGRAPH AT	SA B1	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B1	196.	12.55	100.	38.	13.	2.26		
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66		
ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66		
HYDROGRAPH AT	SA C11	97.	12.25	19.	6.	2.	0.32		
2 COMBINED AT	CP C11	198.	12.45	58.	20.	7.	0.97		
ROUTED TO	RT-C7	198.	12.55	58.	20.	7.	0.97		
HYDROGRAPH AT	SA C7	73.	12.30	17.	6.	2.	0.34		
2 COMBINED AT	CP C7	243.	12.55	75.	25.	8.	1.31		
ROUTED TO	RT-C5	243.	12.60	75.	25.	8.	1.31		
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15		
2 COMBINED AT	CP C5	257.	12.60	81.	27.	9.	1.46		
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24		
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24		
HYDROGRAPH AT	SA C6	14.	12.30	4.	1.	0.	0.10		
2 COMBINED AT	CP C6	70.	12.40	16.	5.	2.	0.33		
2 COMBINED AT	CP C5	306.	12.50	97.	33.	11.	1.80		
ROUTED TO	RT- C9	305.	12.55	97.	33.	11.	1.80		
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11		
2 COMBINED AT	CP C9	313.	12.50	100.	34.	11.	1.91		
ROUTED TO	RT-C4b	313.	12.60	100.	34.	11.	1.91		
HYDROGRAPH AT	SA C4a	17.	12.25	4.	1.	0.	0.09		

HYDROGRAPH AT	SA C4b	6.	12.25	1.	0.	0.	0.04		
3 COMBINED AT	CP C4b	322.	12.55	104.	36.	12.	2.04		
ROUTED TO	DB11	177.	13.15	104.	36.	12.	2.04	5105.96	13.15
ROUTED TO	RT-C3	177.	13.20	104.	36.	12.	2.04		
HYDROGRAPH AT	C3A	11.	12.35	3.	1.	0.	0.12		
2 COMBINED AT	CP C3	181.	13.20	108.	37.	12.	2.16		
ROUTED TO	DB4	179.	13.35	107.	37.	12.	2.16	5023.36	13.35
ROUTED TO	RT-C3B	179.	13.35	107.	37.	12.	2.16		
HYDROGRAPH AT	C3B	12.	12.35	3.	1.	0.	0.10		
2 COMBINED AT	C-C3B	182.	13.35	111.	38.	13.	2.26		
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17		
2 COMBINED AT	CP C3	188.	13.35	116.	40.	13.	2.43		
ROUTED TO	RT-C1	188.	13.40	116.	40.	13.	2.43		
HYDROGRAPH AT	SA C1	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP C1	191.	13.40	118.	41.	14.	2.51		
2 COMBINED AT	CP CB1	362.	13.20	218.	78.	26.	4.77		
ROUTED TO	RT-D1	362.	13.30	218.	78.	26.	4.77		
HYDROGRAPH AT	SA D1	31.	12.30	8.	3.	1.	0.22		
2 COMBINED AT	MOGULE	371.	13.30	225.	81.	27.	4.99		
HYDROGRAPH AT	SA F1A	22.	12.15	4.	1.	0.	0.07		
ROUTED TO	DB13	4.	13.40	3.	1.	0.	0.07	5068.24	13.45
ROUTED TO	RT-F1B	4.	13.60	3.	1.	0.	0.07		
HYDROGRAPH AT	SA F1B	20.	12.25	4.	2.	1.	0.11		
2 COMBINED AT	F1	21.	12.25	7.	3.	1.	0.18		
HYDROGRAPH AT	SA F2	24.	12.30	6.	2.	1.	0.14		
2 COMBINED AT	MOGULW	44.	12.25	13.	5.	2.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
RT-A7	MANE	3.00	62.58	753.00	0.57	3.00	62.58	753.00	0.57
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1250E+02 EXCESS=0.0000E+00 OUTFLOW=0.1250E+02 BASIN STORAGE=0.2748E-02 PERCENT ERROR= -0.1									
RT-A6a	MANE	1.35	115.89	749.79	0.64	3.00	115.80	750.00	0.64
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2421E+02 EXCESS=0.0000E+00 OUTFLOW=0.2421E+02 BASIN STORAGE=0.3375E-03 PERCENT ERROR= 0.0									
RT-A6b	MANE	3.00	63.09	789.00	0.64	3.00	63.09	789.00	0.64
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2604E+02 EXCESS=0.0000E+00 OUTFLOW=0.2604E+02 BASIN STORAGE=0.1315E-02 PERCENT ERROR= 0.0									
RT-A5	MANE	3.00	66.58	786.00	0.64	3.00	66.58	786.00	0.64
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2800E+02 EXCESS=0.0000E+00 OUTFLOW=0.2800E+02 BASIN STORAGE=0.6379E-03 PERCENT ERROR= 0.0									
RT-A4	MANE	3.00	90.53	741.00	0.70	3.00	90.53	741.00	0.70
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3522E+02 EXCESS=0.0000E+00 OUTFLOW=0.3522E+02 BASIN STORAGE=0.2028E-02 PERCENT ERROR= 0.0									
RT-A9	MANE	3.00	39.25	756.00	0.79	3.00	39.25	756.00	0.79
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6619E+01 EXCESS=0.0000E+00 OUTFLOW=0.6622E+01 BASIN STORAGE=0.3590E-02 PERCENT ERROR= -0.1									
RT-A8A	MANE	3.00	142.07	756.00	0.74	3.00	142.07	756.00	0.74
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3168E+02 EXCESS=0.0000E+00 OUTFLOW=0.3168E+02 BASIN STORAGE=0.1041E-02 PERCENT ERROR= 0.0									
RT-A8B	MANE	3.00	44.04	759.00	0.71	3.00	44.04	759.00	0.71
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9346E+01 EXCESS=0.0000E+00 OUTFLOW=0.9347E+01 BASIN STORAGE=0.2444E-02 PERCENT ERROR= 0.0									
RT-A2	MANE	3.00	291.49	750.00	0.68	3.00	291.49	750.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8993E+02 EXCESS=0.0000E+00 OUTFLOW=0.8993E+02 BASIN STORAGE=0.3075E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.83	312.18	754.54	0.67	3.00	311.97	753.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9527E+02 EXCESS=0.0000E+00 OUTFLOW=0.9527E+02 BASIN STORAGE=0.8696E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	312.39	759.00	0.67	3.00	312.39	759.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9525E+02 EXCESS=0.0000E+00 OUTFLOW=0.9526E+02 BASIN STORAGE=0.2676E-02 PERCENT ERROR= 0.0

RT-E68	MANE	2.92	5.63	748.28	1.15	3.00	5.62	747.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2141E+01 EXCESS=0.0000E+00 OUTFLOW=0.2141E+01 BASIN STORAGE=0.2776E-03 PERCENT ERROR= 0.0

RT-E64	MANE	3.00	11.52	735.00	1.14	3.00	11.52	735.00	1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2756E+01 EXCESS=0.0000E+00 OUTFLOW=0.2756E+01 BASIN STORAGE=0.1053E-02 PERCENT ERROR= 0.0

RT-E58	MANE	3.00	30.76	744.00	1.41	3.00	30.76	744.00	1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6722E+01 EXCESS=0.0000E+00 OUTFLOW=0.6722E+01 BASIN STORAGE=0.4984E-03 PERCENT ERROR= 0.0

RT-E54	MANE	3.00	9.13	858.00	1.41	3.00	9.13	858.00	1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9329E+01 EXCESS=0.0000E+00 OUTFLOW=0.9329E+01 BASIN STORAGE=0.1674E-02 PERCENT ERROR= 0.0

RT-E4	MANE	3.00	17.04	759.00	1.34	3.00	17.04	759.00	1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1209E+02 EXCESS=0.0000E+00 OUTFLOW=0.1209E+02 BASIN STORAGE=0.3171E-02 PERCENT ERROR= 0.0

RT-E3	MANE	3.00	92.09	753.00	0.86	3.00	92.09	753.00	0.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2815E+02 EXCESS=0.0000E+00 OUTFLOW=0.2815E+02 BASIN STORAGE=0.2203E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.76	101.56	753.67	0.78	3.00	101.30	753.00	0.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3076E+02 EXCESS=0.0000E+00 OUTFLOW=0.3076E+02 BASIN STORAGE=0.5075E-03 PERCENT ERROR= 0.0

RT-E1	MANE	3.00	1.24	972.00	0.11	3.00	1.24	972.00	0.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9687E+00 EXCESS=0.0000E+00 OUTFLOW=0.9694E+00 BASIN STORAGE=0.2198E-02 PERCENT ERROR= -0.3

RT-A1	MANE	3.00	13.22	750.00	0.25	3.00	13.22	750.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3647E+01 EXCESS=0.0000E+00 OUTFLOW=0.3647E+01 BASIN STORAGE=0.1346E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	63.43	762.00	0.57	3.00	63.43	762.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1254E+02 EXCESS=0.0000E+00 OUTFLOW=0.1254E+02 BASIN STORAGE=0.4176E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	24.40	756.00	0.45	3.00	24.40	756.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5701E+01 EXCESS=0.0000E+00 OUTFLOW=0.5704E+01 BASIN STORAGE=0.2449E-02 PERCENT ERROR= -0.1

RT-B11	MANE	3.00	117.05	762.00	0.53	3.00	117.05	762.00	0.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2822E+02 EXCESS=0.0000E+00 OUTFLOW=0.2822E+02 BASIN STORAGE=0.1209E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	124.08	768.00	0.52	3.00	124.08	768.00	0.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3019E+02 EXCESS=0.0000E+00 OUTFLOW=0.3020E+02 BASIN STORAGE=0.1735E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	3.00	40.63	741.00	0.51	3.00	40.63	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6638E+01 EXCESS=0.0000E+00 OUTFLOW=0.6639E+01 BASIN STORAGE=0.6975E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	63.17	744.00	0.56	3.00	63.17	744.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1027E+02 EXCESS=0.0000E+00 OUTFLOW=0.1027E+02 BASIN STORAGE=0.1635E-02 PERCENT ERROR= 0.0

RT-10b	MANE	1.28	162.32	767.67	0.55	3.00	162.13	768.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4535E+02 EXCESS=0.0000E+00 OUTFLOW=0.4535E+02 BASIN STORAGE=0.3287E-03 PERCENT ERROR= 0.0

RT-10c	MANE	2.03	142.80	779.42	0.56	3.00	142.76	780.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4710E+02 EXCESS=0.0000E+00 OUTFLOW=0.4710E+02 BASIN STORAGE=0.4990E-03 PERCENT ERROR= 0.0

RT- B3	MANE	1.24	31.09	737.62	0.93	3.00	31.01	738.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4638E+01 EXCESS=0.0000E+00 OUTFLOW=0.4638E+01 BASIN STORAGE=0.2021E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	4.04	1056.00	0.88	3.00	4.04	1056.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6585E+01 EXCESS=0.0000E+00 OUTFLOW=0.6585E+01 BASIN STORAGE=0.3778E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.64	744.00	0.55	3.00	5.64	744.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8464E+00 EXCESS=0.0000E+00 OUTFLOW=0.8468E+00 BASIN STORAGE=0.1350E-02 PERCENT ERROR= -0.2

RT-B5	MANE	3.00	17.17	744.00	0.58	3.00	17.17	744.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2697E+01 EXCESS=0.0000E+00 OUTFLOW=0.2697E+01 BASIN STORAGE=0.1645E-02 PERCENT ERROR= -0.1

RT-B4	MANE	3.00	39.71	747.00	0.71	3.00	39.71	747.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1262E+02 EXCESS=0.0000E+00 OUTFLOW=0.1262E+02 BASIN STORAGE=0.6230E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	45.11	750.00	0.72	3.00	45.10	750.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1416E+02 EXCESS=0.0000E+00 OUTFLOW=0.1416E+02 BASIN STORAGE=0.7656E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	23.56	735.00	0.88	3.00	23.56	735.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2453E+01 EXCESS=0.0000E+00 OUTFLOW=0.2453E+01 BASIN STORAGE=0.8794E-03 PERCENT ERROR= -0.1

RT-B2c	MANE	3.00	59.70	744.00	0.88	3.00	59.70	744.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8338E+01 EXCESS=0.0000E+00 OUTFLOW=0.8339E+01 BASIN STORAGE=0.1542E-02 PERCENT ERROR= 0.0

RT-B1	MANE	3.00	191.85	753.00	0.62	3.00	191.85	753.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7265E+02 EXCESS=0.0000E+00 OUTFLOW=0.7265E+02 BASIN STORAGE=0.1112E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	198.11	753.00	0.76	3.00	198.11	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3927E+02 EXCESS=0.0000E+00 OUTFLOW=0.3927E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	243.33	756.00	0.72	3.00	243.33	756.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5056E+02 EXCESS=0.0000E+00 OUTFLOW=0.5056E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT- C9	MANE	2.28	306.83	751.45	0.68	3.00	305.11	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6534E+02 EXCESS=0.0000E+00 OUTFLOW=0.6534E+02 BASIN STORAGE=0.7993E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	2.42	313.20	753.57	0.66	3.00	312.74	756.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6752E+02 EXCESS=0.0000E+00 OUTFLOW=0.6752E+02 BASIN STORAGE=0.6963E-03 PERCENT ERROR= 0.0

RT-C3	MANE	3.00	176.88	792.00	0.65	3.00	176.88	792.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7087E+02 EXCESS=0.0000E+00 OUTFLOW=0.7087E+02 BASIN STORAGE=0.1068E-02 PERCENT ERROR= 0.0

RT-C3B	MANE	2.36	178.65	801.37	0.63	3.00	178.58	801.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7314E+02 EXCESS=0.0000E+00 OUTFLOW=0.7314E+02 BASIN STORAGE=0.6036E-03 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	187.96	804.00	0.61	3.00	187.96	804.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7898E+02 EXCESS=0.0000E+00 OUTFLOW=0.7898E+02 BASIN STORAGE=0.1193E-02 PERCENT ERROR= 0.0

RT-01	MANE	3.00	361.95	798.00	0.61	3.00	361.95	798.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1556E+03 EXCESS=0.0000E+00 OUTFLOW=0.1556E+03 BASIN STORAGE=0.2097E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	3.60	822.00	0.65	3.00	3.60	822.00	0.65

JITY SUMMARY (AC-FT) - INFLOW=0.2511E+01 EXCESS=0.0000E+00 OUTFLOW=0.2511E+01 BASIN STORAGE=0.1447E-02 PERCENT ERROR= -0.1

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

ADDPENDIX D
100-Year Analysis

APPENDIX D - 100-YEAR ANALYSIS

HEC-1 Output
100-Year Existing Condition Analysis

URS NEVADA, INC.

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
*  RUN DATE  05/06/98  TIME  01:45:43   *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```


```
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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   | EXISTING CONDITION                                                     |
    5     ID   | Washoe County, Nevada                                                  |
    6     ID   |                                                                        |
    7     ID   | 100- Year Analysis                                                     |
    8     ID   |    - For offsite areas                                                 |
    9     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   10     ID   |    - Rainfall entered using hypothetical storm option                  |
   11     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   12     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   13     ID   |      (SCS, 1986)  or NEH-4 (SCS, 1972)                                 |
   14     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n) |
   15     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   16     ID   |                                                                        |
   17     ID   | File: SOMEX100.DAT                          WRC NEVADA, INC.          |
   18     ID   | APRIL 1997                                  1575 DELUCCHI LN STE.207A |
   19     ID   | Project No.   3011                          Reno, Nevada  89502       |
   20     ID   |                                            (702)332-3737,FAX 332-3740|
   21     ID   ==========================================================================
   22     IT      3       0       0    1441
   23     IO      5       0       0
          *
          *
          * *********   WATERSHED SUBAREA A    **************
          *
          *

   24     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   25     PH       1            0.60    1.09    1.81    2.05    2.23    2.60    3.48    4.35
   26     BA  0.4094
   27     LS       0      73
   28     UD    0.32
          *

   29     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   30     RD    5700    0.14    0.07           TRAP       6       3
          *

   31     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   32     PH       1            0.55    1.00    1.67    1.91    2.10    2.49    3.27    4.06
   33     BA  0.3002
   34     LS       0      81
   35     UD    0.31
          *

   36     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   37     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  38      KK   RT-A6 ROUTE HDROGRAPH TO OUTLET OF AREA A6
  39      RD    2700   0.089    0.07           TRAP       6       3
          *

  40      KK  SA  A6 GENERATE HYDOGRAPH FOR SUB-AREA A6
  41      PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.02    3.77
  42      BA  0.1163
  43      LS       0      73
  44      UD    0.29
          *

  45      KK  CP  A6 COMBINE HYDROGRAPHS FROM AREA A6 AND AREA A7
  46      HC       2
          *

  47      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  48      RD    1700   0.047    0.07           TRAP       6       3
          *

  49      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  50      PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.02    3.77
  51      BA  0.1406
  52      LS       0      72
  53      UD    0.28
          *

  54      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  55      HC       2
          *

  56      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  57      RD    1900   0.063     .07           TRAP       6       3
          *

  58      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  59      PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.92    3.66
  60      BA  0.1638
  61      LS       0      78
  62      UD    0.25
          *

  63      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  64      PH       1            0.50    0.91    1.52    1.73    1.89    2.21    2.98    3.75
  65      BA  0.0428
  66      LS       0      61
  67      UD    0.29
          *

  68      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  69      HC       3
          *
```

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

  70      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  71      PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.30    4.11
  72      BA  0.2852
  73      LS       0      79
  74      UD    0.30
          *

  75      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
  76      PH       1            0.60    1.09    1.81    2.04    2.21    2.58    3.46    4.35
  77      BA  0.1563
  78      LS       0      78
  79      UD    0.29
          *

  80      KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
  81      RD    6800   0.165     .08            TRAP       6       3
          *

  82      KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
  83      PH       1            0.57    1.04    1.74    1.97    2.14    2.51    3.32    4.13
  84      BA  0.3677
  85      LS       0      78
  86      UD    0.33
          *

  87      KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15 AND A10
  88      HC       3
          *

  89      KK   RT-A8 ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8
  90      RD    4800   0.050     .07            TRAP       6       3
          *

  91      KK  SA  A8 GENERATE HYDOGRAPH FOR SUB-AREA A8
  92      PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
  93      BA  0.1497
  94      LS       0      74
  95      UD    0.33
          *

  96      KK  CP  A8 COMBINE HYDROGRAPHS FROM AREA A8 W/ COMB HYDROGRAPH FROM AREA A9 & A10
  97      HC       2
          *

  98      KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
  99      PH       1            0.56    1.02    1.70    1.91    2.07     2.4    3.21    4.02
 100      BA  0.1961
 101      LS               78
 102      UD    0.30
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  103     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  104     PH       1            0.55    1.00    1.67    1.88    2.04    2.37    3.18    4.00
  105     BA  0.0544
  106     LS       0      78
  107     UD    0.23
          *

  108     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  109     HC       2
          *

  110     KK  RT-A11 ROUTE COMBINED HYDROGRAPH A12&13 TO OUTLET OF A11
  111     RD    2400  0.0147    0.07           TRAP       6       3
          *

  112     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  113     PH       1            0.54    0.98    1.63    1.82    1.96    2.26    3.04    3.82
  114     BA  0.1278
  115     LS       0      73
  116     UD    0.31
          *

  117     KK  CP A11 COMBINE HYDROGRAPH FROM AREA A11 W/COMB HYDROGRAPHS FROM AREA A12 & A13
  118     HC       2
          *

  119     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A3, A4, A8 AND A11
  120     HC       3
          *

  121     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  122     RD    4400  0.0386     .07           TRAP       6       3
          *

  123     KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
  124     PH       1            0.49    0.89    1.48    1.68    1.83    2.15    2.91    3.66
  125     BA  0.2264
  126     LS       0      78
  127     UD    0.25
          *

  128     KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
  129     HC       2
          *

  130     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
  131     RD    1500    0.07    0.07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  132     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
  133     RD    2400  0.0125   0.040           TRAP      15       3
          *

  134     KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
  135     PH       1            0.48    0.87    1.45    1.64    1.78    2.08    2.79    3.51
  136     BA  0.1127
  137     LS       0      76
  138     UD    0.33
          *
          *
          * *********   WATERSHED SUBAREA E    **************
          *
          *

  139     KK  SA  E6 GENERATE HYDOGRAPH FOR SUB-AREA E6
  140     PH       1            0.54    0.98    1.63    1.82    1.96    2.26    3.06    3.86
  141     BA  0.0448
  142     LS       0      65
  143     UD    0.22
          *

  144     KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  145     RD    1900  0.0658     .07           TRAP       6       3
          *

  146     KK  SA  E5 GENERATE HYDOGRAPH FOR SUB-AREA E5
  147     PH       1            0.54    0.98    1.63    1.84    2.00    2.33    3.14    3.95
  148     BA  0.1241
  149     LS       0      77
  150     UD    0.27
          *

  151     KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  152     RD    2500  0.0360     .07           TRAP       6       3
          *

  153     KK  CP E56 COMBINE HYDROGRAPH  E5 W/HYDROGRAPH E6 AT CONFLUENCE
  154     HC       2
          *

  155     KK   RT-E4 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
  156     RD    4500  0.0310     .07           TRAP       6       3
          *

  157     KK  SA  E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
  158     PH       1            0.51    0.93    1.56    1.75    1.89    2.19    2.98    3.77
  159     BA  0.4231
  160     LS       0      76
  161     UD    0.36
          *
```

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

  162     KK  CP  E4 COMBINE HYDROGRAPH  E4 W/HYDROGRAPH E5 AND E6
  163     HC       2
          *

  164     KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
  165     RD    3500  0.0429     .07           TRAP       6       3
          *

  166     KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
  167     PH       1           0.50    0.91    1.52    1.69    1.81    2.08    2.83    3.57
  168     BA  0.1191
  169     LS       0      75
  170     UD    0.27
          *

  171     KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
  172     HC       2
          *

  173     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  174     RD     500  0.0125     .04           TRAP      15       3
          *

  175     KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
  176     PH       1           0.50    0.91    1.52    1.71    1.85    2.15    2.92    3.69
  177     BA  0.1653
  178     LS       0      62
  179     UD    0.38
          *

  180     KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
  181     RD    3200  0.0375     .07           TRAP       6       3
          *

  182     KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
  183     PH       1           0.49    0.89    1.48    1.66    1.80    2.08    2.80    3.53
  184     BA  0.1156
  185     LS       0      76
  186     UD    0.31
          *

  187     KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
  188     HC       2
          *

  189     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  190     RD    1200  0.0125     .04           TRAP      15       3
          *
```

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

191       KK    I-80
192       KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
193       HC       4
          *
          * *********   WATERSHED SUBAREA B    *************
          *
          *
          *

194       KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
195       PH                    0.59    1.06    1.77    2.02    2.21    2.60    3.41    4.22
196       BA  0.4136
197       LS       0      76
198       UD    0.32
          *

199       KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
200       RD    3900  0.0133     .07           TRAP       6       3
          *

201       KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
202       PH                    0.59    1.06    1.77    2.01    2.20    2.58    3.44    4.31
203       BA  0.2400
204       LS       0      70
205       UD    0.33
          *

206       KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
207       RD    4500  0.1510     .08           TRAP       6       3
          *

208       KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
209       PH                    0.54    0.98    1.63    1.87    2.06    2.44    3.22    4.00
210       BA  0.3484
211       LS       0      79
212       UD    0.26
          *

213       KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
214       HC       3
          *

215       KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
216       RD    2000  0.1000     .07           TRAP       6       3
          *

217       KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
218       PH                    0.51    0.93    1.56    1.75    1.90    2.21    2.95    3.69
219       BA  0.0820
220       LS       0      76
221       UD    0.24
          *
```

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

  222     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  223     HC       2
          *

  224     KK  RT-B10 ROUTE HYDROGRAPH TO OUTLET OF B10
  225     RD    4600  0.0696     .07           TRAP       6       3
          *

  226     KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  227     PH       1            0.50    0.91    1.52    1.72    1.87    2.19    2.93    3.66
  228     BA  0.0850
  229     LS       0      78
  230     UD    0.27
          *

  231     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B9 TO OUTLET OF AREA B7
  232     RD    2500  0.0760     .07           TRAP       6       3
          *

  233     KK  SA  B8 GENERATE HYDOGRAPH FOR SUB-AREA B8
  234     PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  235     BA  0.2102
  236     LS       0      78
  237     UD    0.22
          *

  238     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  239     RD    3800  0.0757     .07           TRAP       6       3
          *

  240     KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  241     PH       1            0.47    0.85    1.41    1.62    1.77    2.10    2.82    3.53
  242     BA  0.0514
  243     LS       0      78
  244     UD    0.30
          *

  245     KK  CP  B7 COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B8 & B9
  246     HC       3
          *

  247     KK  RT-B10 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B10
  248     RD    1000  0.0800     .07           TRAP       6       3
          *

  249     KK  SA B10 GENERATE HYDOGRAPH FOR SUB-AREA B10
  250     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  251     BA  0.1245
  252     LS       0      75
  253     UD    0.35
          *
```

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

  254     KK  CP B10 COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B11,12,13,17
  255     HC       3
          *
          *

  256     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  257     PH       1            0.49    0.89    1.48    1.7    1.87    2.21    2.94    3.66
  258     BA  0.0344
  259     LS       0      78
  260     UD    0.21
          *

  261     KK   RT-B4 ROUTE HYDROGRAPH FROM B6 TO OUTLET OF B4
  262     RD    3300  0.0848     .07           TRAP       6       3
          *

  263     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  264     PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
  265     BA  0.0985
  266     LS       0      77
  267     UD    0.22
          *

  268     KK  RT-B15 ROUTE HYDROGRAPH FROM B14 TO OUTLET OF B15
  269     RD    2500  0.0640     .07           TRAP       6       3
          *

  270     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  271     PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
  272     BA  0.0422
  273     LS       0      73
  274     UD    0.23
          *

  275     KK  RT-B15 ROUTE HYDROGRAPH FROM B14 TO OUTLET OF B15
  276     RD    1600  0.0625     .07           TRAP       6       3
          *

  277     KK  SA B15 GENERATE HYDOGRAPH FOR SUB-AREA B15
  278     PH       1            0.48    0.87    1.45    1.65    1.80    2.12    2.84    3.55
  279     BA  0.0373
  280     LS       0      70
  281     UD    0.26
          *

  282     KK  CP B15 COMBINE HYDROGRAPH FROM AREAS B15 W/HYDROGRAPHS FROM AREA B5 & B14
  283     HC       3
          *
```

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

284       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
285       PH       1            0.49    0.89    1.48    1.70    1.86    2.19    2.92    3.64
286       BA  0.0695
287       LS       0      78
288       UD    0.21
          *

289       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
290       RD    1500  0.0533     .07           TRAP       6       3
          *

291       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
292       PH       1            0.48    0.87    1.45    1.66    1.82    2.15    2.87    3.60
293       BA  0.0746
294       LS       0      78
295       UD    0.25
          *

296       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
297       HC       2
          *

298       KK  CP B15 COMBINE HYDROGRAPH FROM AREAS B3,B16 W/HYDROGRAPHS FROM AREA B5,14&15
299       HC       2
          *

300       KK   RT-B4 ROUTE HYDROGRAPH TO OUTLET OF B4
301       RD    1300  0.0615     .07           TRAP       6       3
          *

302       KK  SA  B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
303       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
304       BA  0.0697
305       LS       0      78
306       UD    0.22
          *

307       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B16,15,14,3,5,&6
308       HC       3
          *

309       KK  SA  B2 GENERATE HYDOGRAPH FOR SUB-AREA B2
310       PH       1            0.48    0.87    1.45    1.64    1.79    2.10    2.82    3.53
311       BA  0.1092
312       LS       0      78
313       UD    0.32
          *

314       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B2 W/HYDROGRAPH FROM B16,15,14,3,4,5&6
315       HC       2
          *
```

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

316       KK  CP B10 COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
317       HC       2
          *

318       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
319       RD    1400  0.0286     .07           TRAP       6       3
          *

320       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
321       PH       1            0.45    0.83    1.38    1.57    1.72    2.03    2.73    3.42
322       BA  0.0669
323       LS       0      76
324       UD    0.16
          *

325       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
326       HC       2
          *
          * *********   WATERSHED SUBAREA C    **************
          *
          *
          *

327       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
328       PH       1            0.62    1.13    1.88    2.12    2.29    2.67    3.53    4.40
329       BA  0.6580
330       LS       0      77
331       UD    0.33
          *

332       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
333       RD    4800  0.1583     .07           TRAP       6       3
          *

334       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
335       PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.24    4.00
336       BA  0.3359
337       LS       0      80
338       UD    0.19
          *

339       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
340       HC       2
          *

341       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
342       RD    5500  0.1091     .07           TRAP       6       3
          *
```

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

  343     KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
  344     PH       1           0.53    0.96    1.59    1.79    1.94    2.26    2.96    3.66
  345     BA  0.3167
  346     LS       0      80
  347     UD    0.26
          *

  348     KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
  349     HC       2
          *

  350     KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
  351     RD    3000  0.0933     .07           TRAP       6       3
          *

  352     KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
  353     PH       1           0.49    0.89    1.49    1.66    1.80    2.08    2.77    3.46
  354     BA  0.1528
  355     LS       0      78
  356     UD    0.27
          *

  357     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FRON AREA C7, 10 & C11
  358     HC       2
          *

  359     KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
  360     PH       1           0.53    0.96    1.59    1.80    1.96    2.28    3.02    3.75
  361     BA  0.2380
  362     LS       0      80
  363     UD    0.23
          *

  364     KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
  365     RD    3200  0.0750     .07           TRAP       6       3
          *

  366     KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
  367     PH       1           0.49    0.89    1.48    1.68    1.83    2.15    2.85    3.55
  368     BA  0.1280
  369     LS       0      75
  370     UD    0.25
          *

  371     KK  CP  C8 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
  372     HC       2
          *

  373     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
  374     HC       2
          *
```

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

375       KK   RT-C4 ROUTE HYDROGRAPH TO OUTLET OF C4
376       RD    2300  0.0610     .07           TRAP       6       3
          *

377       KK  SA  C4 GENERATE HYDOGRAPH FOR SUB-AREA C4
378       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
379       BA  0.1198
380       LS       0      69
381       UD    0.30
          *

382       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
383       PH       1            0.47    0.85    1.41    1.59    1.73    2.01    2.69    3.37
384       BA  0.1147
385       LS       0      75
386       UD    0.27
          *

387       KK   RT-C4 ROUTE HYDROGRAPH TO OUTLET OF C4
388       RD    2000  0.0500     .07           TRAP       6       3
          *

389       KK  CP  C4 COMBINE HYDROGRAPH FROM AREA C4 W/HYDROGRAPH FROM AREA C5 AND C9
390       HC       3
          *

391       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3
392       RD    1800  0.0556     .07           TRAP       6       3
          *

393       KK  SA  C3 GENERATE HYDOGRAPH FOR SUB-AREA C3
394       PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
395       BA  0.2161
396       LS       0      77
397       UD    0.31
          *

398       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
399       HC       2
          *

400       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
401       PH       1            0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
402       BA  0.1705
403       LS       0      78
404       UD    0.26
          *

405       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
406       HC       2
          *
```

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

407       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
408       RD    1500  0.0400     .07           TRAP       6       3
          *

409       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
410       PH       1           0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
411       BA  0.0723
412       LS       0      78
413       UD    0.24
          *

414       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
415       HC       2
          *

416       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
417       HC       2
          *

418       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
419       RD    3200  0.0500     .07           TRAP       6       2
          *

420       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
421       PH       1           0.45    0.83    1.38    1.56    1.70    1.99    2.69    3.40
422       BA  0.2191
423       LS       0      73
424       UD    0.24
          *

425       KK  MogulE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
426       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
427       HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    **************
          *
          *

428       KK  SA  F1 GENERATE HYDOGRAPH FOR SUB-AREA F1
429       PH       1           0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
430       BA  0.1969
431       LS       0      76
432       UD    0.32
          *

433       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
434       PH       1           0.48    0.87    1.45    1.64    1.78    2.08    2.80    3.53
435       BA  0.1352
436       LS       0      79
437       UD    0.25
          *
```

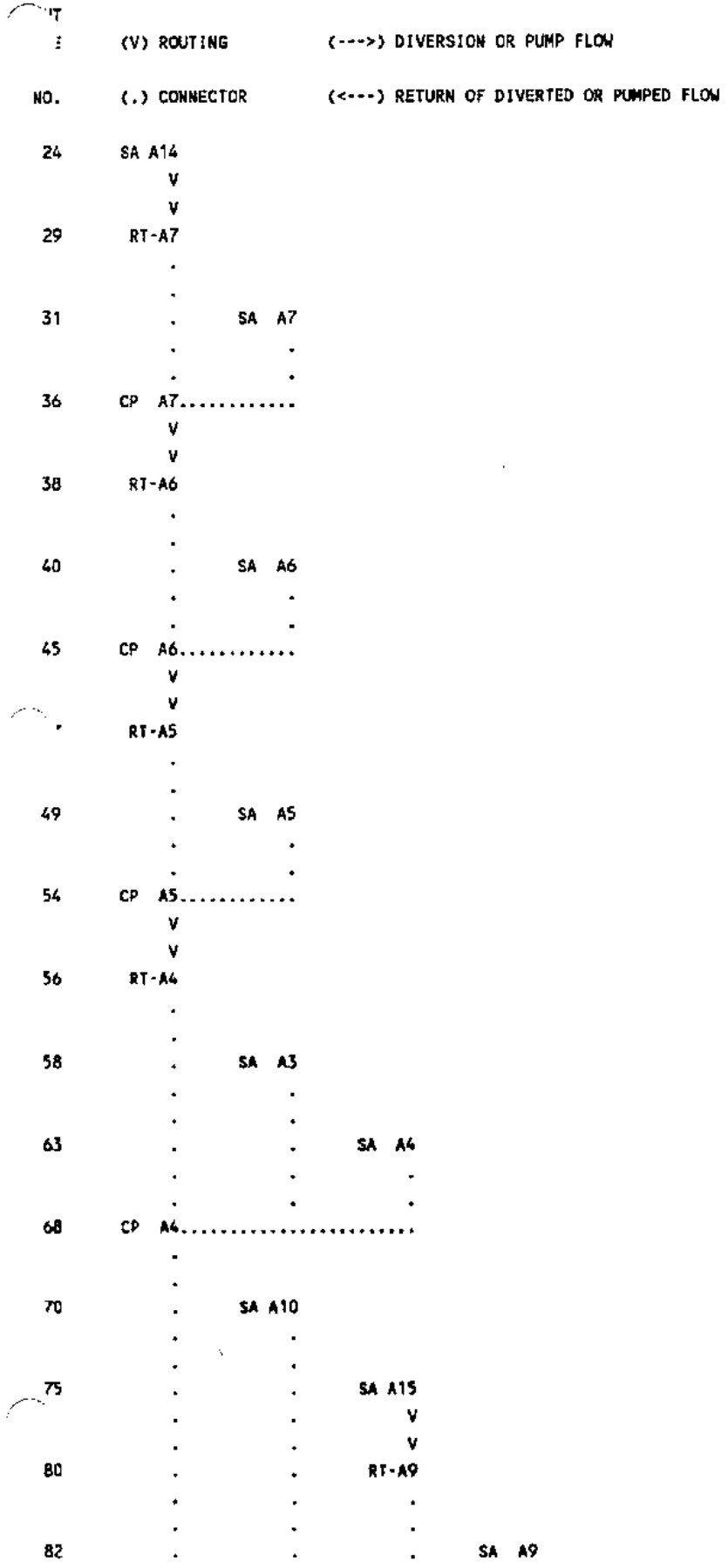
```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

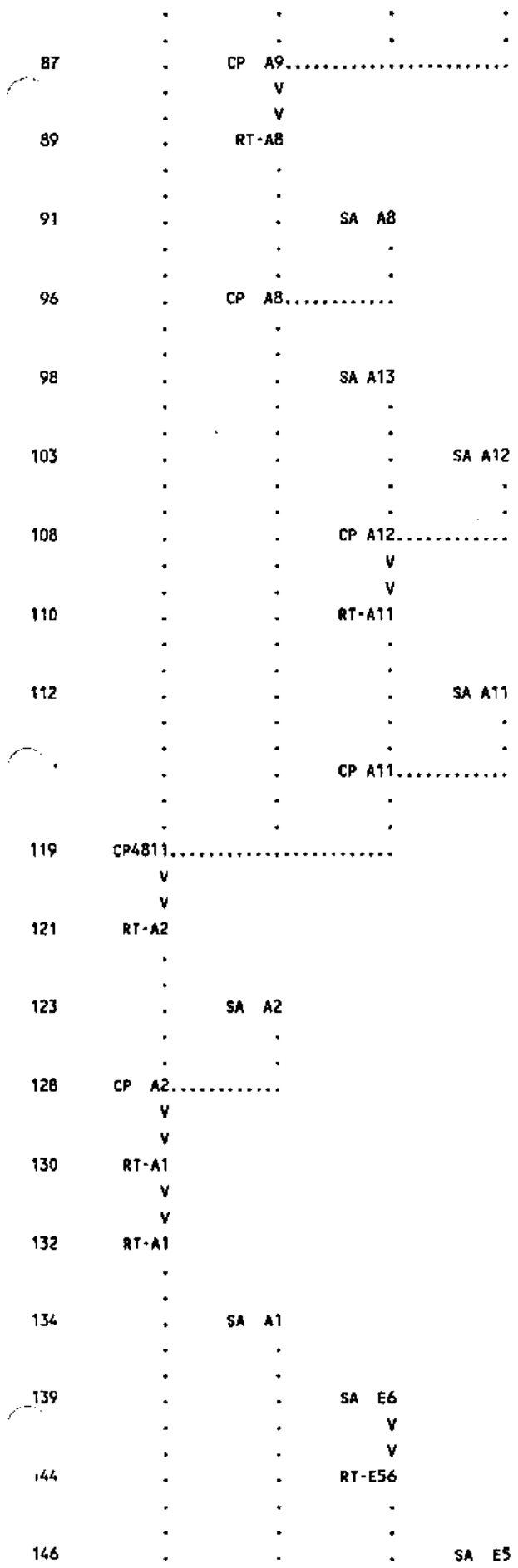
  438     KK  MogulW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  439     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  440     HC       2
          *
  441     ZZ
```

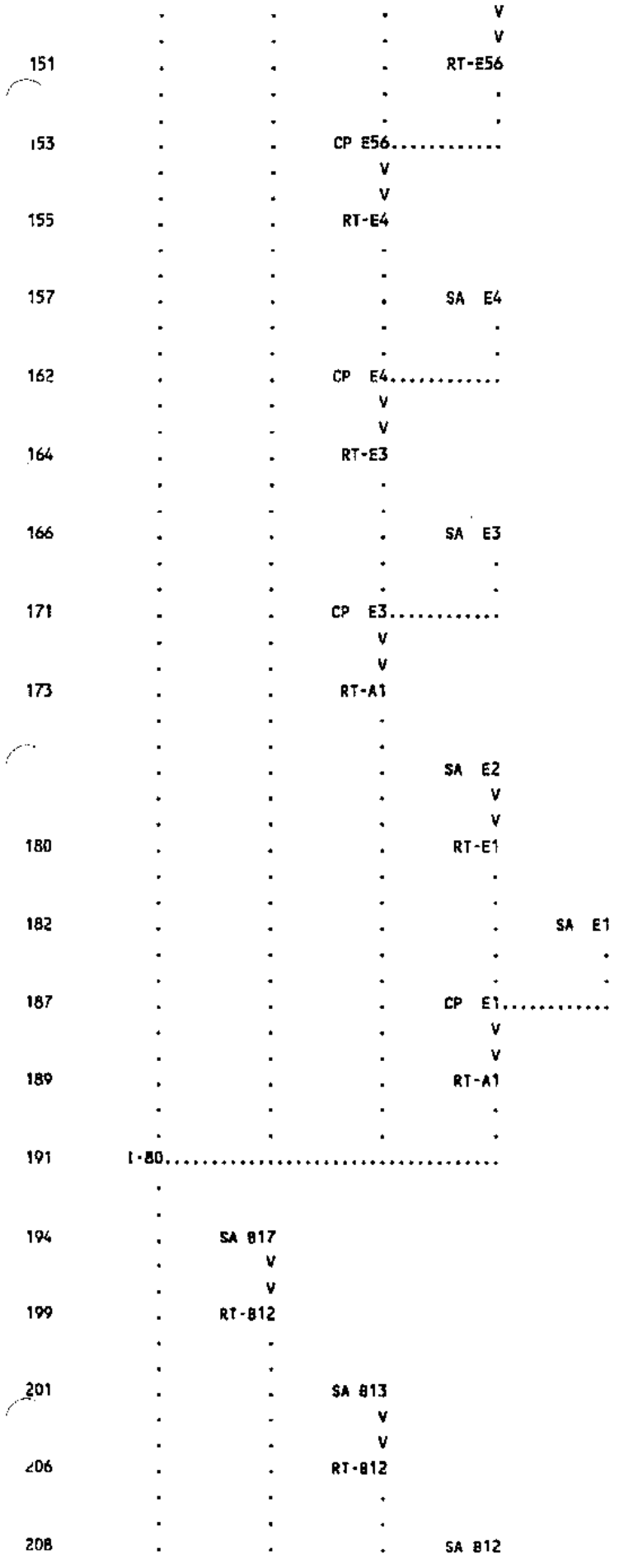
SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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



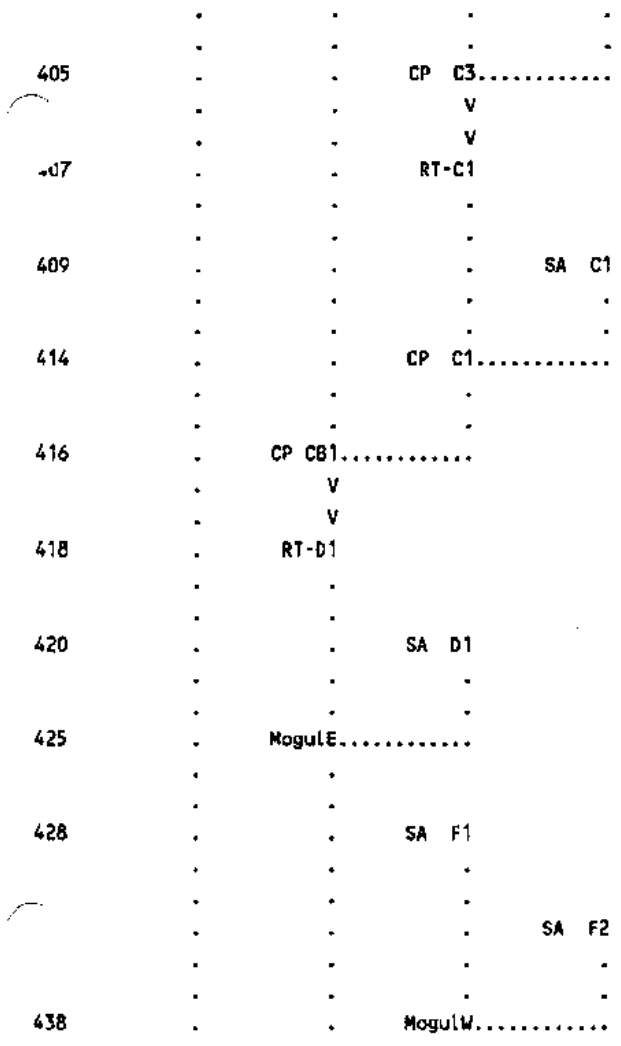

87 CP A9
89 RT-A8
91 SA A8
96 CP A8
98 SA A13
103 SA A12
108 CP A12
110 RT-A11
112 SA A11
CP A11
119 CP4811
121 RT-A2
123 SA A2
128 CP A2
130 RT-A1
132 RT-A1
134 SA A1
139 SA E6
144 RT-E56
146 SA E5


151 RT-E56
153 CP E56
155 RT-E4
157 SA E4
162 CP E4
164 RT-E3
166 SA E3
171 CP E3
173 RT-A1
SA E2
180 RT-E1
182 SA E1
187 CP E1
189 RT-A1
191 I-80
194 SA 817
199 RT-812
201 SA 813
206 RT-812
208 SA 812

```
213          CP B12.....................
                V
                V
215          RT-B11
                .
                .
217                SA B11
                   .
                   .
222          CP B11.............
                V
                V
224          RT-B10
                .
                .
226                SA  B9
                      V
                      V
231                 RT-B7
                      .
                      .
233                       SA  B8
                            V
                            V
238                       RT-B7
                            .
                            .
                            .                SA  B7
                            .                  .
                            .                  .
245                CP  B7.....................
                      V
                      V
247                RT-B10
                      .
                      .
249                       SA B10
                            .
                            .
254          CP B10.....................
                .
                .
256                SA  B6
                      V
                      V
261                 RT-B4
                      .
                      .
263                       SA B14
                            V
                            V
268                       RT-B15
                            .
                            .
270                                      SA  B5
                                           V
                                           V
275                                     RT-B15
```

```
                                                                    .
                                                                    .
277                                                                 .  SA B15
                                                                    .     .
                                                                    .     .
282                                                 CP B15..........     .
                                                                    .
                                                                    .
284                                                                 .  SA B16
                                                                    .     V
                                                                    .     V
289                                                                 .  RT- B3
                                                                    .     .
                                                                    .     .
291                                                                 .  SA  B3
                                                                    .     .
                                                                    .     .
296                                                                 .  CP  B3.....
                                                                    .     .
                                                                    .     .
298                                                 CP B15..........
                                                                    V
                                                                    V
300                                                 RT-B4
                                                                    .
                                                                    .
302                                                                 .  SA  B4
                                                                    .     .
                                                                    .     .
 7                                      CP  B4.......................
                                                                    .
                                                                    .
309                                                 SA  B2
                                                                    .
                                                                    .
314                                    CP  B4.....
                                                                    .
                                                                    .
316                                 CP B10.....
                                       V
                                       V
318                                 RT-B1
                                       .
                                       .
320                                    SA  B1
                                       .
                                       .
325                                 CP  B1.....
                                       .
                                       .
327                                    SA C10
                                          V
                                          V
332                                    RT-C11
                                       .
                                       .
534                                                 SA C11
                                                    .
                                                    .
339                                    CP C11.....
```

```
                .       .         V
                .       .         V
341             .       .       RT-C7
                .       .         .
                .       .         .
343             .       .         .       SA  C7
                .       .         .         .
                .       .         .         .
348             .       .       CP  C7.............
                .       .         V
                .       .         V
350             .       .       RT-C5
                .       .         .
                .       .         .
352             .       .         .       SA  C5
                .       .         .         .
                .       .         .         .
357             .       .       CP  C5.............
                .       .         .
                .       .         .
359             .       .         .       SA  C8
                .       .         .         V
                .       .         .         V
364             .       .         .       RT-C6
                .       .         .         .
                .       .         .         .
366             .       .         .         .       SA  C6
                .       .         .         .         .
                .       .         .         .         .
1               .       .         .       CP  C8.............
                .       .         .         .
                .       .         .         .
373             .       .       CP  C5.............
                .       .         V
                .       .         V
375             .       .       RT-C4
                .       .         .
                .       .         .
377             .       .         .       SA  C4
                .       .         .         .
                .       .         .         .
382             .       .         .         .       SA  C9
                .       .         .         .         V
                .       .         .         .         V
387             .       .         .         .       RT-C4
                .       .         .         .         .
                .       .         .         .         .
389             .       .       CP  C4.........................
                .       .         V
                .       .         V
391             .       .       RT-C3
                .       .         .
                .       .         .
393             .       .         .       SA  C3
                .       .         .         .
                .       .         .         .
398             .       .       CP  C3.............
                .       .         .
                .       .         .
400             .       .         .       SA  C2
```



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              MAY  1991                *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  01:45:43   *
*                                       *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748               *
*                                       *
*****************************************
```


```
| SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
| EXISTING CONDITION                                                     |
| Washoe County, Nevada                                                  |
|                                                                        |
| 100- Year Analysis                                                     |
|    - For offsite areas                                                 |
|    - Watersheds measured from USGS 7.5 Minute Quads                    |
|    - Rainfall entered using hypothetical storm option                  |
|    - Rainfall data estimated using revised NOAA precipitation data     |
|    - Curve number estimates based on Sage-Grass, as described in TR-55 |
|      (SCS, 1986)  or NEH-4 (SCS, 1972)                                 |
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n) |
|      as modified for the Washoe County Hydrologic Criteria Manual.     |
|                                                                        |
| File: SOMEX100.DAT                          WRC NEVADA, INC.           |
| APRIL 1997                                  1575 DELUCCHI LN STE.207A  |
| Project No.   3011                          Reno, Nevada  89502        |
|                                            (702)332-3737,FAX 332-3740  |
```

```
23 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       1441  NUMBER OF HYDROGRAPH ORDINATES
                   NQDATE     4   0  ENDING DATE
                   NQTIME       0000  ENDING TIME
                   ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.05 HOURS
                     TOTAL TIME BASE   72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	343.	12.40	59.	20.	7.	0.41		
ROUTED TO	RT-A7	345.	12.50	59.	20.	7.	0.41		
HYDROGRAPH AT	SA A7	317.	12.35	53.	18.	6.	0.30		
2 COMBINED AT	CP A7	633.	12.45	111.	37.	12.	0.71		
ROUTED TO	RT-A6	635.	12.50	111.	37.	12.	0.71		
HYDROGRAPH AT	SA A6	76.	12.35	13.	4.	1.	0.12		
2 COMBINED AT	CP A6	696.	12.50	124.	41.	14.	0.83		
ROUTED TO	RT-A5	694.	12.50	124.	41.	14.	0.83		
HYDROGRAPH AT	SA A5	88.	12.35	15.	5.	2.	0.14		
2 COMBINED AT	CP A5	763.	12.50	139.	46.	15.	0.97		
ROUTED TO	RT-A4	763.	12.55	139.	46.	15.	0.97		
HYDROGRAPH AT	SA A3	142.	12.30	21.	7.	2.	0.16		
HYDROGRAPH AT	SA A4	11.	12.40	2.	1.	0.	0.04		
3 COMBINED AT	CP A4	853.	12.55	163.	54.	18.	1.17		
HYDROGRAPH AT	SA A10	297.	12.35	47.	16.	5.	0.29		
HYDROGRAPH AT	SA A15	173.	12.35	27.	9.	3.	0.16		
ROUTED TO	RT-A9	174.	12.50	27.	9.	3.	0.16		
HYDROGRAPH AT	SA A9	348.	12.40	59.	20.	7.	0.37		
3 COMBINED AT	CP A9	784.	12.40	134.	45.	15.	0.81		
ROUTED TO	RT-A8	781.	12.55	134.	45.	15.	0.81		
HYDROGRAPH AT	SA A8	102.	12.40	18.	6.	2.	0.15		
2 COMBINED AT	CP A8	872.	12.50	152.	51.	17.	0.96		
HYDROGRAPH AT	SA A13	189.	12.35	30.	10.	3.	0.20		
HYDROGRAPH AT	SA A12	59.	12.25	8.	3.	1.	0.05		
2 COMBINED AT	CP A12	243.	12.35	38.	13.	4.	0.25		
ROUTED TO	RT-A11	244.	12.45	38.	13.	4.	0.25		

HYDROGRAPH AT	SA A11	87.	12.35	15.	5.	2.	0.13
2 COMBINED AT	CP A11	326.	12.45	53.	18.	6.	0.38
3 COMBINED AT	CP4811	2031.	12.50	368.	122.	41.	2.51
ROUTED TO	RT-A2	2032.	12.60	368.	122.	41.	2.51
HYDROGRAPH AT	SA A2	196.	12.30	29.	10.	3.	0.23
2 COMBINED AT	CP A2	2128.	12.60	396.	132.	44.	2.74
ROUTED TO	RT-A1	2117.	12.60	396.	132.	44.	2.74
ROUTED TO	RT-A1	2117.	12.65	396.	132.	44.	2.74
HYDROGRAPH AT	SA A1	71.	12.40	12.	4.	1.	0.11
HYDROGRAPH AT	SA E6	22.	12.30	3.	1.	0.	0.04
ROUTED TO	RT-E56	22.	12.40	3.	1.	0.	0.04
HYDROGRAPH AT	SA E5	115.	12.30	18.	6.	2.	0.12
ROUTED TO	RT-E56	114.	12.40	18.	6.	2.	0.12
2 COMBINED AT	CP E56	137.	12.40	21.	7.	2.	0.17
ROUTED TO	RT-E4	142.	12.60	21.	7.	2.	0.17
HYDROGRAPH AT	SA E4	289.	12.40	53.	18.	6.	0.42
2 COMBINED AT	CP E4	388.	12.55	74.	25.	8.	0.59
ROUTED TO	RT-E3	387.	12.70	74.	25.	8.	0.59
HYDROGRAPH AT	SA E3	84.	12.30	13.	4.	1.	0.12
2 COMBINED AT	CP E3	423.	12.70	86.	29.	10.	0.71
ROUTED TO	RT-A1	421.	12.70	86.	29.	10.	0.71
HYDROGRAPH AT	SA E2	39.	12.50	9.	3.	1.	0.17
ROUTED TO	RT-E1	39.	12.70	9.	3.	1.	0.17
HYDROGRAPH AT	SA E1	77.	12.35	13.	4.	1.	0.12
2 COMBINED AT	CP E1	94.	12.50	21.	7.	2.	0.28
ROUTED TO	RT-A1	94.	12.60	21.	7.	2.	0.28
4 COMBINED AT	I-80	2660.	12.65	515.	173.	58.	3.84
HYDROGRAPH AT	SA B17	378.	12.35	65.	21.	7.	0.41
ROUTED TO	RT-B12	377.	12.55	65.	21.	7.	0.41
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24

ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24
HYDROGRAPH AT	SA B12	363.	12.30	55.	18.	6.	0.35
3 COMBINED AT	CP B12	781.	12.50	149.	50.	17.	1.00
ROUTED TO	RT-B11	777.	12.50	149.	50.	17.	1.00
HYDROGRAPH AT	SA B11	69.	12.30	10.	3.	1.	0.08
2 COMBINED AT	CP B11	821.	12.50	159.	53.	18.	1.08
ROUTED TO	RT-B10	824.	12.60	159.	53.	18.	1.08
HYDROGRAPH AT	SA B9	72.	12.30	11.	4.	1.	0.09
ROUTED TO	RT-B7	72.	12.40	11.	4.	1.	0.09
HYDROGRAPH AT	SA B8	214.	12.25	29.	10.	3.	0.21
ROUTED TO	RT-B7	214.	12.35	29.	10.	3.	0.21
HYDROGRAPH AT	SA B7	37.	12.35	6.	2.	1.	0.05
3 COMBINED AT	CP B7	320.	12.40	47.	15.	5.	0.35
ROUTED TO	RT-B10	320.	12.40	47.	15.	5.	0.35
HYDROGRAPH AT	SA B10	69.	12.40	13.	4.	1.	0.12
3 COMBINED AT	CP B10	1121.	12.55	219.	73.	24.	1.56
HYDROGRAPH AT	SA B6	33.	12.25	5.	1.	0.	0.03
ROUTED TO	RT-B4	33.	12.40	5.	1.	0.	0.03
HYDROGRAPH AT	SA B14	91.	12.25	13.	4.	1.	0.10
ROUTED TO	RT-B15	91.	12.35	13.	4.	1.	0.10
HYDROGRAPH AT	SA B5	28.	12.30	4.	1.	0.	0.04
ROUTED TO	RT-B15	28.	12.35	4.	1.	0.	0.04
HYDROGRAPH AT	SA B15	19.	12.30	3.	1.	0.	0.04
3 COMBINED AT	CP B15	138.	12.35	20.	7.	2.	0.18
HYDROGRAPH AT	SA B16	66.	12.25	9.	3.	1.	0.07
ROUTED TO	RT- B3	65.	12.30	9.	3.	1.	0.07
HYDROGRAPH AT	SA B3	62.	12.30	9.	3.	1.	0.07
2 COMBINED AT	CP B3	128.	12.30	19.	6.	2.	0.14
2 COMBINED AT	CP B15	263.	12.35	39.	13.	4.	0.32
ROUTED TO	RT-B4	259.	12.40	39.	13.	4.	0.32

HYDROGRAPH AT	SA B4	59.	12.25	8.	3.	1.	0.07
3 COMBINED AT	CP B4	341.	12.35	52.	17.	6.	0.43
HYDROGRAPH AT	SA B2	78.	12.35	13.	4.	1.	0.11
2 COMBINED AT	CP B4	419.	12.35	65.	22.	7.	0.54
2 COMBINED AT	CP B10	1439.	12.50	284.	94.	31.	2.09
ROUTED TO	RT-B1	1434.	12.55	284.	94.	31.	2.09
HYDROGRAPH AT	SA B1	57.	12.20	7.	2.	1.	0.07
2 COMBINED AT	CP B1	1452.	12.55	291.	97.	32.	2.16
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66
ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66
HYDROGRAPH AT	SA C11	450.	12.25	56.	18.	6.	0.34
2 COMBINED AT	CP C11	952.	12.35	170.	56.	19.	0.99
ROUTED TO	RT-C7	957.	12.45	170.	56.	19.	0.99
HYDROGRAPH AT	SA C7	316.	12.30	46.	15.	5.	0.32
2 COMBINED AT	CP C7	1207.	12.45	216.	71.	24.	1.31
ROUTED TO	RT-C5	1208.	12.50	216.	71.	24.	1.31
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15
2 COMBINED AT	CP C5	1309.	12.45	234.	77.	26.	1.46
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24
HYDROGRAPH AT	SA C6	92.	12.30	14.	5.	2.	0.13
2 COMBINED AT	CP C8	348.	12.35	50.	16.	5.	0.37
2 COMBINED AT	CP C5	1612.	12.45	283.	93.	31.	1.83
ROUTED TO	RT-C4	1598.	12.45	283.	93.	31.	1.83
HYDROGRAPH AT	SA C4	47.	12.35	9.	3.	1.	0.12
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11
ROUTED TO	RT-C4	71.	12.40	11.	4.	1.	0.11
3 COMBINED AT	CP C4	1714.	12.45	303.	100.	33.	2.06
ROUTED TO	RT-C3	1708.	12.50	303.	100.	33.	2.06
HYDROGRAPH AT	SA C3	131.	12.35	22.	7.	2.	0.22

2 COMBINED AT	CP C3	1822.	12.50	325.	107.	36.	2.28
HYDROGRAPH AT	SA C2	115.	12.30	17.	6.	2.	0.17
2 COMBINED AT	CP C3	1903.	12.50	342.	113.	38.	2.45
ROUTED TO	RT-C1	1890.	12.50	342.	113.	38.	2.45
HYDROGRAPH AT	SA C1	53.	12.30	8.	3.	1.	0.07
2 COMBINED AT	CP C1	1924.	12.50	350.	116.	39.	2.52
2 COMBINED AT	CP CB1	3367.	12.50	641.	212.	71.	4.68
ROUTED TO	RT-D1	3375.	12.55	641.	212.	71.	4.68
HYDROGRAPH AT	SA D1	127.	12.30	20.	7.	2.	0.22
2 COMBINED AT	MogulE	3448.	12.55	660.	219.	73.	4.90
HYDROGRAPH AT	SA F1	121.	12.40	21.	7.	2.	0.20
HYDROGRAPH AT	SA F2	117.	12.30	17.	6.	2.	0.14
2 COMBINED AT	MogulW	232.	12.35	38.	13.	4.	0.33

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	345.18	750.00	1.78	3.00	345.18	750.00	1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3890E+02 EXCESS=0.0000E+00 OUTFLOW=0.3891E+02 BASIN STORAGE=0.2877E-02 PERCENT ERROR= 0.0

RT-A6	MANE	3.00	635.14	750.00	1.95	3.00	635.14	750.00	1.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7366E+02 EXCESS=0.0000E+00 OUTFLOW=0.7367E+02 BASIN STORAGE=0.1509E-02 PERCENT ERROR= 0.0

RT-A5	MANE	2.97	698.10	750.38	1.86	3.00	694.32	750.00	1.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8213E+02 EXCESS=0.0000E+00 OUTFLOW=0.8213E+02 BASIN STORAGE=0.1369E-02 PERCENT ERROR= 0.0

RT-A4	MANE	2.91	764.04	752.87	1.78	3.00	763.32	753.00	1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9194E+02 EXCESS=0.0000E+00 OUTFLOW=0.9195E+02 BASIN STORAGE=0.1436E-02 PERCENT ERROR= 0.0

RT-A9	MANE	3.00	174.29	750.00	2.17	3.00	174.29	750.00	2.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1808E+02 EXCESS=0.0000E+00 OUTFLOW=0.1809E+02 BASIN STORAGE=0.3192E-02 PERCENT ERROR= -0.1

RT-A8	MANE	3.00	780.64	753.00	2.05	3.00	780.64	753.00	2.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8831E+02 EXCESS=0.0000E+00 OUTFLOW=0.8832E+02 BASIN STORAGE=0.3340E-02 PERCENT ERROR= 0.0

RT-A11	MANE	3.00	243.65	747.00	1.90	3.00	243.65	747.00	1.90

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2537E+02 EXCESS=0.0000E+00 OUTFLOW=0.2537E+02 BASIN STORAGE=0.2245E-02 PERCENT ERROR= 0.0

RT-A2	MANE	3.00	2031.78	756.00	1.81	3.00	2031.78	756.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2429E+03 EXCESS=0.0000E+00 OUTFLOW=0.2429E+03 BASIN STORAGE=0.2977E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.66	2121.40	756.24	1.80	3.00	2117.31	756.00	1.80

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2624E+03 EXCESS=0.0000E+00 OUTFLOW=0.2624E+03 BASIN STORAGE=0.7875E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	2116.57	759.00	1.80	3.00	2116.57	759.00	1.80

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2624E+03 EXCESS=0.0000E+00 OUTFLOW=0.2624E+03 BASIN STORAGE=0.3014E-02 PERCENT ERROR= 0.0

RT-E56	MANE	3.00	22.28	744.00	0.95	3.00	22.28	744.00	0.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2266E+01 EXCESS=0.0000E+00 OUTFLOW=0.2267E+01 BASIN STORAGE=0.1067E-02 PERCENT ERROR= -0.1

RT-E56	MANE	3.00	114.33	744.00	1.77	3.00	114.33	744.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1173E+02 EXCESS=0.0000E+00 OUTFLOW=0.1173E+02 BASIN STORAGE=0.1736E-02 PERCENT ERROR= 0.0

RT-E4	MANE	3.00	141.68	756.00	1.56	3.00	141.68	756.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1400E+02 EXCESS=0.0000E+00 OUTFLOW=0.1401E+02 BASIN STORAGE=0.4201E-02 PERCENT ERROR= -0.1

RT-E3	MANE	3.00	386.79	762.00	1.56	3.00	386.79	762.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4928E+02 EXCESS=0.0000E+00 OUTFLOW=0.4928E+02 BASIN STORAGE=0.2757E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.13	421.35	761.88	1.53	3.00	421.11	762.00	1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5786E+02 EXCESS=0.0000E+00 OUTFLOW=0.5786E+02 BASIN STORAGE=0.5893E-03 PERCENT ERROR= 0.0

RT-E1	MANE	2.40	39.05	760.80	0.71	3.00	38.81	762.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6226E+01 EXCESS=0.0000E+00 OUTFLOW=0.6232E+01 BASIN STORAGE=0.2529E-02 PERCENT ERROR= -0.1

RT-A1	MANE	3.00	94.42	756.00	0.99	3.00	94.42	756.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1478E+02 EXCESS=0.0000E+00 OUTFLOW=0.1478E+02 BASIN STORAGE=0.1225E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	376.75	753.00	1.91	3.00	376.75	753.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4206E+02 EXCESS=0.0000E+00 OUTFLOW=0.4206E+02 BASIN STORAGE=0.4401E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0

RT-B11	MANE	2.57	780.67	751.23	1.84	3.00	776.82	750.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9822E+02 EXCESS=0.0000E+00 OUTFLOW=0.9823E+02 BASIN STORAGE=0.1249E-02 PERCENT ERROR= 0.0

RT-B10	MANE	3.00	823.99	756.00	1.81	3.00	823.99	756.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1048E+03 EXCESS=0.0000E+00 OUTFLOW=0.1048E+03 BASIN STORAGE=0.2666E-02 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	72.23	744.00	1.62	3.00	72.23	744.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7343E+01 EXCESS=0.0000E+00 OUTFLOW=0.7344E+01 BASIN STORAGE=0.1456E-02 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	214.26	741.00	1.71	3.00	214.26	741.00	1.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1911E+02 EXCESS=0.0000E+00 OUTFLOW=0.1912E+02 BASIN STORAGE=0.2195E-02 PERCENT ERROR= 0.0

RT-B10	MANE	1.79	321.82	744.83	1.66	3.00	320.41	744.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3063E+02 EXCESS=0.0000E+00 OUTFLOW=0.3063E+02 BASIN STORAGE=0.5043E-03 PERCENT ERROR= 0.0

RT-B4	MANE	3.00	32.98	744.00	1.62	3.00	32.98	744.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2972E+01 EXCESS=0.0000E+00 OUTFLOW=0.2973E+01 BASIN STORAGE=0.1759E-02 PERCENT ERROR= -0.1

RT-B15	MANE	3.00	91.11	741.00	1.62	3.00	91.11	741.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8502E+01 EXCESS=0.0000E+00 OUTFLOW=0.8504E+01 BASIN STORAGE=0.1400E-02 PERCENT ERROR= 0.0

RT-B15	MANE	3.00	28.49	741.00	1.23	3.00	28.49	741.00	1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2761E+01 EXCESS=0.0000E+00 OUTFLOW=0.2762E+01 BASIN STORAGE=0.1010E-02 PERCENT ERROR= -0.1

RT- B3	MANE	3.00	65.48	738.00	1.60	3.00	65.48	738.00	1.60

.INUITY SUMMARY (AC-FT) - INFLOW=0.5947E+01 EXCESS=0.0000E+00 OUTFLOW=0.5947E+01 BASIN STORAGE=0.1070E-02 PERCENT ERROR= 0.0

RT-B4	MANE	2.70	261.42	741.59	1.49	3.00	259.01	744.00	1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2554E+02 EXCESS=0.0000E+00 OUTFLOW=0.2554E+02 BASIN STORAGE=0.9375E-03 PERCENT ERROR= 0.0

RT-B1	MANE	2.39	1435.56	752.68	1.68	3.00	1433.53	753.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1869E+03 EXCESS=0.0000E+00 OUTFLOW=0.1869E+03 BASIN STORAGE=0.1405E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	677.76	747.00	2.13	3.00	677.76	747.00	2.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7463E+02 EXCESS=0.0000E+00 OUTFLOW=0.7464E+02 BASIN STORAGE=0.2751E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	957.19	747.00	2.10	3.00	957.19	747.00	2.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1112E+03 EXCESS=0.0000E+00 OUTFLOW=0.1112E+03 BASIN STORAGE=0.3500E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	1207.82	750.00	2.02	3.00	1207.82	750.00	2.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1410E+03 EXCESS=0.0000E+00 OUTFLOW=0.1410E+03 BASIN STORAGE=0.1623E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	258.93	741.00	1.84	3.00	258.93	741.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT-C4	MANE	2.89	1606.72	749.35	1.90	3.00	1598.04	747.00	1.90

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1854E+03 EXCESS=0.0000E+00 OUTFLOW=0.1854E+03 BASIN STORAGE=0.1472E-02 PERCENT ERROR= 0.0

RT-C4	MANE	3.00	71.34	744.00	1.21	3.00	71.34	744.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7403E+01 EXCESS=0.0000E+00 OUTFLOW=0.7405E+01 BASIN STORAGE=0.1403E-02 PERCENT ERROR= 0.0

RT-C3	MANE	2.30	1711.48	750.37	1.80	3.00	1707.95	750.00	1.80

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1984E+03 EXCESS=0.0000E+00 OUTFLOW=0.1984E+03 BASIN STORAGE=0.1366E-02 PERCENT ERROR= 0.0

RT-C1	MANE	2.10	1898.77	751.24	1.72	3.00	1890.10	750.00	1.72

INUITY SUMMARY (AC-FT) - INFLOW=0.2245E+03 EXCESS=0.0000E+00 OUTFLOW=0.2245E+03 BASIN STORAGE=0.1265E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	3375.28	753.00	1.69	3.00	3375.27	753.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4214E+03 EXCESS=0.0000E+00 OUTFLOW=0.4214E+03 BASIN STORAGE=0.2741E-02 PERCENT ERROR= 0.0

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

APPENDIX D - 100-YEAR ANALYSIS

HEC-1 Output
100-Year Proposed (Phase I to V) Condition Analysis
Without Detention

WRC NEVADA, INC

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)     *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
*  RUN DATE  05/06/98  TIME  01:39:08   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ===========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                     |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                |
    4     ID   | DEVELOPED CONDITION WITHOUT DETENTION BASINS
    5     ID   | Washoe County, Nevada                                                   |
    6     ID   |                                                                         |
    7     ID   |  100-Year Analysis                                                      |
    8     ID   |    - For offsite areas                                                  |
    9     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                     |
   10     ID   |    - Rainfall entered using hypothetical storm option                   |
   11     ID   |    - Rainfall data estimated using revised NOAA precipitation data      |
   12     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55  |
   13     ID   |      (SCS, 1986)  or NEH-4 (SCS, 1972)                                  |
   14     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   15     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.      |
   16     ID   |                                                                         |
   17     ID   | File: SOMDV100.DAT                              WRC NEVADA, INC.        |
   18     ID   | APRIL 1998                                      1575 DELUCCHI LN STE.207A|
   19     ID   | Project No.   3011                              Reno, Nevada  89502     |
   20     ID   |                                                (702)332-3737,FAX 332-3740|
   21     ID   ===========================================================================
   22     IT      3       0       0    1441
   23     IO      5       0       0
          *
          *
          * *********   WATERSHED SUBAREA A    *************
          *
          *

   24     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   25     PH       1            0.60    1.09    1.81    2.05    2.23    2.60    3.48    4.35
   26     BA  0.4094
   27     LS       0      73
   28     UD    0.32
          *

   29     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   30     RD    5700    0.14    0.07           TRAP       6       3
          *

   31     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   32     PH       1            0.55    1.00    1.67    1.91    2.10    2.49    3.27    4.06
   33     BA  0.3002
   34     LS       0      79
   35     UD    0.31
          *

   36     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   37     HC       2
          *
```

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

  38      KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
  39      RD     700   0.140    0.07            TRAP       6       3
          *

  40      KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
  41      PH       1            0.55    1.00    1.67    1.88    2.04    2.37    3.18    4.00
  42      BA  0.0583
  43      LS       0      78
  44      UD    0.14
          *

  45      KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
  46      HC       2
          *

  47      KK  RT-A6b ROUTE HDROGRAPH TO OUTLET OF AREA A6b
  48      RD    2400   0.069    0.07            TRAP       6       3
          *

  49      KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
  50      PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
  51      BA  0.0508
  52      LS       0      81
  53      UD    0.15
          *

  54      KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
  55      HC       2
          *

  56      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  57      RD    1100   0.055    0.07            TRAP       6       3
          *

  58      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  59      PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.02    3.77
  60      BA  0.1291
  61      LS       0      87
  62      UD    0.18
          *

  63      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  64      HC       2
          *

  65      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  66      RD    2900   0.055     .07            TRAP       6       3
          *
```

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

  67      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  68      PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.92    3.66
  69      BA  0.1329
  70      LS       0      80
  71      UD    0.19
          *

  72      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  73      PH       1            0.50    0.91    1.52    1.73    1.89    2.21    2.98    3.75
  74      BA  0.0405
  75      LS       0      66
  76      UD    0.20
          *

  77      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  78      HC       3
          *

  79      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  80      PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.30    4.11
  81      BA  0.2819
  82      LS       0      79
  83      UD    0.30
          *

  84      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
  85      PH       1            0.60    1.09    1.81    2.04    2.21    2.58    3.46    4.35
  86      BA  0.1563
  87      LS       0      78
  88      UD    0.29
          *

  89      KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9 .
  90      RD    6800   0.165     .08           TRAP       6       3
          *

  91      KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
  92      PH       1            0.57    1.04    1.74    1.97    2.14    2.51    3.32    4.13
  93      BA  0.3636
  94      LS       0      78
  95      UD    0.33
          *

  96      KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
  97      HC       2
          *

  98      KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
  99      HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

100       KK  RT-A8a ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8a
101       RD    1500   0.060     .07           TRAP       6       3
          *

102       KK  SA A8a GENERATE HYDOGRAPH FOR SUB-AREA A8a
103       PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
104       BA  0.0548
105       LS       0      79
106       UD    0.19
          *

107       KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
108       HC       2
          *

109       KK  RT-A8b ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8b
110       RD    3400   0.050     .07           TRAP       6       3
          *

111       KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
112       PH       1            0.56    1.02    1.70    1.91    2.07     2.4    3.21    4.02
113       BA  0.1912
114       LS              79
115       UD    0.28
          *

116       KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
117       PH       1            0.55    1.00    1.67    1.88    2.04    2.37    3.18    4.00
118       BA  0.0564
119       LS       0      78
120       UD    0.22
          *

121       KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
122       HC       2
          *

123       KK  RT-A8b ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8b
124       RD    3300   0.055     .07           TRAP       6       3
          *

125       KK  SA A8b GENERATE HYDOGRAPH FOR SUB-AREA A8b
126       PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
127       BA  0.1428
128       LS       0      76
129       UD    0.21
          *

130       KK  CP A8b COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
131       HC       3
          *
```

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

  132     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  133     PH       1           0.54    0.98    1.63    1.82    1.96    2.26    3.04    3.82
  134     BA  0.1068
  135     LS       0      75
  136     UD    0.33
          *
  137     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A3, A4, A8 AND A11
  138     HC       3
          *
  139     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  140     RD    4400  0.0386     .07           TRAP       6       3
          *
  141     KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
  142     PH       1           0.49    0.89    1.48    1.68    1.83    2.15    2.91    3.66
  143     BA  0.1974
  144     LS       0      77
  145     UD    0.28
          *
  146     KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
  147     HC       2
          *
  148     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
  149     RD    1500    0.07    0.07           TRAP       6       3
          *
  150     KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
  151     RD    2400  0.0125   0.040           TRAP      15       3
          *
  152     KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
  153     PH       1           0.48    0.87    1.45    1.64    1.78    2.08    2.79    3.51
  154     BA  0.1127
  155     LS       0      76
  156     UD    0.33
          *
          *
          * *********   WATERSHED SUBAREA E    **************
          *
          *
  157     KK  SA E6A GENERATE HYDOGRAPH FOR SUB-AREA E6A
  158     PH       1           0.54    0.98    1.63    1.82    1.96    2.26    3.06    3.86
  159     BA   .0348
  160     LS       0      88
  161     UD     .09
          *
```

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

  162     KK  RT-E6B ROUTE HYDROGRAPH TO OUTLET OF E6B
  163     RD     450     .05     .07           TRAP       6       3
          *

  164     KK  SA E6B GENERATE HYDOGRAPH FOR SUB-AREA E6B
  165     PH       1            0.54    0.98    1.63    1.82    1.96    2.26    3.06    3.86
  166     BA   .0106
  167     LS       0      87
  168     UD     .06
          *

  169     KK    C-E6 COMBINE HYDROGRAPHS FOR E6 A AND B
  170     HC       2
          *

  171     KK  RT-E64 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
  172     RD    1900   .0658     .07           TRAP       6       3
          *

  173     KK     E5B GENERATE HYDOGRAPH FOR SUB-AREA E5B
  174     PH       1            0.54    0.98    1.63    1.84    2.00    2.33    3.14    3.95
  175     BA   .0893
  176     LS       0      91
  177     UD     .17
          *

  178     KK  RT-E5B ROUTE HYDROGRAPH TO OUTLET OF E5A
  179     RD     900     .08     .07           TRAP       6       3
          *

  180     KK     E5A GENERATE HYDROGRAPH FOR SUB-AREA E5A
  181     PH       1             .54     .98    1.63    1.82    1.97    2.28    3.04    3.80
  182     BA   .0347
  183     LS       0      92
  184     UD     .10
          *

  185     KK    C-E5 COMBINE HYDROGRAPHS FROM E5 A AND B
  186     HC       2
          *

  187     KK  RT-E54 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  188     RD    2500    .036     .07           TRAP       6       3
          *

  189     KK   C-E56 COMBINE HYDROGRAPHS FROM E5 and E6
  190     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  191     KK   RT-E4 ROUTE HYDROGRAPH TO OUTLET OF E4
  192     RD    4500    .031     .07           TRAP      6       3
          *

  193     KK  SA  E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
  194     PH       1            0.51    0.93    1.56    1.75    1.89    2.19    2.98    3.77
  195     BA  0.4466
  196     LS       0      80
  197     UD    0.34
          *

  198     KK  CP  E4 COMBINE HYDROGRAPH  E4 W/HYDROGRAPH E5 AND E6
  199     HC       2
          *

  200     KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
  201     RD    3500  0.0429     .07           TRAP      6       3
          *

  202     KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
  203     PH       1            0.50    0.91    1.52    1.69    1.81    2.08    2.83    3.57
  204     BA  0.1191
  205     LS       0      75
  206     UD    0.27
          *

  207     KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
  208     HC       2
          *

  209     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  210     RD     500  0.0125     .04           TRAP      15      3
          *

  211     KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
  212     PH       1            0.50    0.91    1.52    1.71    1.85    2.15    2.92    3.69
  213     BA  0.1597
  214     LS       0      62
  215     UD    0.38
          *

  216     KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
  217     RD    3200  0.0375     .07           TRAP      6       3
          *

  218     KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
  219     PH       1            0.49    0.89    1.48    1.66    1.80    2.08    2.80    3.53
  220     BA  0.1156
  221     LS       0      76
  222     UD    0.31
          *
```

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

  223     KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
  224     HC       2
          *

  225     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  226     RD    1200  0.0125     .04           TRAP      15       3
          *

  227     KK    I-80
  228     KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
  229     HC       4
          *
          * *********   WATERSHED SUBAREA B    **************
          *
          *
          *

  230     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
  231     PH       1            0.59    1.06    1.77    2.02    2.21    2.60    3.41    4.22
  232     BA  0.4136
  233     LS       0      74
  234     UD    0.32
          *

  235     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
  236     RD    3900  0.0133     .07           TRAP       6       3
          *

  237     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  238     PH       1            0.59    1.06    1.77    2.01     2.2    2.58    3.44    4.31
  239     BA  0.2400
  240     LS       0      70
  241     UD    0.33
          *

  242     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  243     RD    4500  0.1510     .08           TRAP       6       3
          *

  244     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  245     PH       1            0.54    0.98    1.63    1.87    2.06    2.44    3.22    4.00
  246     BA  0.3484
  247     LS       0      75
  248     UD    0.26
          *

  249     KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  250     HC       3
          *
```

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

  251     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  252     RD    2000  0.1000     .07           TRAP       6       3
          *

  253     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  254     PH       1            0.51    0.93    1.56    1.75    1.90    2.21    2.95    3.69
  255     BA  0.0777
  256     LS       0      76
  257     UD    0.24
          *

  258     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  259     HC       2
          *

  260     KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  261     RD    3100  0.0710     .07           TRAP       6       3
          *

  262     KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  263     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  264     BA  0.1056
  265     LS       0      84
  266     UD    0.24
          *

  267     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  268     HC       2
          *

  269     KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  270     PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  271     BA  0.2445
  272     LS       0      76
  273     UD    0.23
          *

  274     KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  275     RD    1100  0.0770     .07           TRAP       6       3
          *

  276     KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  277     PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  278     BA  0.0382
  279     LS       0      84
  280     UD    0.16
          *

  281     KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  282     PH       1            0.50    0.91    1.52    1.72    1.87    2.19    2.93    3.66
  283     BA  0.0591
  284     LS       0      79
  285     UD    0.26
          *
```

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

  286     KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  287     HC       3
          *

  288     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  289     RD    2200  0.0680     .07            TRAP       6       3
          *

  290     KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  291     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  292     BA  0.0240
  293     LS       0      78
  294     UD    0.21
          *

  295     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  296     HC       3
          *

  297     KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  298     RD     500  0.0500     .07            TRAP       6       3
          *

  299     KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  300     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  301     BA  0.0360
  302     LS       0      87
  303     UD    0.10
          *

  304     KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
  305     HC       2
          *

  306     KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
  307     RD     800  0.0563     .07            TRAP       6       3
          *

  308     KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
  309     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  310     BA  0.0126
  311     LS       0      87
  312     UD    0.10
          *

  313     KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
  314     HC       2
          *
```

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

315       KK  SAB14b GENERATE HYDOGRAPH FOR SUB-AREA B14b
316       PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
317       BA  0.0387
318       LS       0      78
319       UD    0.22
          *

320       KK  RT-B16 ROUTE HYDROGRAPH FROM B14 TO OUTLET OF B16
321       RD    2000  0.0500    .035           TRAP       6       3
          *

322       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
323       PH       1            0.49    0.89    1.48    1.70    1.86    2.19    2.92    3.64
324       BA    .094
325       LS       0      86
326       UD    0.24
          *

327       KK  CP B16 COMBINE HYDROGRAPH FROM AREAS B16 W/HYDROGRAPHS FROM AREA B14
328       HC       2
          *

329       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
330       RD     400  0.0533     .05           TRAP       6       3
          *

331       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
332       PH       1            0.48    0.87    1.45    1.66    1.82    2.15    2.87    3.60
333       BA    .046
334       LS       0      84
335       UD    0.17
          *

336       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
337       HC       2
          *

338       KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
339       PH       1            0.49    0.89    1.48     1.7    1.87    2.21    2.94    3.66
340       BA    .029
341       LS       0      78
342       UD     .20
          *

343       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
344       RD    1775     .05    .062           TRAP       5       2
          *

345       KK  SAB14a GENERATE HYDOGRAPH FOR SUB-AREA B14a
346       PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
347       BA  0.0490
348       LS       0      78
349       UD    0.22
          *
```

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

350       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B14a TO OUTLET OF AREA B5
351       RD    2325   .0538     .07           TRAP       5       2
          *

352       KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
353       PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
354       BA    .078
355       LS       0      80
356       UD    0.23
          *

357       KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
358       HC       4
          *

359       KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
360       RD     700  0.0500     .06           TRAP       6       3
          *

361       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
362       RD     900  0.0390     .07           TRAP       6       3
          *

363       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
364       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
365       BA  0.0360
366       LS       0      85
367       UD    0.14
          *

368       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
369       HC       2
          *

370       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
371       RD     950  0.0260     .07           TRAP       6       3
          *

372       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
373       PH       1            0.50    0.91    1.52    1.73    1.89    2.21    2.98    3.75
374       BA  0.0523
375       LS       0      86
376       UD    0.12
          *

377       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
378       RD    1800  0.0890     .07           TRAP       6       3
          *
```

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

379       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
380       PH       1            0.48    0.87    1.45    1.64    1.79    2.10    2.82    3.53
381       BA  0.1255
382       LS       0      86
383       UD    0.15
          *

384       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
385       HC       2
          *

386       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
387       RD    2100  0.0430     .07           TRAP       6       3
          *

388       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
389       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
390       BA  0.0592
391       LS       0      84
392       UD    0.19
          *

393       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
394       HC       3
          *

395       KK  CP810b COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
396       HC       2
          *

397       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
398       RD    1400  0.0286     .07           TRAP       6       3
          *

399       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
400       PH       1            0.45    0.83    1.38    1.57    1.72    2.03    2.73    3.42
401       BA  0.0527
402       LS       0      83
403       UD    0.15
          *

404       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
405       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    **************
          *
          *
          *
```

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

406       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
407       PH       1            0.62    1.13    1.88    2.12    2.29    2.67    3.53    4.40
408       BA  0.6580
409       LS       0      77
410       UD    0.33
          *

411       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
412       RD    4800  0.1583     .07           TRAP       6       3
          *

413       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
414       PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.24    4.00
415       BA  0.3156
416       LS       0      80
417       UD    0.19
          *

418       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
419       HC       2
          *

420       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
421       RD    5500  0.1091     .07           TRAP       6       3
          *

422       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
423       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    2.96    3.66
424       BA  0.3359
425       LS       0      80
426       UD    0.26
          *

427       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
428       HC       2
          *

429       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
430       RD    3000  0.0933     .07           TRAP       6       3
          *

431       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
432       PH       1            0.49    0.89    1.48    1.66    1.80    2.08    2.77    3.46
433       BA  0.1528
434       LS       0      78
435       UD    0.27
          *

436       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
437       HC       2
          *
```

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

438       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
439       PH       1            0.53    0.96    1.59    1.80    1.96    2.28    3.02    3.75
440       BA  0.2380
441       LS       0      80
442       UD    0.23
          *

443       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
444       RD    3200  0.0750     .07           TRAP       6       3
          *

445       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
446       PH       1            0.49    0.89    1.48    1.68    1.83    2.15    2.85    3.55
447       BA  0.0956
448       LS       0      77
449       UD    0.25
          *

450       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
451       HC       2
          *

452       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
453       HC       2
          *

454       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
455       RD    1100   0.055     .07           TRAP       6       3
          *

456       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
457       PH       1            0.47    0.85    1.41    1.59    1.73    2.01    2.69    3.37
458       BA  0.1147
459       LS       0      75
460       UD    0.27
          *

461       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
462       HC       2
          *

463       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
464       RD    1200  0.0580     .07           TRAP       6       3
          *

465       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
466       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
467       BA  0.0930
468       LS       0      79
469       UD    0.20
          *
```

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

470       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
471       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
472       BA  0.0384
473       LS       0      77
474       UD    0.18
          *

475       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
476       HC       3
          *

477       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
478       RD    1200     .04     .07           TRAP       6       3
          *

479       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
480       PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
481       BA     .12
482       LS       0      76
483       UD     .27
          *

484       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
485       HC       2
          *

486       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
487       RD     950     .05     .07           TRAP       6       3
          *

488       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
489       PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
490       BA      .1
491       LS       0      78
492       UD     .30
          *

493       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
494       HC       2
          *

495       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
496       PH       1            0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
497       BA  0.1705
498       LS       0      78
499       UD    0.25
          *

500       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
501       HC       2
          *
```

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

  502     KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
  503     RD    1500  0.0400     .07           TRAP      6       3
          *

  504     KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
  505     PH       1            0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
  506     BA  0.0809
  507     LS       0      79
  508     UD    0.24
          *

  509     KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
  510     HC       2
          *

  511     KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
  512     HC       2
          *

  513     KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
  514     RD    3200  0.0500     .07           TRAP      6       2
          *

  515     KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
  516     PH       1            0.45    0.83    1.38    1.56    1.70    1.99    2.69    3.40
  517     BA  0.2191
  518     LS       0      78
  519     UD    0.24
          *

  520     KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  521     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  522     HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    **************
          *
          *

  523     KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
  524     PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
  525     BA   .0726
  526     LS       0      82
  527     UD     .13
          *

  528     KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
  529     RD    2700     .11     .07           TRAP      10      4
          *
```

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

  530     KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
  531     PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
  532     BA     .11
  533     LS       0      79
  534     UD     .20
          *

  535     KK      F1 Combine Hydrographs at F1
  536     HC       2
          *

  537     KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
  538     PH       1            0.48    0.87    1.45    1.64    1.78    2.08    2.80    3.53
  539     BA  0.1352
  540     LS       0      79
  541     UD    0.25
          *

  542     KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  543     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  544     HC       2
  545     ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
UT
E     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

24    SA A14
          V
          V
29     RT-A7
          .
          .
31        .      SA  A7
          .           .
          .           .
36    CP  A7.............
          V
          V
38    RT-A6a
          .
          .
40        .      SA A6a
          .           .
          .           .
45    CP A6a.............
          V
          V
      RT-A6b
          .
          .
49        .      SA A6b
          .           .
          .           .
54    CP A6b.............
          V
          V
56     RT-A5
          .
          .
58        .      SA  A5
          .           .
          .           .
63    CP  A5.............
          V
          V
65     RT-A4
          .
          .
67        .      SA  A3
          .           .
          .           .
72        .           .      SA  A4
          .           .           .
          .           .           .
77    CP  A4.........................
          .
          .
79        .      SA A10
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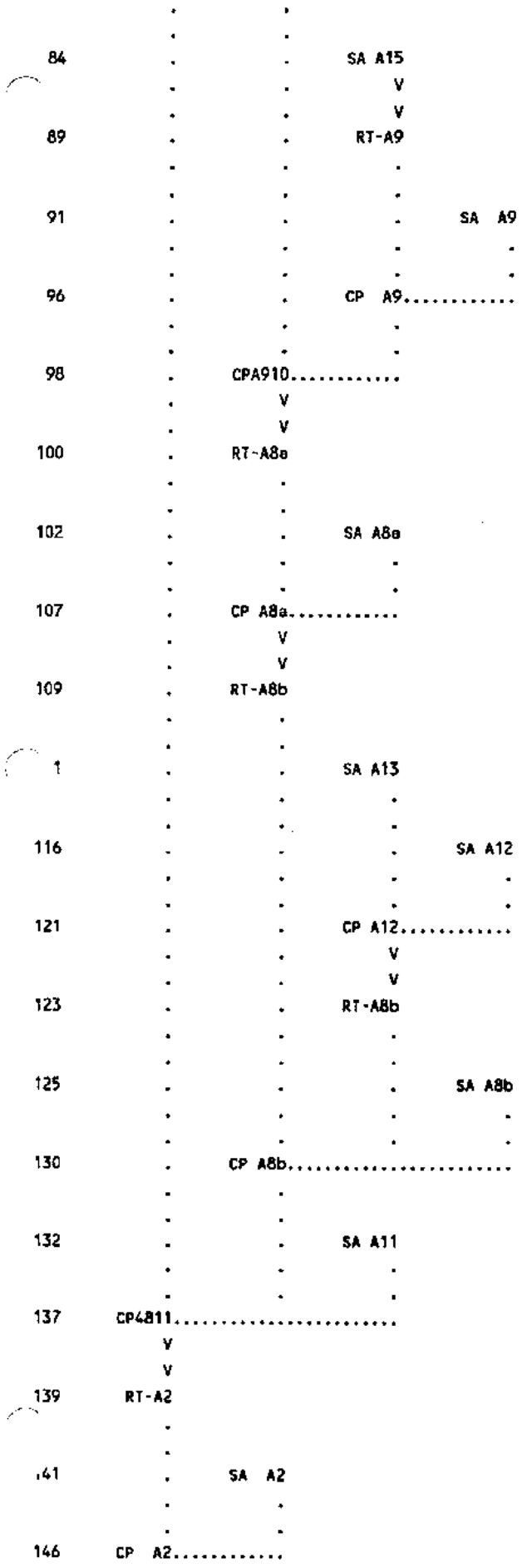
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SA A15
89
RT-A9
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SA A9
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CP A9
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CPA910
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RT-A8a
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CP A8a
109
RT-A8b
1
SA A13
116
SA A12
121
CP A12
123
RT-A8b
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SA A11
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139
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SA A2
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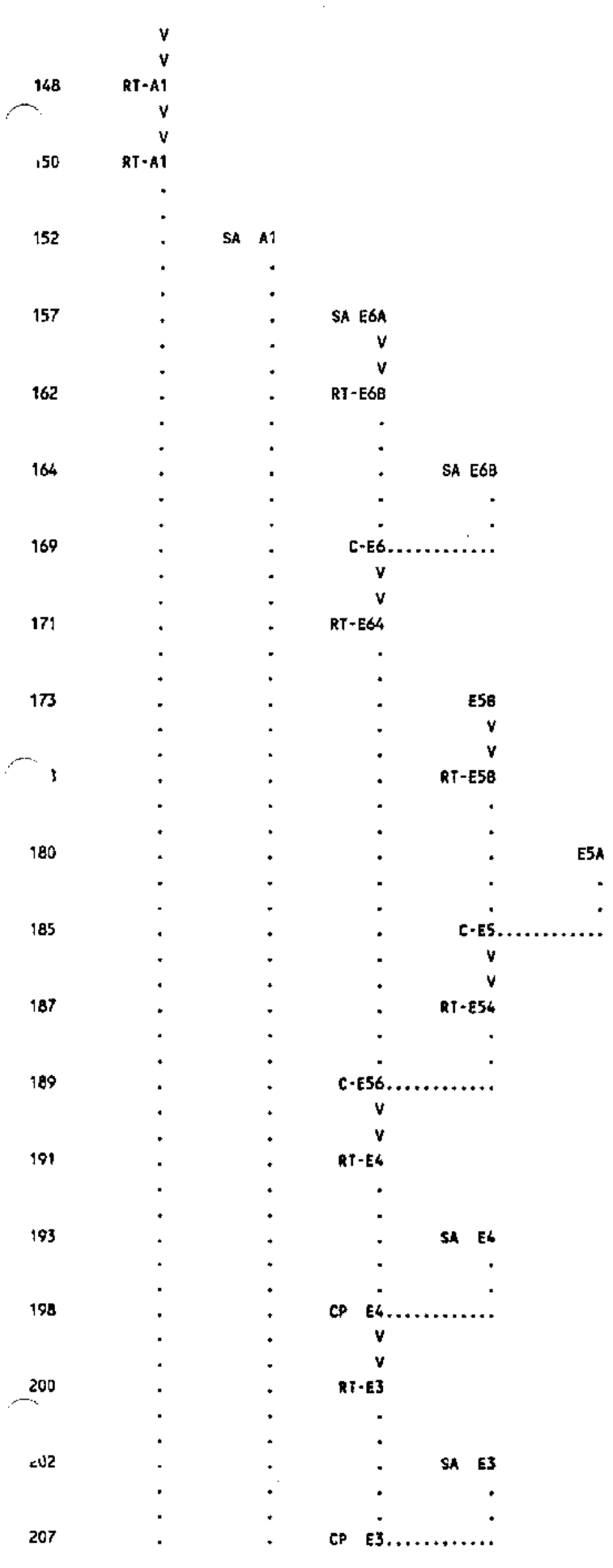
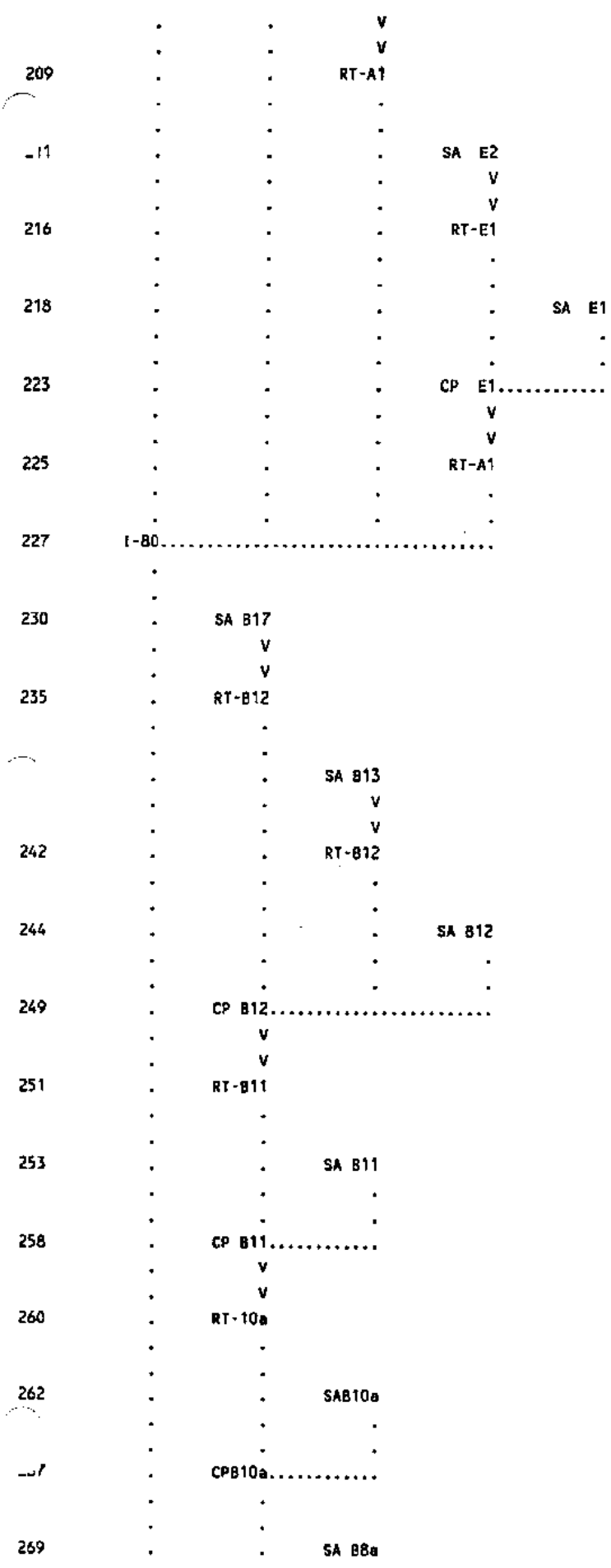
CP A2


148
RT-A1
150
RT-A1
152
SA A1
157
SA E6A
162
RT-E6B
164
SA E6B
169
C-E6
171
RT-E64
173
E5B
RT-E5B
180
E5A
185
C-E5
187
RT-E54
189
C-E56
191
RT-E4
193
SA E4
198
CP E4
200
RT-E3
202
SA E3
207
CP E3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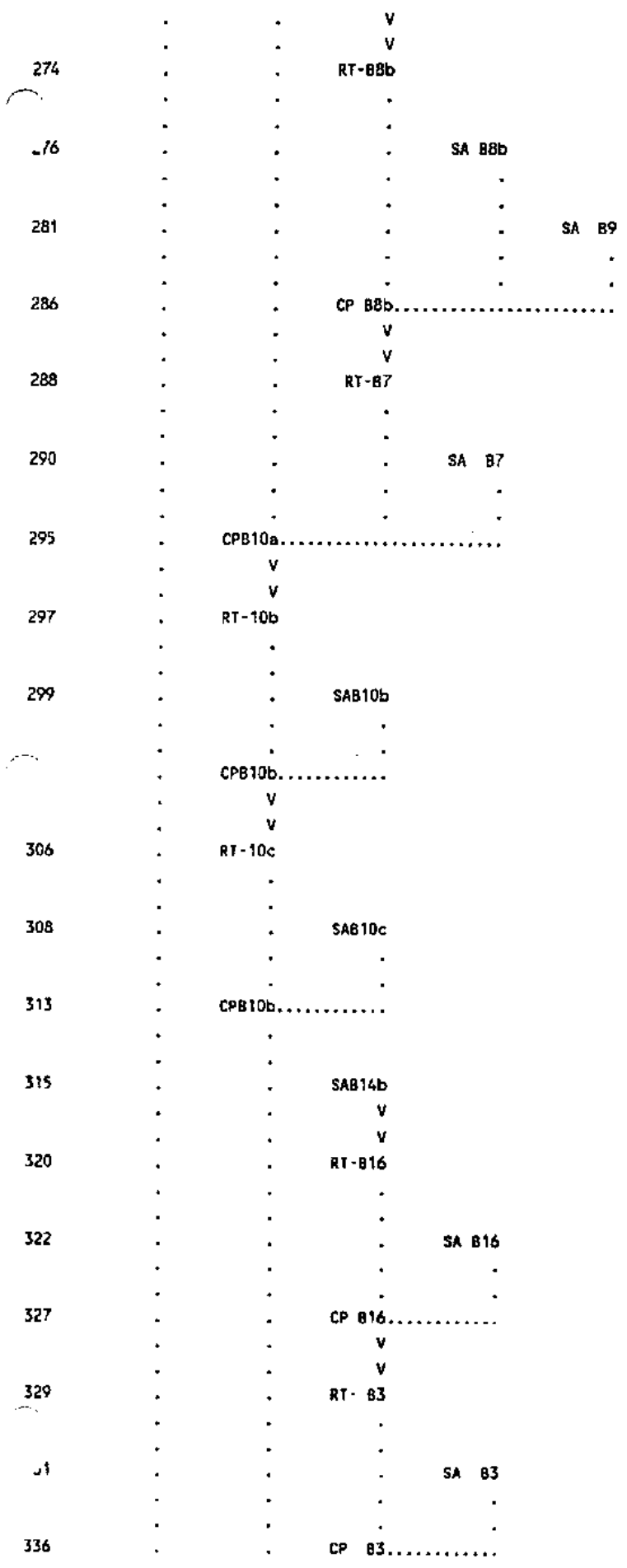
RT-A1
SA E2
216
RT-E1
218
SA E1
223
CP E1
225
RT-A1
227
I-80
230
SA B17
235
RT-B12
SA B13
242
RT-B12
244
SA B12
249
CP B12
251
RT-B11
253
SA B11
258
CP B11
260
RT-10a
262
SAB10a
CPB10a
269
SA B8a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RT-B8b
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SA B8b
281
SA B9
286
CP B8b
288
RT-B7
290
SA B7
295
CPB10a
297
RT-10b
299
SAB10b
CPB10b
306
RT-10c
308
SAB10c
313
CPB10b
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SAB14b
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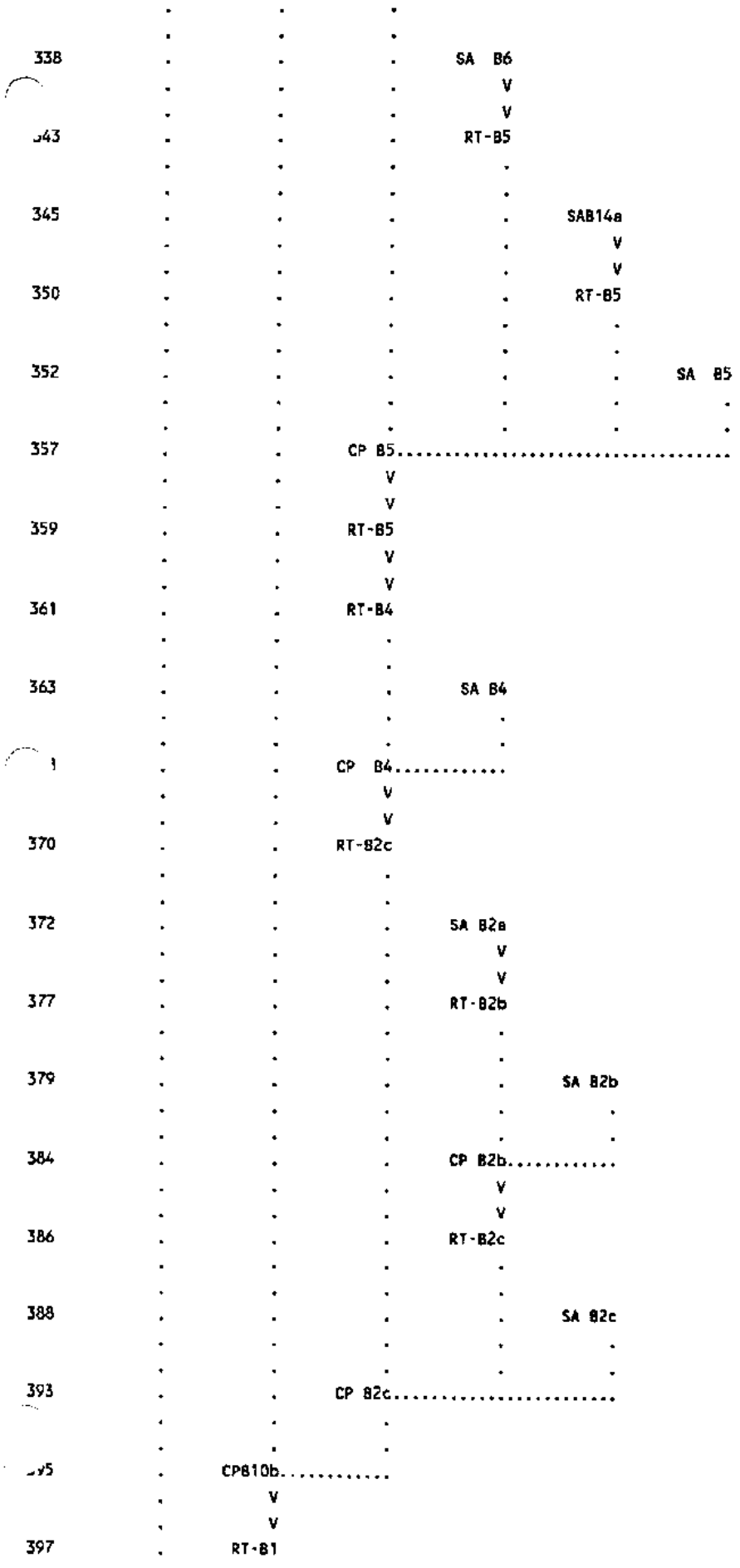
RT-B16
322
SA B16
327
CP B16
329
RT- B3
SA B3
336
CP B3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343
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352
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359
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363
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372
377
379
384
386
388
393
397
SA B6
RT-B5
SAB14a
RT-B5
SA B5
CP B5
RT-B5
RT-B4
SA B4
CP B4
RT-B2c
SA B2a
RT-B2b
SA B2b
CP B2b
RT-B2c
SA B2c
CP B2c
CPB10b
RT-B1

```
399                SA  B1
                     .
                     .
404           CP  B1.....
                     .
                     .
406                SA C10
                     V
                     V
411                RT-C11
                     .
                     .
413                     .       SA C11
                        .          .
                        .          .
418                CP C11.....
                     V
                     V
420                 RT-C7
                     .
                     .
422                     .       SA  C7
                        .          .
                        .          .
427                CP  C7.....
                     V
                     V
                    RT-C5
                     .
                     .
431                     .       SA  C5
                        .          .
                        .          .
436                CP  C5.....
                     .
                     .
438                     .       SA  C8
                        .          V
                        .          V
443                     .        RT-C6
                        .          .
                        .          .
445                     .          .       SA  C6
                        .          .          .
                        .          .          .
450                     .       CP  C6.....
                        .          .
                        .          .
452                CP  C5.....
                     V
                     V
454                RT- C9
                     .
                     .
456                     .       SA  C9
                        .          .
                        .          .
461                CP  C9.....
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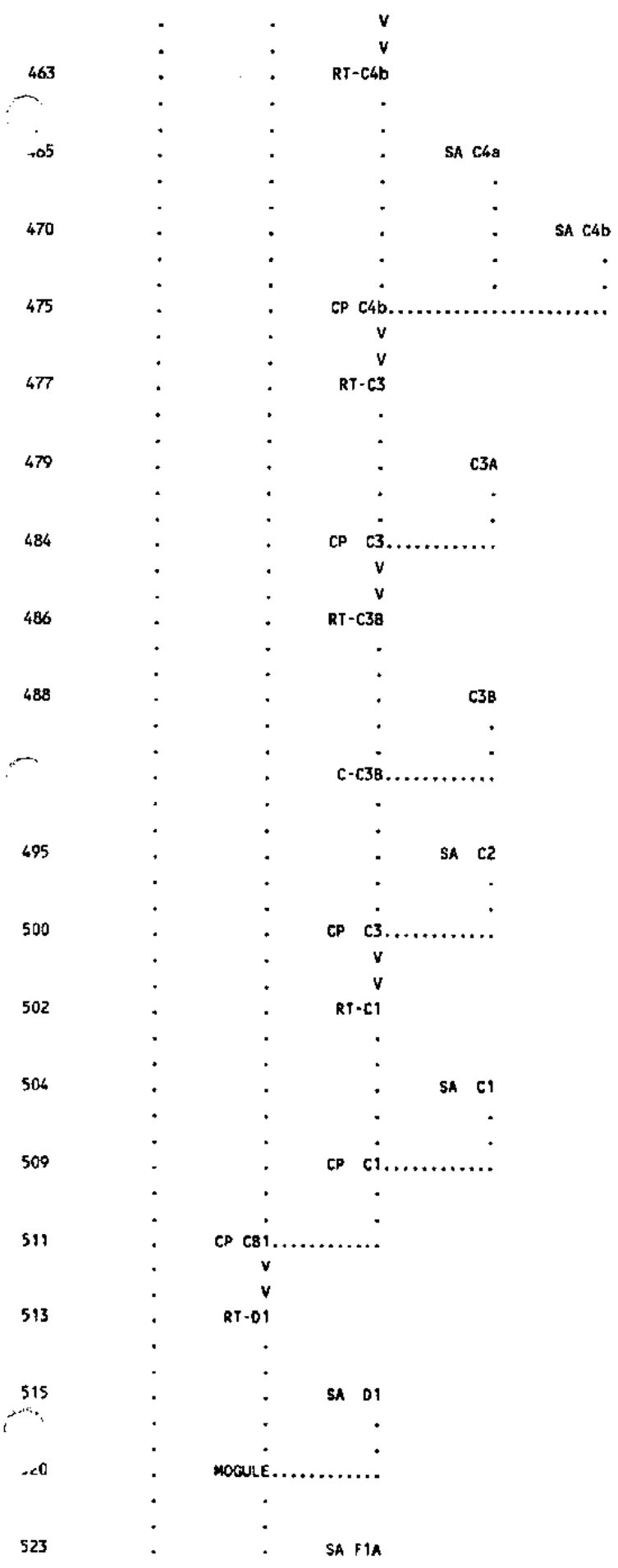
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SA C4a
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SA C4b
475
CP C4b
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RT-C3
479
C3A
484
CP C3
486
RT-C3B
488
C3B
C-C3B
495
SA C2
500
CP C3
502
RT-C1
504
SA C1
509
CP C1
511
CP C81
513
RT-D1
515
SA D1
MODULE
523
SA F1A

```
                .         .         V
                .         .         V
  528           .         .      RT-F1B
                .         .         .
                .         .         .
  530           .         .         .      SA F1B
                .         .         .         .
                .         .         .         .
  535           .         .      F1.............
                .         .         .
                .         .         .
  537           .         .         .      SA  F2
                .         .         .         .
                .         .         .         .
  542           .         .      MOGULW.............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*               MAY  1991               *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  01:39:08   *
*                                       *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
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| SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
| DEVELOPED CONDITION WITHOUT DETENTION BASINS                           |
| Washoe County, Nevada                                                  |
|                                                                        |
|  100-Year Analysis                                                     |
|    - For offsite areas                                                 |
|    - Watersheds measured from USGS 7.5 Minute Quads                    |
|    - Rainfall entered using hypothetical storm option                  |
|    - Rainfall data estimated using revised NOAA precipitation data     |
|    - Curve number estimates based on Sage-Grass, as described in TR-55 |
|      (SCS, 1986)  or NEH-4 (SCS, 1972)                                 |
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n) |
|      as modified for the Washoe County Hydrologic Criteria Manual.     |
|                                                                        |
| File: SOMDV100.DAT                          WRC NEVADA, INC.           |
| APRIL 1998                                  1575 DELUCCHI LN STE.207A  |
| Project No.  3011                           Reno, Nevada  89502        |
|                                            (702)332-3737,FAX 332-3740  |
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23 10        OUTPUT CONTROL VARIABLES
                 IPRNT          5  PRINT CONTROL
                 IPLOT          0  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

   1T        HYDROGRAPH TIME DATA
                 NMIN           3  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1   0  STARTING DATE
                 ITIME       0000  STARTING TIME
                    NQ       1441  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE     4   0  ENDING DATE
                 NDTIME      0000  ENDING TIME
                 ICENT         19  CENTURY MARK

           COMPUTATION INTERVAL    0.05 HOURS
               TOTAL TIME BASE   72.00 HOURS

     ENGLISH UNITS
          DRAINAGE AREA         SQUARE MILES
          PRECIPITATION DEPTH   INCHES
          LENGTH, ELEVATION     FEET
          FLOW                  CUBIC FEET PER SECOND
          STORAGE VOLUME        ACRE-FEET
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SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	343.	12.40	59.	20.	7.	0.41		
ROUTED TO	RT-A7	345.	12.50	59.	20.	7.	0.41		
HYDROGRAPH AT	SA A7	293.	12.35	49.	16.	5.	0.30		
2 COMBINED AT	CP A7	612.	12.45	108.	36.	12.	0.71		
ROUTED TO	RT-A6a	610.	12.45	108.	36.	12.	0.71		
HYDROGRAPH AT	SA A6a	79.	12.15	9.	3.	1.	0.06		
2 COMBINED AT	CP A6a	639.	12.45	117.	39.	13.	0.77		
ROUTED TO	RT-A6b	641.	12.50	117.	39.	13.	0.77		
HYDROGRAPH AT	SA A6b	72.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP A6b	664.	12.50	125.	42.	14.	0.82		
ROUTED TO	RT-A5	660.	12.50	125.	42.	14.	0.82		
HYDROGRAPH AT	SA A5	198.	12.20	24.	8.	3.	0.13		
2 COMBINED AT	CP A5	739.	12.50	149.	50.	17.	0.95		
ROUTED TO	RT-A4	741.	12.55	149.	50.	17.	0.95		
HYDROGRAPH AT	SA A3	144.	12.25	19.	6.	2.	0.13		
HYDROGRAPH AT	SA A4	20.	12.25	3.	1.	0.	0.04		
3 COMBINED AT	CP A4	806.	12.55	170.	57.	19.	1.12		
HYDROGRAPH AT	SA A10	294.	12.35	47.	16.	5.	0.28		
HYDROGRAPH AT	SA A15	173.	12.35	27.	9.	3.	0.16		
ROUTED TO	RT-A9	174.	12.50	27.	9.	3.	0.16		
HYDROGRAPH AT	SA A9	344.	12.40	59.	19.	6.	0.36		
2 COMBINED AT	CP A9	500.	12.45	86.	29.	10.	0.52		
2 COMBINED AT	CPA910	777.	12.40	133.	44.	15.	0.80		
ROUTED TO	RT-A8a	772.	12.45	133.	44.	15.	0.80		
HYDROGRAPH AT	SA A8a	64.	12.25	8.	3.	1.	0.05		
2 COMBINED AT	CP A8a	807.	12.45	141.	47.	16.	0.86		

ROUTED TO	RT-A8b	805.	12.50	141.	47.	16.	0.86
HYDROGRAPH AT	SA A13	198.	12.35	31.	10.	3.	0.19
HYDROGRAPH AT	SA A12	63.	12.25	9.	3.	1.	0.06
2 COMBINED AT	CP A12	260.	12.30	39.	13.	4.	0.25
ROUTED TO	RT-A8b	260.	12.40	39.	13.	4.	0.25
HYDROGRAPH AT	SA A8b	139.	12.25	19.	6.	2.	0.14
3 COMBINED AT	CP A8b	1116.	12.50	199.	66.	22.	1.25
HYDROGRAPH AT	SA A11	78.	12.40	13.	4.	1.	0.11
3 COMBINED AT	CP4811	1987.	12.50	382.	128.	43.	2.47
ROUTED TO	RT-A2	1979.	12.60	382.	128.	43.	2.47
HYDROGRAPH AT	SA A2	152.	12.35	25.	8.	3.	0.20
2 COMBINED AT	CP A2	2068.	12.55	406.	136.	45.	2.67
ROUTED TO	RT-A1	2066.	12.60	406.	136.	45.	2.67
ROUTED TO	RT-A1	2062.	12.65	406.	136.	45.	2.67
HYDROGRAPH AT	SA A1	71.	12.40	12.	4.	1.	0.11
HYDROGRAPH AT	SA E6A	79.	12.10	7.	2.	1.	0.03
ROUTED TO	RT-E6B	77.	12.15	7.	2.	1.	0.03
HYDROGRAPH AT	SA E6B	26.	12.10	2.	1.	0.	0.01
2 COMBINED AT	C-E6	98.	12.10	9.	3.	1.	0.05
ROUTED TO	RT-E64	102.	12.20	9.	3.	1.	0.05
HYDROGRAPH AT	E5B	174.	12.20	20.	7.	2.	0.09
ROUTED TO	RT-E5B	169.	12.20	20.	7.	2.	0.09
HYDROGRAPH AT	E5A	84.	12.10	8.	3.	1.	0.03
2 COMBINED AT	C-E5	235.	12.20	28.	10.	3.	0.12
ROUTED TO	RT-E54	235.	12.25	28.	10.	3.	0.12
2 COMBINED AT	C-E56	323.	12.25	37.	13.	4.	0.17
ROUTED TO	RT-E4	332.	12.40	37.	13.	4.	0.17
HYDROGRAPH AT	SA E4	381.	12.40	66.	22.	7.	0.45
2 COMBINED AT	CP E4	713.	12.40	102.	35.	12.	0.62
ROUTED TO	RT-E3	719.	12.50	102.	35.	12.	0.62

HYDROGRAPH AT	SA E3	84.	12.30	13.	4.	1.	0.12
2 COMBINED AT	CP E3	782.	12.50	115.	40.	13.	0.74
ROUTED TO	RT-A1	760.	12.50	115.	40.	13.	0.74
HYDROGRAPH AT	SA E2	38.	12.50	9.	3.	1.	0.16
ROUTED TO	RT-E1	38.	12.70	9.	3.	1.	0.16
HYDROGRAPH AT	SA E1	77.	12.35	13.	4.	1.	0.12
2 COMBINED AT	CP E1	93.	12.50	21.	7.	2.	0.28
ROUTED TO	RT-A1	93.	12.60	21.	7.	2.	0.28
4 COMBINED AT	I-80	2900.	12.55	555.	187.	62.	3.80
HYDROGRAPH AT	SA B17	345.	12.40	60.	20.	7.	0.41
ROUTED TO	RT-B12	344.	12.55	60.	20.	7.	0.41
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24
ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24
HYDROGRAPH AT	SA B12	303.	12.30	47.	16.	5.	0.35
3 COMBINED AT	CP B12	710.	12.50	137.	45.	15.	1.00
ROUTED TO	RT-B11	707.	12.55	137.	45.	15.	1.00
HYDROGRAPH AT	SA B11	66.	12.30	10.	3.	1.	0.08
2 COMBINED AT	CP B11	745.	12.50	146.	48.	16.	1.08
ROUTED TO	RT-10a	748.	12.60	146.	48.	16.	1.08
HYDROGRAPH AT	SAB10a	112.	12.30	16.	5.	2.	0.11
2 COMBINED AT	CPB10a	798.	12.55	162.	54.	18.	1.19
HYDROGRAPH AT	SA B8a	219.	12.30	31.	10.	3.	0.24
ROUTED TO	RT-B8b	218.	12.30	31.	10.	3.	0.24
HYDROGRAPH AT	SA B8b	59.	12.20	7.	2.	1.	0.04
HYDROGRAPH AT	SA B9	54.	12.30	8.	3.	1.	0.06
3 COMBINED AT	CP B8b	317.	12.30	46.	15.	5.	0.34
ROUTED TO	RT-B7	319.	12.35	46.	15.	5.	0.34
HYDROGRAPH AT	SA B7	21.	12.25	3.	1.	0.	0.02
3 COMBINED AT	CPB10a	1022.	12.55	210.	70.	23.	1.55
ROUTED TO	RT-10b	1021.	12.55	210.	70.	23.	1.55

HYDROGRAPH AT	SAB10b	63.	12.10	6.	2.	1.	0.04
2 COMBINED AT	CPB10b	1032.	12.55	216.	72.	24.	1.59
ROUTED TO	RT-10c	1029.	12.55	216.	72.	24.	1.59
HYDROGRAPH AT	SAB10c	22.	12.10	2.	1.	0.	0.01
2 COMBINED AT	CPB10b	1033.	12.55	218.	73.	24.	1.60
HYDROGRAPH AT	SAB14b	37.	12.25	5.	2.	1.	0.04
ROUTED TO	RT-B16	37.	12.30	5.	2.	1.	0.04
HYDROGRAPH AT	SA B16	115.	12.30	16.	6.	2.	0.09
2 COMBINED AT	CP B16	152.	12.30	22.	7.	2.	0.13
ROUTED TO	RT- B3	152.	12.30	22.	7.	2.	0.13
HYDROGRAPH AT	SA B3	61.	12.20	7.	3.	1.	0.05
2 COMBINED AT	CP B3	202.	12.25	29.	10.	3.	0.18
HYDROGRAPH AT	SA B6	28.	12.25	4.	1.	0.	0.03
ROUTED TO	RT-B5	28.	12.35	4.	1.	0.	0.03
HYDROGRAPH AT	SAB14a	47.	12.25	7.	2.	1.	0.05
ROUTED TO	RT-B5	47.	12.35	7.	2.	1.	0.05
HYDROGRAPH AT	SA B5	75.	12.25	11.	4.	1.	0.08
4 COMBINED AT	CP B5	348.	12.30	50.	17.	6.	0.33
ROUTED TO	RT-B5	343.	12.30	50.	17.	6.	0.33
ROUTED TO	RT-B4	342.	12.35	50.	17.	6.	0.33
HYDROGRAPH AT	SA B4	51.	12.15	6.	2.	1.	0.04
2 COMBINED AT	CP B4	369.	12.35	56.	19.	6.	0.37
ROUTED TO	RT-B2c	364.	12.35	56.	19.	6.	0.37
HYDROGRAPH AT	SA B2a	93.	12.15	9.	3.	1.	0.05
ROUTED TO	RT-B2b	94.	12.20	9.	3.	1.	0.05
HYDROGRAPH AT	SA B2b	186.	12.20	21.	7.	2.	0.13
2 COMBINED AT	CP B2b	280.	12.20	30.	10.	3.	0.18
ROUTED TO	RT-B2c	279.	12.25	30.	10.	3.	0.18
HYDROGRAPH AT	SA B2c	70.	12.20	9.	3.	1.	0.06
3 COMBINED AT	CP B2c	672.	12.30	95.	32.	11.	0.61

2 COMBINED AT	CPB10b	1518.	12.40	313.	105.	35.	2.21
ROUTED TO	RT-B1	1514.	12.45	313.	105.	35.	2.21
HYDROGRAPH AT	SA B1	65.	12.20	8.	3.	1.	0.05
2 COMBINED AT	CP B1	1539.	12.45	320.	108.	36.	2.26
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66
ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66
HYDROGRAPH AT	SA C11	423.	12.25	53.	17.	6.	0.32
2 COMBINED AT	CP C11	934.	12.40	166.	55.	18.	0.97
ROUTED TO	RT-C7	937.	12.45	166.	55.	18.	0.97
HYDROGRAPH AT	SA C7	335.	12.30	49.	16.	5.	0.34
2 COMBINED AT	CP C7	1202.	12.45	215.	71.	24.	1.31
ROUTED TO	RT-C5	1202.	12.50	215.	71.	24.	1.31
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15
2 COMBINED AT	CP C5	1301.	12.45	233.	77.	26.	1.46
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24
HYDROGRAPH AT	SA C6	77.	12.30	11.	4.	1.	0.10
2 COMBINED AT	CP C6	333.	12.35	47.	16.	5.	0.33
2 COMBINED AT	CP C5	1590.	12.45	280.	92.	31.	1.80
ROUTED TO	RT- C9	1590.	12.45	280.	92.	31.	1.80
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11
2 COMBINED AT	CP C9	1650.	12.45	292.	96.	32.	1.91
ROUTED TO	RT-C4b	1637.	12.45	292.	96.	32.	1.91
HYDROGRAPH AT	SA C4a	85.	12.25	11.	4.	1.	0.09
HYDROGRAPH AT	SA C4b	33.	12.20	4.	1.	0.	0.04
3 COMBINED AT	CP C4b	1704.	12.45	307.	101.	34.	2.04
ROUTED TO	RT-C3	1696.	12.50	307.	101.	34.	2.04
HYDROGRAPH AT	C3A	74.	12.35	12.	4.	1.	0.12
2 COMBINED AT	CP C3	1752.	12.50	319.	105.	35.	2.16
ROUTED TO	RT-C3B	1745.	12.50	319.	105.	35.	2.16

HYDROGRAPH AT	C3B	66.	12.35	11.	4.	1.	0.10
2 COMBINED AT	C-C3B	1799.	12.50	329.	109.	36.	2.26
HYDROGRAPH AT	SA C2	118.	12.30	17.	6.	2.	0.17
2 COMBINED AT	CP C3	1879.	12.50	346.	115.	38.	2.43
ROUTED TO	RT-C1	1862.	12.55	346.	115.	38.	2.43
HYDROGRAPH AT	SA C1	62.	12.30	9.	3.	1.	0.08
2 COMBINED AT	CP C1	1897.	12.50	356.	118.	39.	2.51
2 COMBINED AT	CP CB1	3412.	12.50	675.	225.	75.	4.77
ROUTED TO	RT-D1	3412.	12.55	675.	225.	75.	4.77
HYDROGRAPH AT	SA D1	169.	12.30	25.	8.	3.	0.22
2 COMBINED AT	MOGULE	3505.	12.55	700.	234.	78.	4.99
HYDROGRAPH AT	SA F1A	94.	12.15	10.	3.	1.	0.07
ROUTED TO	RT-F1B	97.	12.25	10.	3.	1.	0.07
HYDROGRAPH AT	SA F1B	102.	12.25	14.	5.	2.	0.11
2 COMBINED AT	F1	199.	12.25	24.	8.	3.	0.18
HYDROGRAPH AT	SA F2	117.	12.30	17.	6.	2.	0.14
2 COMBINED AT	MOGULW	313.	12.25	41.	14.	5.	0.32

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	345.18	750.00	1.78	3.00	345.18	750.00	1.78
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3890E+02 EXCESS=0.0000E+00 OUTFLOW=0.3891E+02 BASIN STORAGE=0.2877E-02 PERCENT ERROR= 0.0									
RT-A6a	MANE	0.85	611.44	747.45	1.88	3.00	609.91	747.00	1.88
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7110E+02 EXCESS=0.0000E+00 OUTFLOW=0.7110E+02 BASIN STORAGE=0.3138E-03 PERCENT ERROR= 0.0									
RT-A6b	MANE	3.00	640.54	750.00	1.88	3.00	640.54	750.00	1.88
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7698E+02 EXCESS=0.0000E+00 OUTFLOW=0.7699E+02 BASIN STORAGE=0.1761E-02 PERCENT ERROR= 0.0									
RT-A5	MANE	1.84	662.85	751.46	1.89	3.00	659.99	750.00	1.89
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8242E+02 EXCESS=0.0000E+00 OUTFLOW=0.8242E+02 BASIN STORAGE=0.8217E-03 PERCENT ERROR= 0.0									
RT-A4	MANE	3.00	740.66	753.00	1.96	3.00	740.66	753.00	1.96
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9912E+02 EXCESS=0.0000E+00 OUTFLOW=0.9912E+02 BASIN STORAGE=0.2297E-02 PERCENT ERROR= 0.0									
RT-A9	MANE	3.00	174.29	750.00	2.17	3.00	174.29	750.00	2.17
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1808E+02 EXCESS=0.0000E+00 OUTFLOW=0.1809E+02 BASIN STORAGE=0.3192E-02 PERCENT ERROR= -0.1									
RT-A8a	MANE	2.32	775.32	746.09	2.05	3.00	772.31	747.00	2.05
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8751E+02 EXCESS=0.0000E+00 OUTFLOW=0.8752E+02 BASIN STORAGE=0.8725E-03 PERCENT ERROR= 0.0									
RT-A8b	MANE	3.00	805.14	750.00	2.03	3.00	805.14	750.00	2.03
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9292E+02 EXCESS=0.0000E+00 OUTFLOW=0.9293E+02 BASIN STORAGE=0.2236E-02 PERCENT ERROR= 0.0									
RT-A8b	MANE	3.00	260.29	744.00	1.96	3.00	260.29	744.00	1.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2585E+02 EXCESS=0.0000E+00 OUTFLOW=0.2586E+02 BASIN STORAGE=0.2088E-02 PERCENT ERROR= 0.0

RT-A2	MANE	3.00	1978.60	756.00	1.92	3.00	1978.60	756.00	1.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2536E+03 EXCESS=0.0000E+00 OUTFLOW=0.2536E+03 BASIN STORAGE=0.3133E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.68	2066.58	755.62	1.89	3.00	2065.96	756.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2699E+03 EXCESS=0.0000E+00 OUTFLOW=0.2699E+03 BASIN STORAGE=0.8844E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	2061.95	759.00	1.89	3.00	2061.95	759.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2700E+03 EXCESS=0.0000E+00 OUTFLOW=0.2700E+03 BASIN STORAGE=0.3172E-02 PERCENT ERROR= 0.0

RT-E6B	MANE	1.40	78.61	727.67	2.60	3.00	76.99	729.00	2.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4825E+01 EXCESS=0.0000E+00 OUTFLOW=0.4825E+01 BASIN STORAGE=0.3124E-03 PERCENT ERROR= 0.0

RT-E64	MANE	3.00	102.24	732.00	2.58	3.00	102.24	732.00	2.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6248E+01 EXCESS=0.0000E+00 OUTFLOW=0.6250E+01 BASIN STORAGE=0.1171E-02 PERCENT ERROR= 0.0

RT-E5B	MANE	1.90	172.72	733.08	2.97	3.00	168.79	732.00	2.97

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1414E+02 EXCESS=0.0000E+00 OUTFLOW=0.1414E+02 BASIN STORAGE=0.4941E-03 PERCENT ERROR= 0.0

RT-E54	MANE	3.00	234.68	735.00	2.96	3.00	234.68	735.00	2.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1955E+02 EXCESS=0.0000E+00 OUTFLOW=0.1956E+02 BASIN STORAGE=0.2309E-02 PERCENT ERROR= 0.0

RT-E4	MANE	3.00	331.84	744.00	2.86	3.00	331.84	744.00	2.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2581E+02 EXCESS=0.0000E+00 OUTFLOW=0.2582E+02 BASIN STORAGE=0.3757E-02 PERCENT ERROR= -0.1

RT-E3	MANE	3.00	718.60	750.00	2.13	3.00	718.60	750.00	2.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6991E+02 EXCESS=0.0000E+00 OUTFLOW=0.6992E+02 BASIN STORAGE=0.2726E-02 PERCENT ERROR= 0.0

RT-A1	MANE	0.93	775.61	750.84	2.00	3.00	760.00	750.00	2.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7850E+02 EXCESS=0.0000E+00 OUTFLOW=0.7850E+02 BASIN STORAGE=0.5084E-03 PERCENT ERROR= 0.0

RT-E1	MANE	2.40	37.79	760.80	0.71	3.00	37.52	762.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6015E+01 EXCESS=0.0000E+00 OUTFLOW=0.6022E+01 BASIN STORAGE=0.2401E-02 PERCENT ERROR= -0.1

RT-A1	MANE	3.00	93.15	756.00	0.99	3.00	93.15	756.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1457E+02 EXCESS=0.0000E+00 OUTFLOW=0.1457E+02 BASIN STORAGE=0.1545E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	343.96	753.00	1.76	3.00	343.95	753.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3878E+02 EXCESS=0.0000E+00 OUTFLOW=0.3877E+02 BASIN STORAGE=0.4304E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0

RT-B11	MANE	2.64	707.00	752.94	1.67	3.00	706.59	753.00	1.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8943E+02 EXCESS=0.0000E+00 OUTFLOW=0.8943E+02 BASIN STORAGE=0.1231E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	747.58	756.00	1.66	3.00	747.58	756.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9568E+02 EXCESS=0.0000E+00 OUTFLOW=0.9568E+02 BASIN STORAGE=0.1953E-02 PERCENT ERROR= 0.0

RT-88b	MANE	2.21	218.68	739.04	1.56	3.00	218.33	738.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2039E+02 EXCESS=0.0000E+00 OUTFLOW=0.2039E+02 BASIN STORAGE=0.7472E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	318.62	741.00	1.65	3.00	318.62	741.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3014E+02 EXCESS=0.0000E+00 OUTFLOW=0.3014E+02 BASIN STORAGE=0.1686E-02 PERCENT ERROR= 0.0

RT-10b	MANE	0.77	1021.31	753.12	1.68	3.00	1021.13	753.00	1.68

INUITY SUMMARY (AC-FT) - INFLOW=0.1386E+03 EXCESS=0.0000E+00 OUTFLOW=0.1386E+03 BASIN STORAGE=0.3239E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.17	1029.35	752.64	1.69	3.00	1029.30	753.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1428E+03 BASIN STORAGE=0.4907E-03 PERCENT ERROR= 0.0

RT-B16	MANE	3.00	37.11	738.00	1.69	3.00	37.11	738.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3488E+01 EXCESS=0.0000E+00 OUTFLOW=0.3488E+01 BASIN STORAGE=0.8968E-03 PERCENT ERROR= 0.0

RT- B3	MANE	0.80	151.95	738.84	2.07	3.00	151.64	738.00	2.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1463E+02 EXCESS=0.0000E+00 OUTFLOW=0.1463E+02 BASIN STORAGE=0.1862E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	28.02	741.00	1.62	3.00	28.02	741.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2505E+01 EXCESS=0.0000E+00 OUTFLOW=0.2506E+01 BASIN STORAGE=0.9231E-03 PERCENT ERROR= -0.1

RT-B5	MANE	3.00	47.43	741.00	1.69	3.00	47.43	741.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4416E+01 EXCESS=0.0000E+00 OUTFLOW=0.4417E+01 BASIN STORAGE=0.1419E-02 PERCENT ERROR= -0.1

RT-B5	MANE	1.30	345.32	739.59	1.88	3.00	342.95	738.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3355E+02 EXCESS=0.0000E+00 OUTFLOW=0.3355E+02 BASIN STORAGE=0.4443E-03 PERCENT ERROR= 0.0

RT-B4	MANE	2.04	343.13	740.05	1.88	3.00	341.64	741.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3355E+02 EXCESS=0.0000E+00 OUTFLOW=0.3355E+02 BASIN STORAGE=0.6376E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	2.45	366.84	741.58	1.89	3.00	363.52	741.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3741E+02 EXCESS=0.0000E+00 OUTFLOW=0.3741E+02 BASIN STORAGE=0.9222E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	93.99	732.00	2.32	3.00	93.99	732.00	2.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6473E+01 EXCESS=0.0000E+00 OUTFLOW=0.6475E+01 BASIN STORAGE=0.8911E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	279.33	735.00	2.18	3.00	279.33	735.00	2.18

INUITY SUMMARY (AC-FT) - INFLOW=0.2069E+02 EXCESS=0.0000E+00 OUTFLOW=0.2070E+02 BASIN STORAGE=0.1918E-02 PERCENT ERROR= 0.0

RT-B1	MANE	2.35	1517.35	746.24	1.77	3.00	1513.90	747.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2083E+03 EXCESS=0.0000E+00 OUTFLOW=0.2083E+03 BASIN STORAGE=0.1105E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	677.76	747.00	2.13	3.00	677.76	747.00	2.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7463E+02 EXCESS=0.0000E+00 OUTFLOW=0.7464E+02 BASIN STORAGE=0.2751E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	936.53	747.00	2.10	3.00	936.53	747.00	2.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1090E+03 EXCESS=0.0000E+00 OUTFLOW=0.1090E+03 BASIN STORAGE=0.3500E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	1202.36	750.00	2.01	3.00	1202.36	750.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1406E+03 EXCESS=0.0000E+00 OUTFLOW=0.1406E+03 BASIN STORAGE=0.1623E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	258.93	741.00	1.84	3.00	258.93	741.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT- C9	MANE	1.44	1591.05	746.83	1.91	3.00	1589.84	747.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1834E+03 EXCESS=0.0000E+00 OUTFLOW=0.1834E+03 BASIN STORAGE=0.7932E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	1.53	1641.62	748.28	1.87	3.00	1637.38	747.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1908E+03 EXCESS=0.0000E+00 OUTFLOW=0.1908E+03 BASIN STORAGE=0.7260E-03 PERCENT ERROR= 0.0

RT-C3	MANE	1.73	1697.60	749.52	1.85	3.00	1696.47	750.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2010E+03 EXCESS=0.0000E+00 OUTFLOW=0.2010E+03 BASIN STORAGE=0.8475E-03 PERCENT ERROR= 0.0

RT-C3B	MANE	1.25	1746.05	751.47	1.81	3.00	1744.67	750.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2087E+03 EXCESS=0.0000E+00 OUTFLOW=0.2087E+03 BASIN STORAGE=0.6225E-03 PERCENT ERROR= 0.0

RT-C1	MANE	2.11	1876.31	751.85	1.75	3.00	1861.83	753.00	1.75

NUITY SUMMARY (AC-FT) - INFLOW=0.2272E+03 EXCESS=0.0000E+00 OUTFLOW=0.2272E+03 BASIN STORAGE=0.1175E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	3412.37	753.00	1.76	3.00	3412.37	753.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4468E+03 EXCESS=0.0000E+00 OUTFLOW=0.4468E+03 BASIN STORAGE=0.2199E-02 PERCENT ERROR= 0.0

RT-P1B	MANE	3.00	97.09	735.00	1.75	3.00	97.09	735.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6774E+01 EXCESS=0.0000E+00 OUTFLOW=0.6777E+01 BASIN STORAGE=0.2082E-02 PERCENT ERROR= -0.1

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

APPENDIX D - 100-YEAR ANALYSIS

HEC-1 Output
100 -Year Proposed (Phase I to V) Condition Analysis
With Detention

WRC NEVADA, INC.

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)     *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE 05/06/98  TIME 13:16:31     *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   | DEVELOPED CONDITION WITH DETENTION BASINS
    5     ID   | Washoe County, Nevada                                                  |
    6     ID   |                                                                        |
    7     ID   |  100-Year Analysis                                                     |
    8     ID   |    - For offsite areas                                                 |
    9     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   10     ID   |    - Rainfall entered using hypothetical storm option                  |
   11     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   12     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   13     ID   |      (SCS, 1986)  or NEH-4 (SCS, 1972)                                 |
   14     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n) |
   15     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   16     ID   |                                                                        |
   17     ID   | File: SOMDT100.DAT                          WRC NEVADA, INC.          |
   18     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A |
   19     ID   | Project No.   3011                          Reno, Nevada  89502       |
   20     ID   |                                            (702)332-3737,FAX 332-3740|
   21     ID   ==========================================================================
   22     IT      3       0       0    1441
   23     IO      5       0       0
          *
          *
          * *********   WATERSHED SUBAREA A    ************
          *
          *

   24     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   25     PH       1            0.60    1.09    1.81    2.05    2.23    2.60    3.48    4.35
   26     BA  0.4094
   27     LS       0      73
   28     UD    0.32
          *

   29     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   30     RD    5700    0.14    0.07           TRAP       6       3
          *

   31     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   32     PH       1            0.55    1.00    1.67    1.91    2.10    2.49    3.27    4.06
   33     BA  0.3002
   34     LS       0      79
   35     UD    0.31
          *

   36     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   37     HC       2
          *
```

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

  73      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  74      HC       2
          *

  75      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  76      RD    2900   0.055     .07           TRAP      6       3
          *

  77      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  78      PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.92    3.66
  79      BA  0.1329
  80      LS       0      80
  81      UD    0.19
          *

  82      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  83      PH       1            0.50    0.91    1.52    1.73    1.89    2.21    2.98    3.75
  84      BA  0.0405
  85      LS       0      66
  86      UD    0.20
          *

  87      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  88      HC       3
          *

  89      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  90      PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.30    4.11
  91      BA  0.2819
  92      LS       0      79
  93      UD    0.30
          *

  94      KK    DB10 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 10
  95      KM        24"RCP ie 5375
  96      RS       1    STOR      -1
  97      SA     .04     .11     .26     .294    .396    .508    .628    .754    1.23
  98      SE    5375    5380    5385    5390    5392    5394    5396    5398    5400
  99      SQ       0    12.0    24.0    36.0    48.0    60.0    72.0
 100      SE    5375 5376.75 5378.47 5381.39 5385.47 5391.99 5406.13
          *

 101      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
 102      PH       1            0.60    1.09    1.81    2.04    2.21    2.58    3.46    4.35
 103      BA  0.1563
 104      LS       0      78
 105      UD    0.29
          *
```

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

  140     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  141     PH       1            0.55    1.00    1.67    1.88    2.04    2.37    3.18    4.00
  142     BA  0.0564
  143     LS       0      78
  144     UD    0.22
            *

  145     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  146     HC       2
            *

  147     KK     DB6 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 6
  148     KM           18" RCP fe 5184 and 6'X8' at 5191
  149     RS       1    STOR      -1
  150     SA   0.036   0.091   0.153   0.224   0.302   0.391   0.450
  151     SE    5186    5188    5190    5192    5194    5196    5198
  152     SQ     8.5    12.0    14.7    17.0    19.0    20.8    22.5    40.9    73.0   114.2
  153     SQ   162.6   189.2   249.1
  154     SE    5185    5186    5187    5188    5189    5190    5191    5192    5193    5194
  155     SE    5195  5195.5    5196
            *

  156     KK  RT-A8b ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8b
  157     RD    3300   0.055     .07           TRAP       6       3
            *

  158     KK  SA A8b GENERATE HYDOGRAPH FOR SUB-AREA A8b
  159     PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
  160     BA  0.1428
  161     LS       0      76
  162     UD    0.21
            *

  163     KK  CP A8b COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  164     HC       3
            *

  165     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  166     PH       1            0.54    0.98    1.63    1.82    1.96    2.26    3.04    3.82
  167     BA  0.1068
  168     LS       0      75
  169     UD    0.33
            *

  170     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A3, A4, A8 AND A11
  171     HC       3
            *

  172     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  173     RD    4400  0.0386     .07           TRAP       6       3
            *
```

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

  204     KK  SA E6B GENERATE HYDOGRAPH FOR SUB-AREA E6B
  205     PH       1            0.54    0.98    1.63    1.82    1.96    2.26    3.06    3.86
  206     BA   .0106
  207     LS       0     87
  208     UD     .06
          *

  209     KK    C-E6 COMBINE HYDROGRAPHS FOR E6 A AND B
  210     HC       2
          *

  211     KK  RT-E64 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
  212     RD    1900   .0658     .07           TRAP       6       3
          *

  213     KK     E5B GENERATE HYDOGRAPH FOR SUB-AREA E5B
  214     PH       1            0.54    0.98    1.63    1.84    2.00    2.33    3.14    3.95
  215     BA   .0893
  216     LS       0      91
  217     UD     .17
          *

  218     KK     DB8 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 8
  219     KM         24"RCP ie 5122
  220     RS       1    STOR      -1
  221     SA    .085    .134    .198    .273    .356    .445    .540    .635
  222     SE    5122    5124    5126    5128    5130    5132    5134    5136
  223     SQ       0       5      10      15      20      25      30      35      40      45
  224     SQ      50    53.4
  225     SE    5122 5123.03 5123.63 5124.18 5124.86 5125.76 5126.87 5128.19 5129.70 5131.41
  226     SE  5133.4 5135.00
          *

  227     KK  RT-E5B ROUTE HYDROGRAPH TO OUTLET OF E5A
  228     RD     900     .08     .07           TRAP       6       3
          *

  229     KK     E5A GENERATE HYDROGRAPH FOR SUB-AREA E5A
  230     PH       1             .54     .98    1.63    1.82    1.97    2.28    3.04    3.80
  231     BA   .0347
  232     LS       0      92
  233     UD     .10
          *

  234     KK    C-E5 COMBINE HYDROGRAPHS FROM E5 A AND B
  235     HC       2
          *

  236     KK    DB14 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 14
  237     KM         12"RCP ie 5060
  238     RS       1    STOR      -1
  239     SA    .341    .475    .631    .811   1.025   1.274    1.50
  240     SE    5060    5062    5064    5066    5068    5070    5072
  241     SQ       0     2.0     4.0     6.0     8.0    10.0      12      14
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  242     SE  5060.0  5060.9  5061.7  5063.0  5064.8  5067.4  5071.5  5072.0
          *

  243     KK  RT-E54 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
  244     RD   2500    .036     .07           TRAP      6       3
          *

  245     KK   C-E56 COMBINE HYDROGRAPHS FROM E5 and E6
  246     HC       2
          *

  247     KK   RT-E4 ROUTE HYDROGRAPH TO OUTLET OF E4
  248     RD   4500    .031     .07           TRAP      6       3
          *

  249     KK  SA  E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
  250     PH       1           0.51    0.93    1.56    1.75    1.89    2.19    2.98    3.77
  251     BA  0.4466
  252     LS       0      80
  253     UD    0.34
          *

  254     KK  CP  E4 COMBINE HYDROGRAPH  E4 W/HYDROGRAPH E5 AND E6
  255     HC       2
          *

  256     KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
  257     RD   3500  0.0429     .07           TRAP      6       3
          *

  258     KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
  259     PH       1           0.50    0.91    1.52    1.69    1.81    2.08    2.83    3.57
  260     BA  0.1191
  261     LS       0      75
  262     UD    0.27
          *

  263     KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
  264     HC       2
          *

  265     KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
  266     RD    500  0.0125     .04           TRAP     15       3
          *

  267     KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
  268     PH       1           0.50    0.91    1.52    1.71    1.85    2.15    2.92    3.69
  269     BA  0.1597
  270     LS       0      62
  271     UD    0.38
          *
```

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

300       KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
301       PH       1           0.54    0.98    1.63    1.87    2.06    2.44    3.22    4.00
302       BA  0.3484
303       LS       0      75
304       UD    0.26
          *

305       KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
306       HC       3
          *

307       KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
308       RD    2000  0.1000     .07           TRAP       6       3
          *

309       KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
310       PH       1           0.51    0.93    1.56    1.75    1.90    2.21    2.95    3.69
311       BA  0.0777
312       LS       0      76
313       UD    0.24
          *

314       KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
315       HC       2
          *

316       KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
317       RD    3100  0.0710     .07           TRAP       6       3
          *

318       KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
319       PH       1           0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
320       BA  0.1056
321       LS       0      84
322       UD    0.24
          *

323       KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
324       HC       2
          *

325       KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
326       PH       1           0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
327       BA  0.2445
328       LS       0      76
329       UD    0.23
          *

330       KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
331       RD    1100  0.0770     .07           TRAP       6       3
          *
```

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

401       KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
402       PH       1            0.49    0.89    1.48    1.7    1.87    2.21    2.94    3.66
403       BA    .029
404       LS       0      78
405       UD     .20
          *

406       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
407       RD    2100     .05    .070            TRAP       5       2
          *

408       KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
409       PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
410       BA  0.0877
411       LS       0      78
412       UD    0.22
          *

413       KK   RT-B5 ROUTE HYDROGRAPH FROM B14 TO OUTLET OF B5
414       RD    2325  0.0538    .070            TRAP       5       2
          *

415       KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
416       PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
417       BA    .078
418       LS       0      80
419       UD    0.23
          *

420       KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
421       HC       4
          *

422       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
423       RD     900  0.0390     .07            TRAP       6       3
          *

424       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
425       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
426       BA  0.0360
427       LS       0      85
428       UD    0.14
          *

429       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
430       HC       2
          *

431       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
432       RD     950  0.0260     .07            TRAP       6       3
          *
```

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

467       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
468       RD    1400  0.0286     .07           TRAP       6       3
          *

469       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
470       PH       1            0.45    0.83    1.38    1.57    1.72    2.03    2.73    3.42
471       BA  0.0527
472       LS       0      83
473       UD    0.15
          *

474       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
475       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    **************
          *
          *
          *

476       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
477       PH       1            0.62    1.13    1.88    2.12    2.29    2.67    3.53    4.40
478       BA  0.6580
479       LS       0      77
480       UD    0.33
          *

481       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
482       RD    4800  0.1583     .07           TRAP       6       3
          *

483       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
484       PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.24    4.00
485       BA  0.3156
486       LS       0      80
487       UD    0.19
          *

488       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
489       HC       2
          *

490       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
491       RD    5500  0.1091     .07           TRAP       6       3
          *

492       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
493       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    2.96    3.66
494       BA  0.3359
495       LS       0      80
496       UD    0.26
          *
```

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

526       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
527       PH       1            0.47    0.85    1.41    1.59    1.73    2.01    2.69    3.37
528       BA  0.1147
529       LS       0      75
530       UD    0.27
          *

531       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
532       HC       2
          *

533       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
534       RD    1200  0.0580     .07           TRAP       6       3
          *

535       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
536       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
537       BA  0.0930
538       LS       0      79
539       UD    0.20
          *

540       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
541       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
542       BA  0.0384
543       LS       0      77
544       UD    0.18
          *

545       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
546       HC       3
          *

547       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
548       KM           36"RCP ie 5085 and 8'x5' at 5106
549       RS       1    STOR      -1
550       SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
551       SE    5085    5090    5095    5100    5105    5110    5115    5120
552       SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
553       SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
554       SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
555       SE    5109    5111    5113    5115    5117    5118    5120
          *

556       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
557       RD    1200     .04     .07           TRAP       6       3
          *

558       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
559       PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
560       BA     .12
561       LS       0      76
562       UD     .27
          *
```

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

563       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
564       HC       2
          *

565       KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
566       KM         10'x6' RCB ie 5020
567       RS       1    STOR      -1
568       SA    .270   1.030   1.430   2.340
569       SE    5020    5025    5030    5035
570       SQ       0      90     180     270     360     400     540     630     720     810
571       SQ     900     972
572       SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
573       SE  5033.5 5035.00
          *

574       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
575       RD     950     .05     .07           TRAP       6       3
          *

576       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
577       PH       1           0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
578       BA      .1
579       LS       0      78
580       UD     .30
          *

581       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
582       HC       2
          *

583       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
584       PH       1           0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
585       BA  0.1705
586       LS       0      78
587       UD    0.25
          *

588       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
589       HC       2
          *

590       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
591       RD    1500  0.0400     .07           TRAP       6       3
          *

592       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
593       PH       1           0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
594       BA  0.0809
595       LS       0      79
596       UD    0.24
          *
```

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

627       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
628       PH       1           0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
629       BA     .11
630       LS       0      79
631       UD     .20
          *

632       KK      F1 Combine Hydrographs at F1
633       HC       2
          *

634       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
635       PH       1           0.48    0.87    1.45    1.64    1.78    2.08    2.80    3.53
636       BA  0.1352
637       LS       0      79
638       UD    0.25
          *

639       KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
640       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
641       HC       2
642       ZZ
```

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                .
                .
89              .   SA A10
                .      V
                .      V
94              .   DB10
                .      .
                .      .
101             .      .     SA A15
                .      .        V
                .      .        V
106             .      .     RT-A9
                .      .        .
                .      .        .
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                .      .        .        .
                .      .        .        .
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                .      .        V
                .      .        V
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                .      .        .
                .      .        .
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                .      V
                .      V
124             .   RT-A8a
                .      .
                .      .
                .      .     SA A8a
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                .      .        .
131             .   CP A8a.............
                .      V
                .      V
133             .   RT-A8b
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                .      .
135             .      .     SA A13
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                .      .        .
140             .      .        .     SA A12
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                .      .        .        .
145             .      .     CP A12.............
                .      .        V
                .      .        V
147             .      .     DB6
                .      .        V
                .      .        V
156             .      .     RT-A8b
                .      .        .
                .      .        .
158             .      .        .     SA A8b
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163             .   CP A8b.........................
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165             .      .     SA A11
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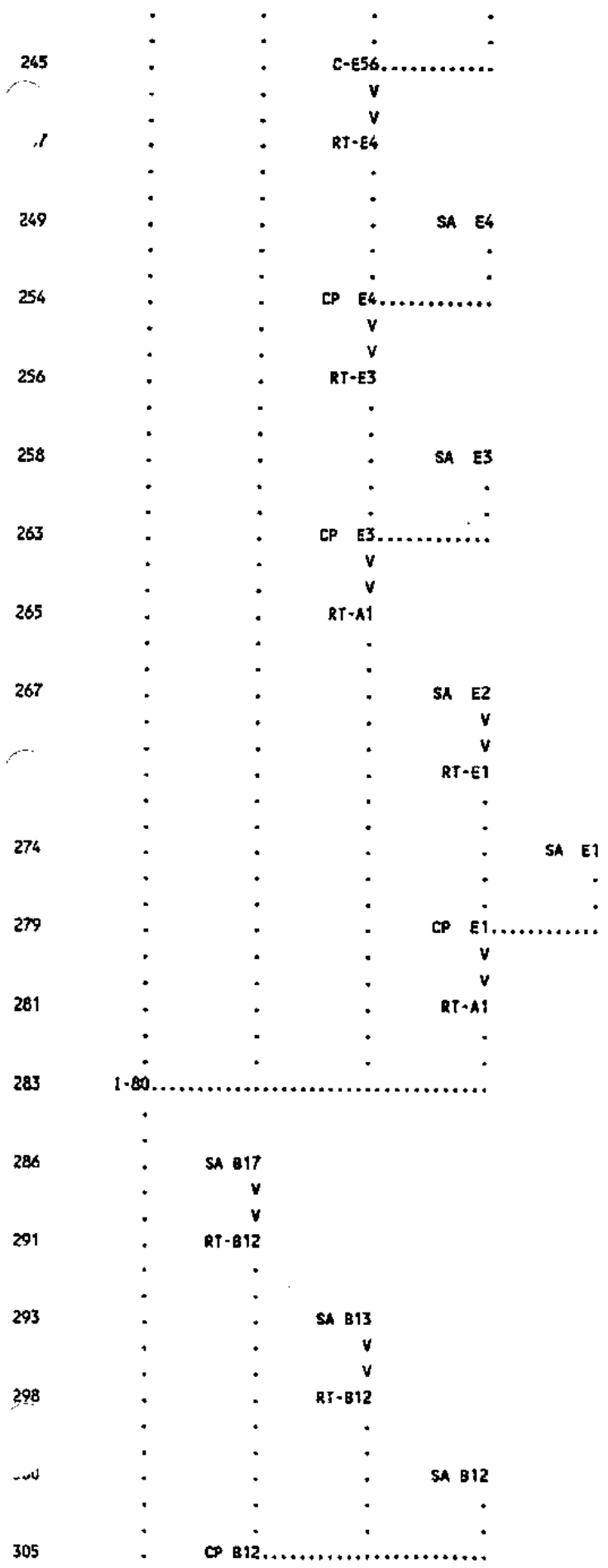
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SA E2
RT-E1
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SA E1
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CP E1
281
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RT-B12
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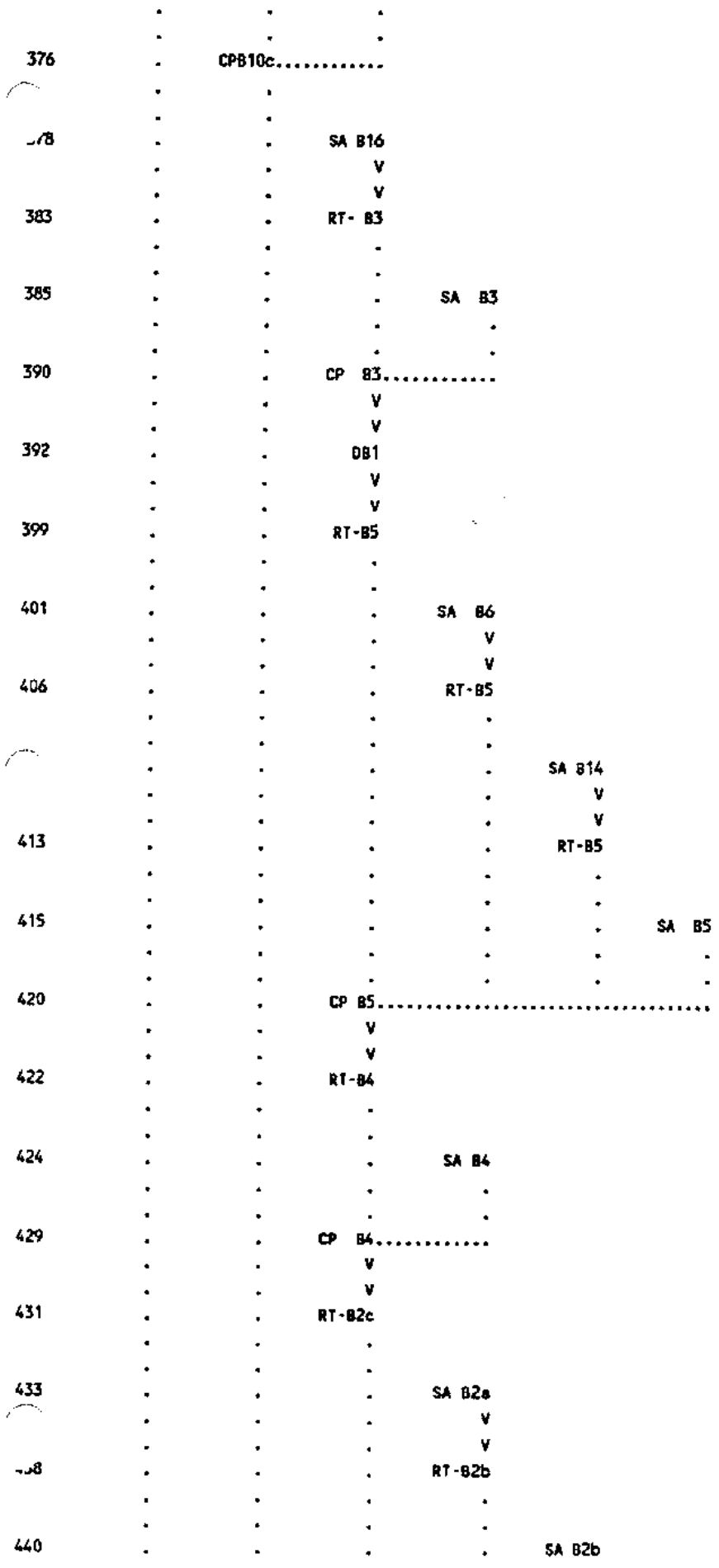
CP B12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406
RT-B5
SA B14
413
RT-B5
415
SA B5
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CP B5
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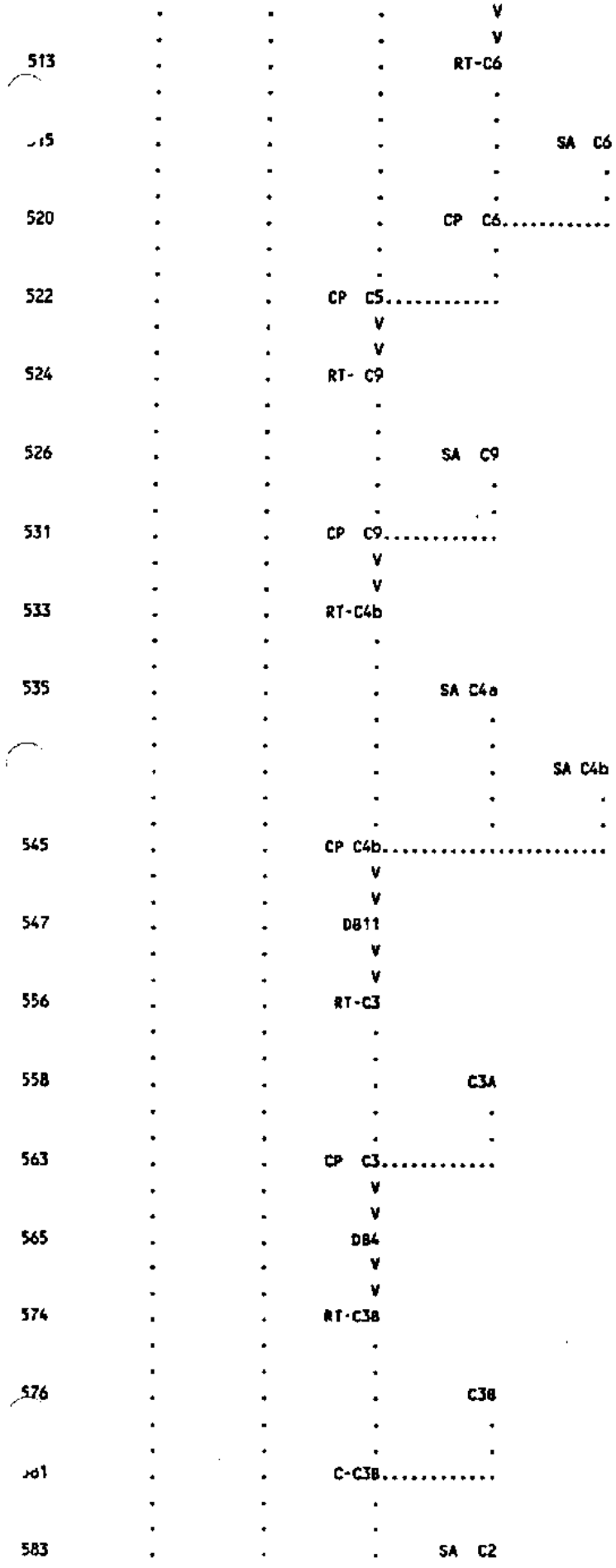
SA B2b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SA C6
CP C6
CP C5
RT- C9
SA C9
CP C9
RT-C4b
SA C4a
SA C4b
CP C4b
DB11
RT-C3
C3A
CP C3
DB4
RT-C3B
C3B
C-C3B
SA C2

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              MAY  1991                *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  13:16:31   *
*****************************************
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*****************************************
*                                       *
*     U.S. ARMY CORPS OF ENGINEERS      *
*     HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748               *
*                                       *
*****************************************
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```
| SOMERSETT PLANNED UNIT DEVELOPEMENT
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
| DEVELOPED CONDITION WITH DETENTION BASINS
| Washoe County, Nevada
|
|  100-Year Analysis
|    - For offsite areas
|    - Watersheds measured from USGS 7.5 Minute Quads
|    - Rainfall entered using hypothetical storm option
|    - Rainfall data estimated using revised NOAA precipitation data
|    - Curve number estimates based on Sage-Grass, as described in TR-55
|      (SCS, 1986)  or NEH-4 (SCS, 1972)
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)
|      as modified for the Washoe County Hydrologic Criteria Manual.
|
| File: SOMDT100.DAT                        WRC NEVADA, INC.
| APRIL 1998                                1575 DELUCCHI LN STE.207A
| Project No.   3011                        Reno, Nevada  89502
|                                          (702)332-3737,FAX 332-3740
```

```
23 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      1441  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     4   0  ENDING DATE
                NDTIME      0000  ENDING TIME
                 ICENT        19  CENTURY MARK

              COMPUTATION INTERVAL    0.05 HOURS
                  TOTAL TIME BASE   72.00 HOURS

     ENGLISH UNITS
         DRAINAGE AREA          SQUARE MILES
         PRECIPITATION DEPTH    INCHES
         LENGTH, ELEVATION      FEET
         FLOW                   CUBIC FEET PER SECOND
         STORAGE VOLUME         ACRE-FEET
```

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	343.	12.40	59.	20.	7.	0.41		
ROUTED TO	RT-A7	345.	12.50	59.	20.	7.	0.41		
HYDROGRAPH AT	SA A7	293.	12.35	49.	16.	5.	0.30		
2 COMBINED AT	CP A7	612.	12.45	108.	36.	12.	0.71		
ROUTED TO	RT-A6a	610.	12.45	108.	36.	12.	0.71		
HYDROGRAPH AT	SA A6a	79.	12.15	9.	3.	1.	0.06		
2 COMBINED AT	CP A6a	639.	12.45	117.	39.	13.	0.77		
ROUTED TO	DB12	515.	12.60	114.	39.	13.	0.77	5450.40	12.60
ROUTED TO	RT-A6b	527.	12.65	114.	39.	13.	0.77		
HYDROGRAPH AT	SA A6b	72.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP A6b	540.	12.65	122.	42.	14.	0.82		
ROUTED TO	RT-A5	530.	12.70	122.	42.	14.	0.82		
HYDROGRAPH AT	SA A5	198.	12.20	24.	8.	3.	0.13		
2 COMBINED AT	CP A5	569.	12.70	145.	50.	17.	0.95		
ROUTED TO	RT-A4	578.	12.75	145.	50.	17.	0.95		
HYDROGRAPH AT	SA A3	144.	12.25	19.	6.	2.	0.13		
HYDROGRAPH AT	SA A4	20.	12.25	3.	1.	0.	0.04		
3 COMBINED AT	CP A4	611.	12.75	167.	57.	19.	1.12		
HYDROGRAPH AT	SA A10	294.	12.35	47.	16.	5.	0.28		
ROUTED TO	DB10	67.	12.95	47.	16.	5.	0.28	5400.47	12.95
HYDROGRAPH AT	SA A15	173.	12.35	27.	9.	3.	0.16		
ROUTED TO	RT-A9	174.	12.50	27.	9.	3.	0.16		
HYDROGRAPH AT	SA A9	344.	12.40	59.	19.	6.	0.36		
2 COMBINED AT	CP A9	500.	12.45	86.	29.	10.	0.52		
ROUTED TO	DB9	473.	12.50	86.	29.	10.	0.52	5390.69	12.50
2 COMBINED AT	CPA910	538.	12.50	133.	44.	15.	0.80		

ROUTED TO	D814	13.	14.35	12.	9.	3.	0.12	5071.73	14.35
ROUTED TO	RT-E54	13.	14.55	12.	9.	3.	0.12		
2 COMBINED AT	C-E56	40.	12.20	20.	12.	4.	0.17		
ROUTED TO	RT-E4	39.	12.50	20.	12.	4.	0.17		
HYDROGRAPH AT	SA E4	381.	12.40	66.	22.	7.	0.45		
2 COMBINED AT	CP E4	400.	12.40	85.	35.	12.	0.62		
ROUTED TO	RT-E3	401.	12.50	85.	35.	12.	0.62		
HYDROGRAPH AT	SA E3	84.	12.30	13.	4.	1.	0.12		
2 COMBINED AT	CP E3	464.	12.50	98.	39.	13.	0.74		
ROUTED TO	RT-A1	463.	12.50	98.	39.	13.	0.74		
HYDROGRAPH AT	SA E2	38.	12.50	9.	3.	1.	0.16		
ROUTED TO	RT-E1	38.	12.70	9.	3.	1.	0.16		
HYDROGRAPH AT	SA E1	77.	12.35	13.	4.	1.	0.12		
2 COMBINED AT	CP E1	93.	12.50	21.	7.	2.	0.28		
ROUTED TO	RT-A1	93.	12.60	21.	7.	2.	0.28		
4 COMBINED AT	I-80	1944.	12.60	533.	186.	62.	3.80		
HYDROGRAPH AT	SA B17	345.	12.40	60.	20.	7.	0.41		
ROUTED TO	RT-B12	344.	12.55	60.	20.	7.	0.41		
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24		
ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24		
HYDROGRAPH AT	SA B12	303.	12.30	47.	16.	5.	0.35		
3 COMBINED AT	CP B12	710.	12.50	137.	45.	15.	1.00		
ROUTED TO	RT-B11	707.	12.55	137.	45.	15.	1.00		
HYDROGRAPH AT	SA B11	66.	12.30	10.	3.	1.	0.08		
2 COMBINED AT	CP B11	745.	12.50	146.	48.	16.	1.08		
ROUTED TO	RT-10a	748.	12.60	146.	48.	16.	1.08		
HYDROGRAPH AT	SAB10a	112.	12.30	16.	5.	2.	0.11		
2 COMBINED AT	CPB10a	798.	12.55	162.	54.	18.	1.19		
HYDROGRAPH AT	SA 88a	219.	12.30	31.	10.	3.	0.24		
ROUTED TO	RT-88b	218.	12.30	31.	10.	3.	0.24		

ROUTED TO	RT-B2b	94.	12.20	9.	3.	1.	0.05		
HYDROGRAPH AT	SA B2b	186.	12.20	21.	7.	2.	0.13		
2 COMBINED AT	CP B2b	280.	12.20	30.	10.	3.	0.18		
ROUTED TO	DB2	126.	12.40	30.	10.	3.	0.18	5058.54	12.40
ROUTED TO	RT-B2c	128.	12.45	30.	10.	3.	0.18		
HYDROGRAPH AT	SA B2c	70.	12.20	9.	3.	1.	0.06		
3 COMBINED AT	CP B2c	388.	12.35	77.	29.	11.	0.61		
2 COMBINED AT	CPB10b	1169.	12.65	292.	102.	35.	2.21		
ROUTED TO	RT-B1	1167.	12.70	292.	102.	35.	2.21		
HYDROGRAPH AT	SA B1	65.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP B1	1178.	12.70	299.	104.	36.	2.26		
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66		
ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66		
HYDROGRAPH AT	SA C11	423.	12.25	53.	17.	6.	0.32		
2 COMBINED AT	CP C11	934.	12.40	166.	55.	18.	0.97		
ROUTED TO	RT-C7	937.	12.45	166.	55.	18.	0.97		
HYDROGRAPH AT	SA C7	335.	12.30	49.	16.	5.	0.34		
2 COMBINED AT	CP C7	1202.	12.45	215.	71.	24.	1.31		
ROUTED TO	RT-C5	1202.	12.50	215.	71.	24.	1.31		
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15		
2 COMBINED AT	CP C5	1301.	12.45	233.	77.	26.	1.46		
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24		
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24		
HYDROGRAPH AT	SA C6	77.	12.30	11.	4.	1.	0.10		
2 COMBINED AT	CP C6	333.	12.35	47.	16.	5.	0.33		
2 COMBINED AT	CP C5	1590.	12.45	280.	92.	31.	1.80		
ROUTED TO	RT- C9	1590.	12.45	280.	92.	31.	1.80		
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11		
2 COMBINED AT	CP C9	1650.	12.45	292.	96.	32.	1.91		
ROUTED TO	RT-C4b	1637.	12.45	292.	96.	32.	1.91		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	345.18	750.00	1.78	3.00	345.18	750.00	1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3890E+02 EXCESS=0.0000E+00 OUTFLOW=0.3891E+02 BASIN STORAGE=0.2877E-02 PERCENT ERROR= 0.0

RT-A6a	MANE	0.85	611.44	747.45	1.88	3.00	609.91	747.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7110E+02 EXCESS=0.0000E+00 OUTFLOW=0.7110E+02 BASIN STORAGE=0.3138E-03 PERCENT ERROR= 0.0

RT-A6b	MANE	3.00	526.73	759.00	1.88	3.00	526.73	759.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7698E+02 EXCESS=0.0000E+00 OUTFLOW=0.7698E+02 BASIN STORAGE=0.1656E-02 PERCENT ERROR= 0.0

RT-A5	MANE	1.95	533.33	760.62	1.89	3.00	530.25	762.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8241E+02 EXCESS=0.0000E+00 OUTFLOW=0.8241E+02 BASIN STORAGE=0.8122E-03 PERCENT ERROR= 0.0

RT-A4	MANE	3.00	578.37	765.00	1.96	3.00	578.36	765.00	1.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9912E+02 EXCESS=0.0000E+00 OUTFLOW=0.9912E+02 BASIN STORAGE=0.2206E-02 PERCENT ERROR= 0.0

RT-A9	MANE	3.00	174.29	750.00	2.17	3.00	174.29	750.00	2.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1808E+02 EXCESS=0.0000E+00 OUTFLOW=0.1809E+02 BASIN STORAGE=0.3192E-02 PERCENT ERROR= -0.1

RT-A8a	MANE	2.57	536.87	754.01	2.05	3.00	535.57	753.00	2.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8752E+02 EXCESS=0.0000E+00 OUTFLOW=0.8752E+02 BASIN STORAGE=0.9367E-03 PERCENT ERROR= 0.0

RT-A8b	MANE	3.00	558.46	756.00	2.03	3.00	558.46	756.00	2.03

...INUITY SUMMARY (AC-FT) - INFLOW=0.9293E+02 EXCESS=0.0000E+00 OUTFLOW=0.9293E+02 BASIN STORAGE=0.2404E-02 PERCENT ERROR= 0.0

RT-A8b	MANE	3.00	258.45	747.00	1.96	3.00	258.45	747.00	1.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7847E+02 EXCESS=0.0000E+00 OUTFLOW=0.7847E+02 BASIN STORAGE=0.5043E-03 PERCENT ERROR= 0.0

RT-E1	MANE	2.40	37.79	760.80	0.71	3.00	37.52	762.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6015E+01 EXCESS=0.0000E+00 OUTFLOW=0.6022E+01 BASIN STORAGE=0.2401E-02 PERCENT ERROR= -0.1

RT-A1	MANE	3.00	93.15	756.00	0.99	3.00	93.15	756.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1457E+02 EXCESS=0.0000E+00 OUTFLOW=0.1457E+02 BASIN STORAGE=0.1565E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	343.96	753.00	1.76	3.00	343.95	753.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3878E+02 EXCESS=0.0000E+00 OUTFLOW=0.3877E+02 BASIN STORAGE=0.4304E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0

RT-B11	MANE	2.64	707.00	752.94	1.67	3.00	706.59	753.00	1.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8943E+02 EXCESS=0.0000E+00 OUTFLOW=0.8943E+02 BASIN STORAGE=0.1231E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	747.58	756.00	1.66	3.00	747.58	756.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9568E+02 EXCESS=0.0000E+00 OUTFLOW=0.9568E+02 BASIN STORAGE=0.1953E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	2.21	218.68	739.04	1.56	3.00	218.33	738.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2039E+02 EXCESS=0.0000E+00 OUTFLOW=0.2039E+02 BASIN STORAGE=0.7472E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	318.62	741.00	1.65	3.00	318.62	741.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3014E+02 EXCESS=0.0000E+00 OUTFLOW=0.3014E+02 BASIN STORAGE=0.1686E-02 PERCENT ERROR= 0.0

RT-10b	MANE	0.77	1021.31	753.12	1.68	3.00	1021.13	753.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1386E+03 EXCESS=0.0000E+00 OUTFLOW=0.1386E+03 BASIN STORAGE=0.3239E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.21	913.72	761.50	1.69	3.00	912.74	762.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7463E+02 EXCESS=0.0000E+00 OUTFLOW=0.7464E+02 BASIN STORAGE=0.2751E-02 PERCENT ERROR= 0.0

RT-C7 MANE	3.00	936.53	747.00	2.10	3.00	936.53	747.00	2.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1090E+03 EXCESS=0.0000E+00 OUTFLOW=0.1090E+03 BASIN STORAGE=0.3500E-02 PERCENT ERROR= 0.0

RT-C5 MANE	3.00	1202.36	750.00	2.01	3.00	1202.36	750.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1406E+03 EXCESS=0.0000E+00 OUTFLOW=0.1406E+03 BASIN STORAGE=0.1623E-02 PERCENT ERROR= 0.0

RT-C6 MANE	3.00	258.93	741.00	1.84	3.00	258.93	741.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT- C9 MANE	1.44	1591.05	746.83	1.91	3.00	1589.84	747.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1834E+03 EXCESS=0.0000E+00 OUTFLOW=0.1834E+03 BASIN STORAGE=0.7932E-03 PERCENT ERROR= 0.0

RT-C4b MANE	1.53	1641.62	748.28	1.87	3.00	1637.38	747.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1908E+03 EXCESS=0.0000E+00 OUTFLOW=0.1908E+03 BASIN STORAGE=0.7260E-03 PERCENT ERROR= 0.0

RT-C3 MANE	1.91	1184.58	767.36	1.85	3.00	1182.97	765.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2010E+03 EXCESS=0.0000E+00 OUTFLOW=0.2010E+03 BASIN STORAGE=0.8256E-03 PERCENT ERROR= 0.0

RT-C3B MANE	1.48	971.63	786.05	1.81	3.00	971.61	786.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2087E+03 EXCESS=0.0000E+00 OUTFLOW=0.2087E+03 BASIN STORAGE=0.5700E-03 PERCENT ERROR= 0.0

RT-C1 MANE	2.51	996.58	785.96	1.75	3.00	996.55	786.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2273E+03 EXCESS=0.0000E+00 OUTFLOW=0.2273E+03 BASIN STORAGE=0.1241E-02 PERCENT ERROR= 0.0

RT-D1 MANE	3.00	2052.46	768.00	1.76	3.00	2052.46	768.00	1.76

.NUITY SUMMARY (AC-FT) - INFLOW=0.4469E+03 EXCESS=0.0000E+00 OUTFLOW=0.4469E+03 BASIN STORAGE=0.2006E-02 PERCENT ERROR= 0.0

RT-F1B MANE	3.00	6.43	789.00	1.75	3.00	6.43	789.00	1.75

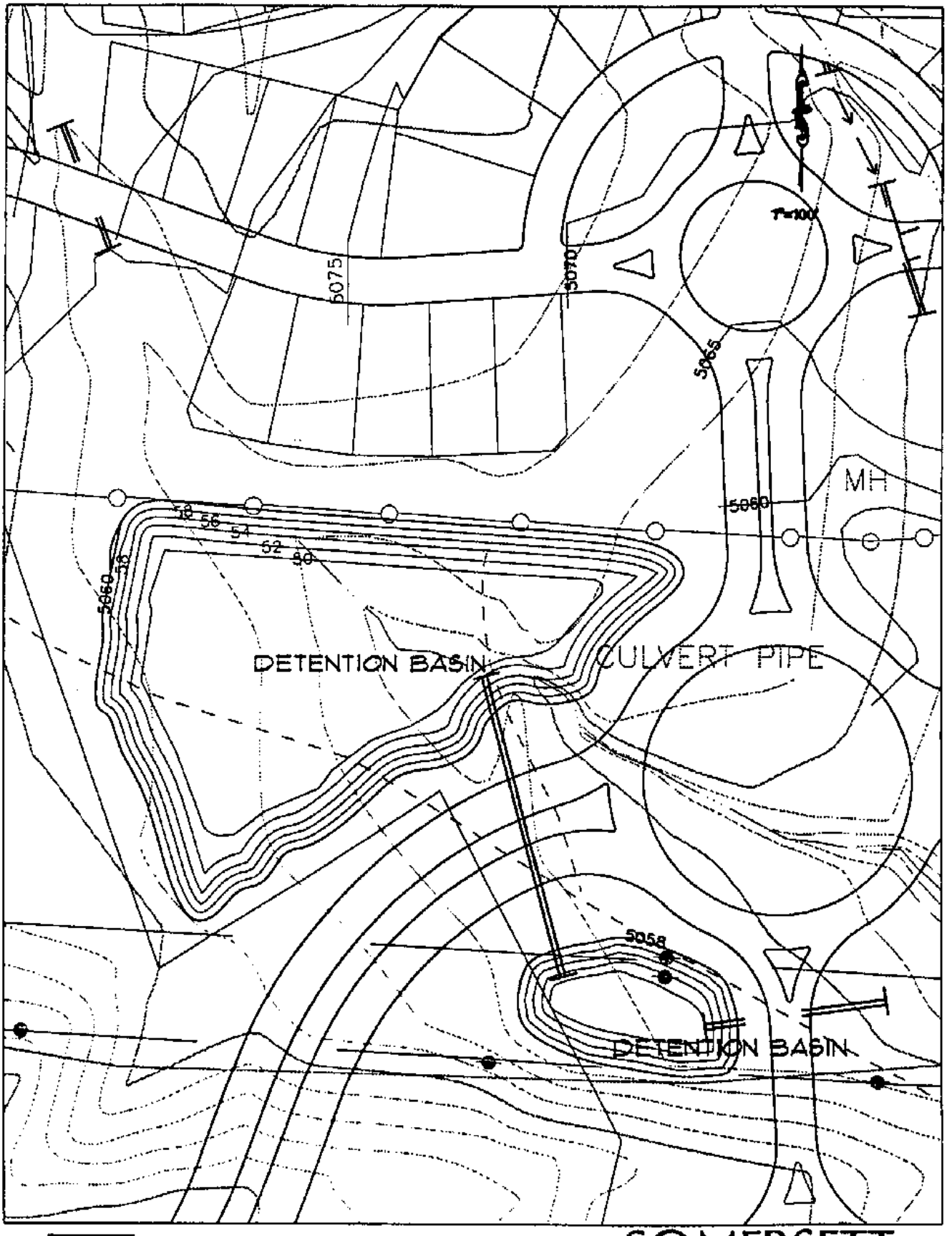
APPENDIX E
Detention Basins

APPENDIX E - DETENTION BASINS

Detention Basin Schematics and Supporting Calculations

WRC NEVADA INC.

April 17, 1998



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PROPOSED DETENTION #1

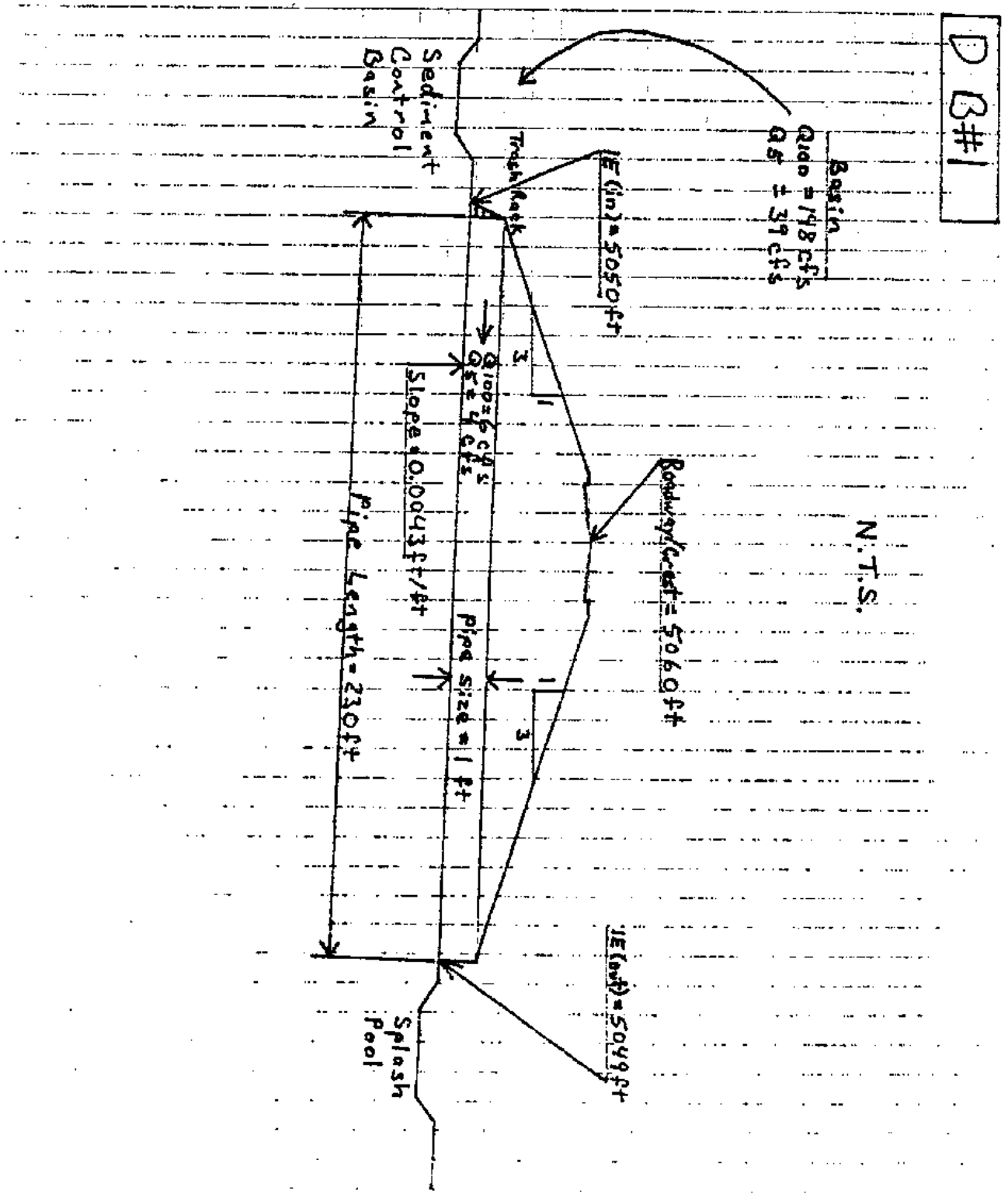
WRC FORM #68N 10/97R

WRC NEVADA, INC

1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset #
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts



CURRENT DATE: 04-23-1998
CURRENT TIME: 14:50:31

FILE DATE: 04-21-1998
FILE NAME: SSDB1

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5050.00	5049.00	230.00	1 RCP	1.00	1.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB1 DATE: 04-21-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5050.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5050.65	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5050.99	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.00	1
.03	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.00	1
..91	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5056.17	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5058.88	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5059.95	7.0	6.3	0.0	0.0	0.0	0.0	0.0	0.00	30
5060.03	8.0	6.4	0.0	0.0	0.0	0.0	0.0	1.56	24
5060.04	9.0	6.4	0.0	0.0	0.0	0.0	0.0	2.54	9
5060.05	10.0	6.4	0.0	0.0	0.0	0.0	0.0	3.57	9
5060.00	6.4	6.4	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB1 DATE: 04-21-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5050.00	0.000	0.00	0.00	0.00
5050.65	0.000	1.00	0.00	0.00
5050.99	0.000	2.00	0.00	0.00
5052.03	0.000	3.00	0.00	0.00
5053.91	0.000	4.00	0.00	0.00
5056.17	0.000	5.00	0.00	0.00
5058.88	0.000	6.00	0.00	0.00
5059.95	-0.002	7.00	0.65	9.29
5060.03	0.000	8.00	0.06	0.75
5060.04	0.000	9.00	0.08	0.89
5060.05	0.000	10.00	0.05	0.50

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

'ENT DATE: 04-23-1998
.NT TIME: 14:50:31

FILE DATE: 04-21-1998
FILE NAME: SSD81

PERFORMANCE CURVE FOR CULVERT 1 - 1(1.00 (ft) BY 1.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5050.00	0.00	-1.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
1.00	5050.65	0.60	0.65	2-M2c	0.48	0.42	0.42	0.12	3.22	1.30
2.00	5050.99	0.92	0.99	2-M2c	0.76	0.60	0.60	0.18	4.04	1.68
3.00	5052.03	1.25	2.03	2-M2c	1.00	0.74	0.74	0.23	4.80	1.94
4.00	5053.91	1.69	3.91	2-M2c	1.00	0.84	0.84	0.27	5.64	2.14
5.00	5056.17	2.27	6.17	2-M2c	1.00	0.92	0.92	0.31	6.56	2.32
6.00	5058.88	2.99	8.88	6-FFc	1.00	1.00	1.00	0.35	7.64	2.46
6.35	5059.95	3.27	9.95	6-FFc	1.00	1.00	1.00	0.38	8.08	2.60
6.38	5060.03	3.29	10.03	6-FFc	1.00	1.00	1.00	0.41	8.12	2.71
6.38	5060.04	3.29	10.04	6-FFc	1.00	1.00	1.00	0.44	8.12	2.82
6.38	5060.05	3.29	10.05	6-FFc	1.00	1.00	1.00	0.46	8.13	2.92

El. inlet face invert 5050.00 ft El. outlet invert 5049.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5050.00 ft
OUTLET STATION	230.00 ft
OUTLET ELEVATION	5049.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0043
CULVERT LENGTH ALONG SLOPE	230.00 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	1.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

ENT DATE: 04-23-1998
NT TIME: 14:50:31

FILE DATE: 04-21-1998
FILE NAME: SSDB1

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

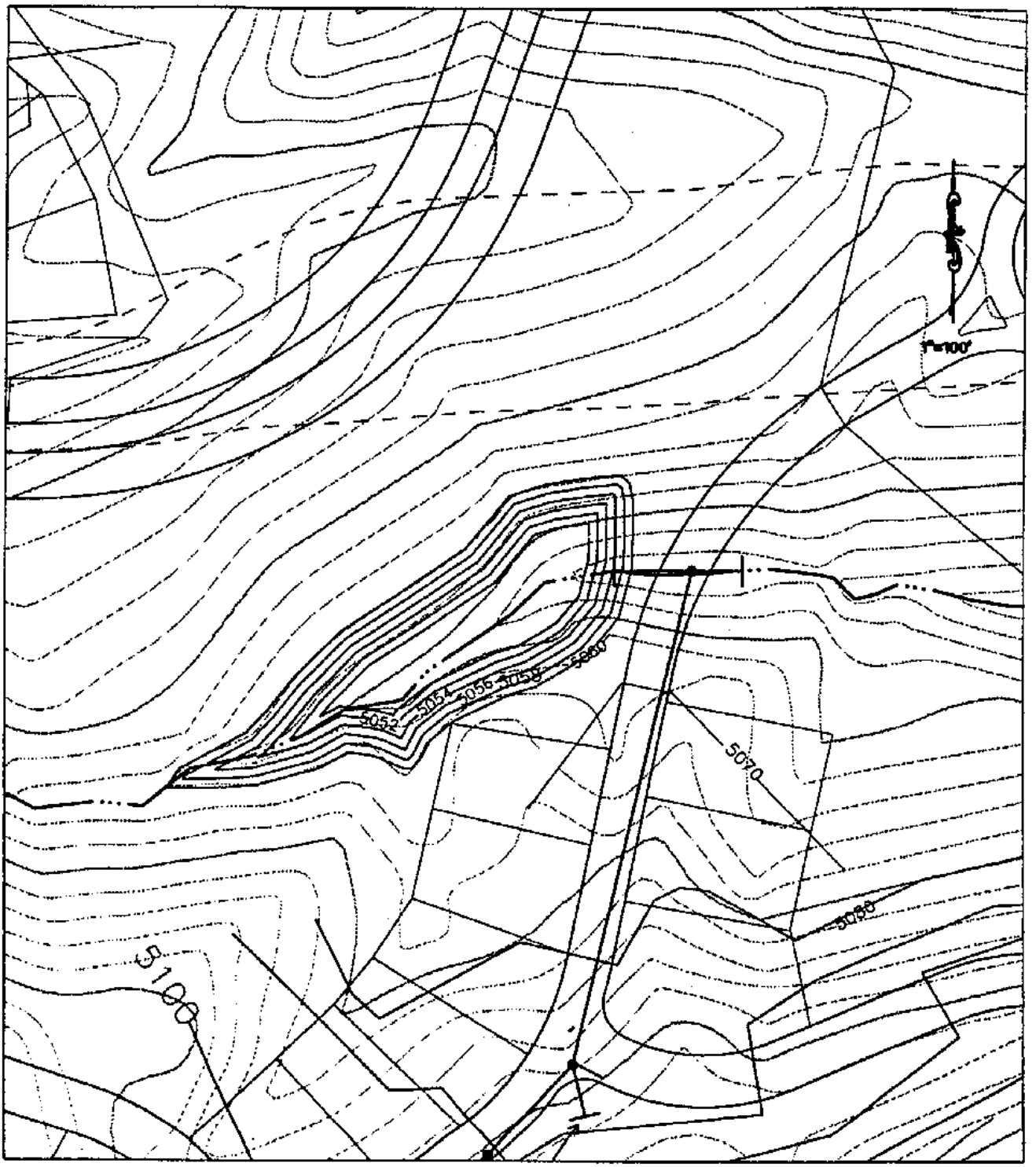
BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.050
MANNING'S n (.01-0.1)	0.060
CHANNEL INVERT ELEVATION	5049.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5049.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5049.00	0.000	0.00	0.00	0.00
1.00	5049.12	0.658	0.12	1.30	0.38
2.00	5049.18	0.692	0.18	1.68	0.57
3.00	5049.23	0.711	0.23	1.94	0.72
4.00	5049.27	0.723	0.27	2.14	0.85
5.00	5049.31	0.732	0.31	2.32	0.97
6.00	5049.35	0.738	0.35	2.46	1.08
7.00	5049.38	0.744	0.38	2.60	1.18
8.00	5049.41	0.749	0.41	2.71	1.27
9.00	5049.44	0.753	0.44	2.82	1.36
10.00	5049.46	0.756	0.46	2.92	1.45

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5060.00 ft



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PROPOSED DETENTION #2

P:\14--\1466\1466-03\HYDRO\SSHYDRO.dwg Thu Apr 30 17:16:53 1998

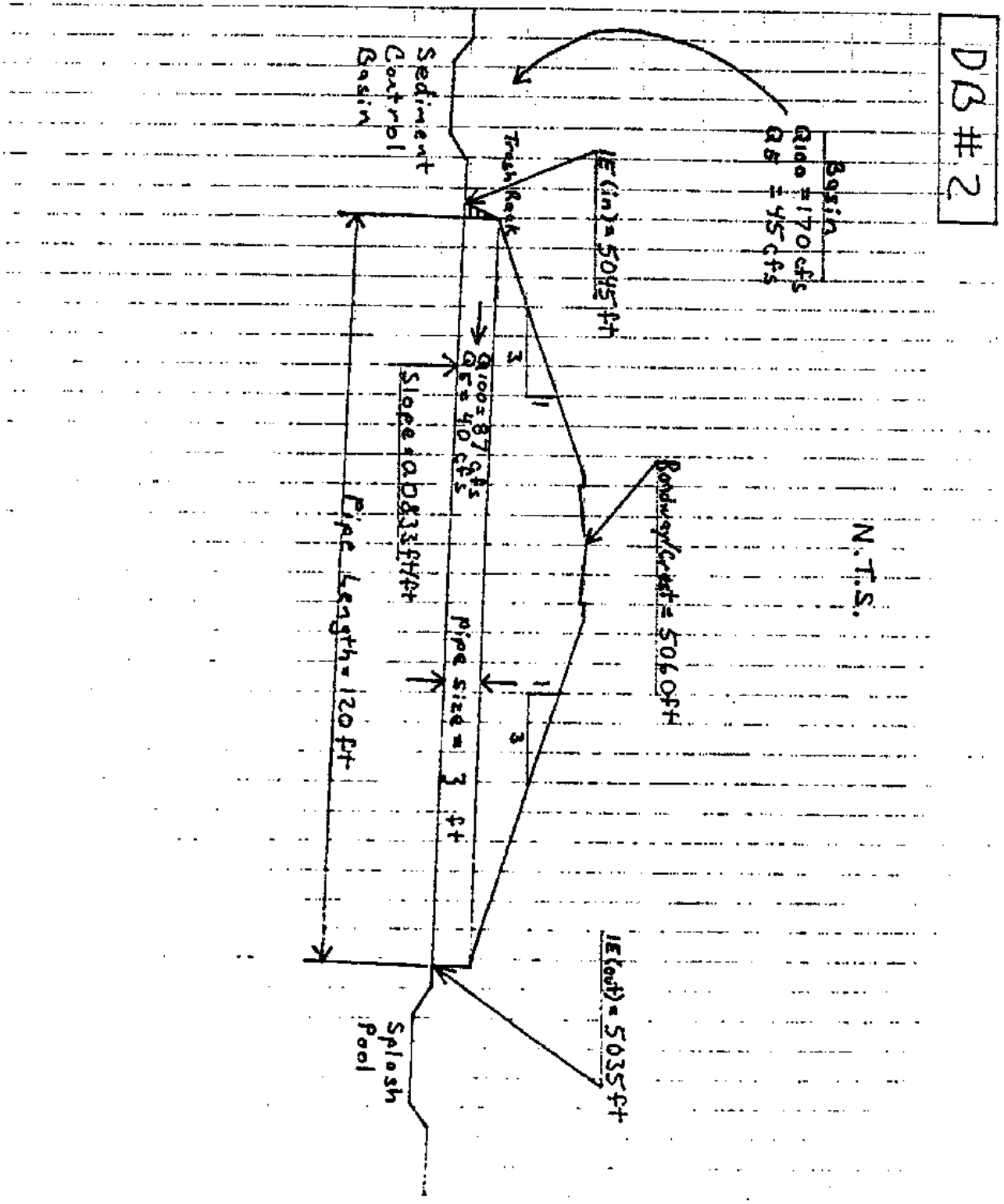
WRC FORM #68N 10/97R

WRC NEVADA, INC.
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #2



CURRENT DATE: 05-06-1998
CURRENT TIME: 10:50:07

FILE DATE: 05-06-1998
FILE NAME: SSDB2

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS / SHAPE / MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5045.00	5035.00	120.42	1 RCP	3.00	3.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB2 DATE: 05-06-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5045.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5046.23	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5046.98	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.00	1
.58	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.00	1
.18	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5048.88	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5049.73	60.0	60.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5050.75	70.0	70.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5051.96	80.0	80.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5053.32	90.0	90.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5054.84	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5060.00	128.4	128.4	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB2 DATE: 05-06-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5045.00	0.000	0.00	0.00	0.00
5046.23	0.000	10.00	0.00	0.00
5046.98	0.000	20.00	0.00	0.00
5047.58	0.000	30.00	0.00	0.00
5048.18	0.000	40.00	0.00	0.00
5048.88	0.000	50.00	0.00	0.00
5049.73	0.000	60.00	0.00	0.00
5050.75	0.000	70.00	0.00	0.00
5051.96	0.000	80.00	0.00	0.00
5053.32	0.000	90.00	0.00	0.00
5054.84	0.000	100.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

NT DATE: 05-06-1998 FILE DATE: 05-06-1998
T TIME: 10:50:07 FILE NAME: SSDB2

PERFORMANCE CURVE FOR CULVERT 1 - 1(3.00 (ft) BY 3.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5045.00	0.00	-10.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
10.00	5046.23	1.23	-7.93	1-S2n	0.46	0.99	0.39	0.53	17.76	2.50
20.00	5046.98	1.98	-7.47	1-S2n	0.67	1.43	0.68	0.77	16.48	3.10
30.00	5047.58	2.58	-6.91	1-S2n	0.82	1.77	0.77	0.96	20.66	3.50
40.00	5048.18	3.18	-6.23	1-S2n	0.96	2.06	1.00	1.12	19.44	3.80
50.00	5048.88	3.88	-5.41	1-S2n	1.08	2.29	1.13	1.26	20.42	4.05
60.00	5049.73	4.73	-4.46	1-S2n	1.20	2.49	1.26	1.39	21.38	4.26
70.00	5050.75	5.75	-3.36	1-S2n	1.30	2.65	1.39	1.50	21.91	4.45
80.00	5051.96	6.96	-2.12	1-S2n	1.40	2.81	1.51	1.60	22.51	4.61
90.00	5053.32	8.32	-0.71	1-S2n	1.50	2.97	1.63	1.70	23.00	4.76
100.00	5054.84	9.84	0.78	6-FFc	1.60	3.00	3.00	1.79	14.15	4.90

El. inlet face invert 5045.00 ft El. outlet invert 5035.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

ITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5045.00 ft
OUTLET STATION	120.00 ft
OUTLET ELEVATION	5035.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0833
CULVERT LENGTH ALONG SLOPE	120.42 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	3.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

NT DATE: 05-06-1998
T TIME: 10:50:07

FILE DATE: 05-06-1998
FILE NAME: SSDB2

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.043
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5035.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5035.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5035.00	0.000	0.00	0.00	0.00
10.00	5035.53	0.607	0.53	2.50	1.41
20.00	5035.77	0.621	0.77	3.10	2.08
30.00	5035.96	0.628	0.96	3.50	2.59
40.00	5036.12	0.632	1.12	3.80	3.01
50.00	5036.26	0.636	1.26	4.05	3.38
60.00	5036.39	0.638	1.39	4.26	3.72
70.00	5036.50	0.640	1.50	4.45	4.02
80.00	5036.60	0.642	1.60	4.61	4.30
90.00	5036.70	0.644	1.70	4.76	4.57
100.00	5036.79	0.645	1.79	4.90	4.81

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	35.00 ft
CREST LENGTH	20.00 ft
OVERTOPPING CREST ELEVATION	5060.00 ft

T DATE: 05-06-1998
/ TIME: 10:50:07

FILE DATE: 05-06-1998
FILE NAME: SSD82

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

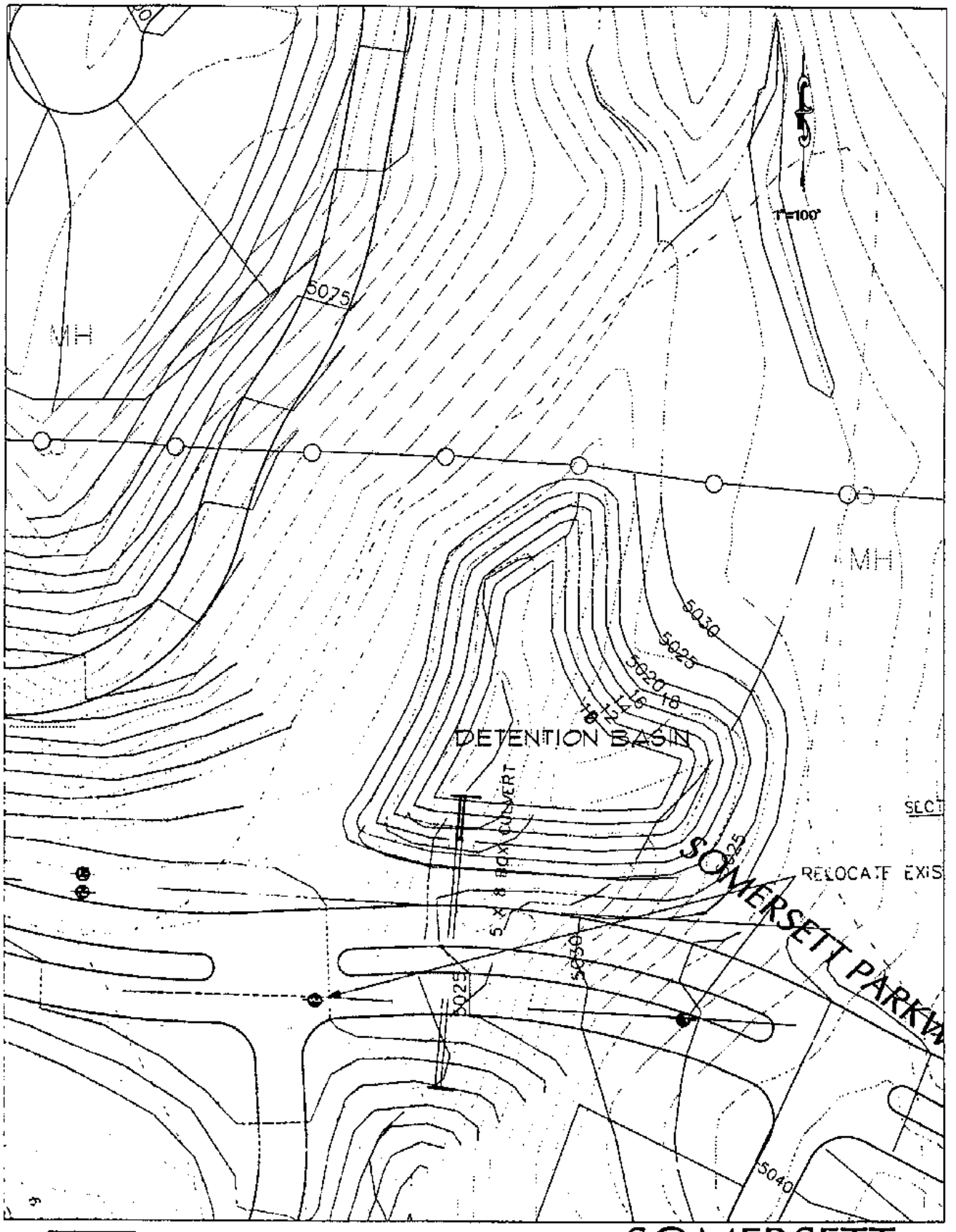
BOTTON WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.043
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5035.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5035.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5035.00	0.000	0.00	0.00	0.00
10.00	5035.53	0.607	0.53	2.50	1.41
20.00	5035.77	0.621	0.77	3.10	2.08
30.00	5035.96	0.628	0.96	3.50	2.59
40.00	5036.12	0.632	1.12	3.80	3.01
50.00	5036.26	0.636	1.26	4.05	3.38
60.00	5036.39	0.638	1.39	4.26	3.72
70.00	5036.50	0.640	1.50	4.45	4.02
80.00	5036.60	0.642	1.60	4.61	4.30
90.00	5036.70	0.644	1.70	4.76	4.57
100.00	5036.79	0.645	1.79	4.90	4.81

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	35.00 ft
CREST LENGTH	20.00 ft
OVERTOPPING CREST ELEVATION	5060.00 ft



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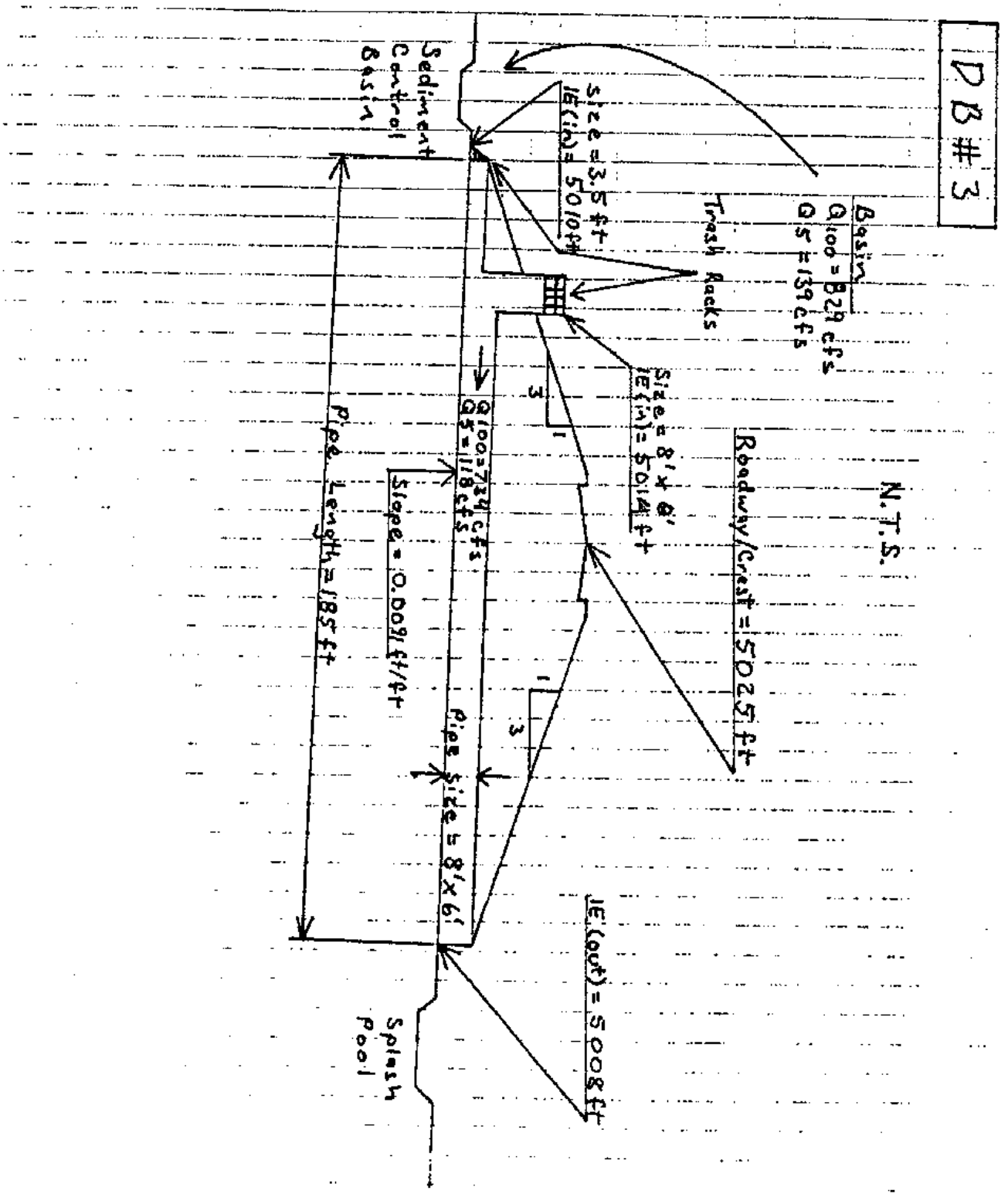
PROPOSED DETENTION #3

WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somersett
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

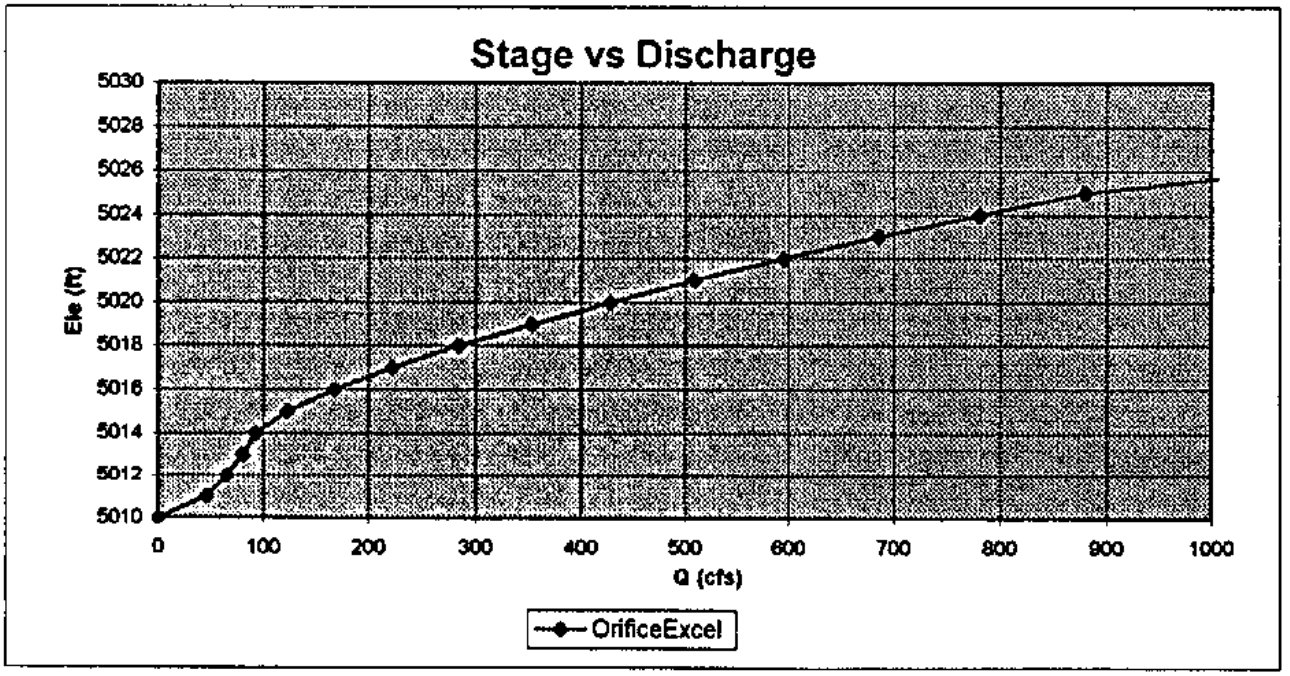
SUBJECT: Typical Detention Basin Details For Culverts With Risers

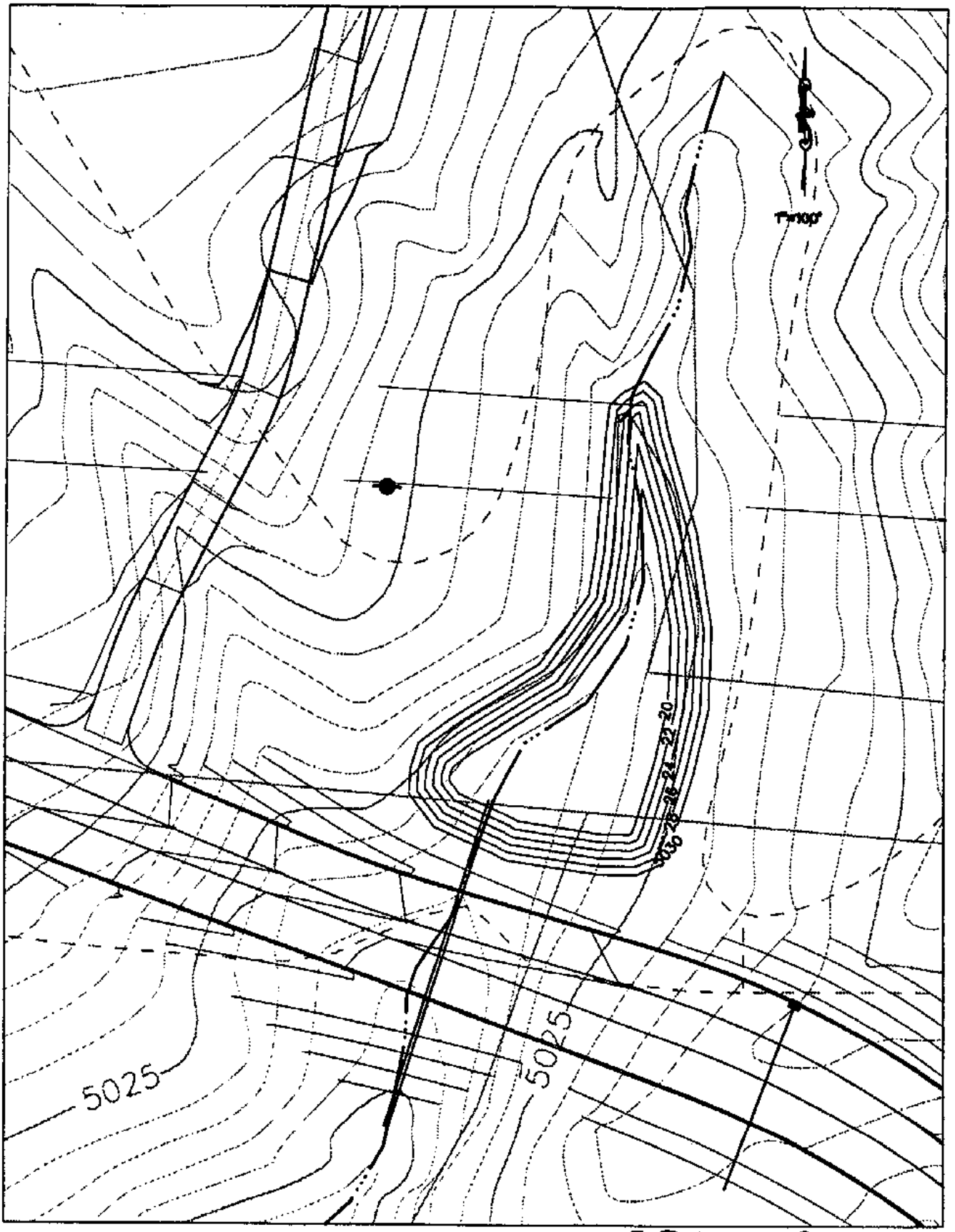


DB 3 Outlet Configuration

Qlow	Qorifice Hi	Qweir Hi	Qwier Road	Q total	Ele
0.0	0.0	0.0	0.0	0.0	5010
46.3	0.0	0.0	0.0	46.3	5011
65.5	0.0	0.0	0.0	65.5	5012
80.2	0.0	0.0	0.0	80.2	5013
92.7	0.0	0.0	0.0	92.7	5014
103.6	308.2	19.2	0.0	122.8	5015
113.5	435.8	54.3	0.0	167.8	5016
122.6	533.7	99.8	0.0	222.3	5017
131.0	616.3	153.6	0.0	284.6	5018
139.0	689.1	214.7	0.0	353.6	5019
146.5	754.8	282.2	0.0	428.7	5020
153.6	815.3	355.6	0.0	509.2	5021
160.5	871.6	434.4	0.0	594.9	5022
167.0	924.5	518.4	0.0	685.4	5023
173.3	974.5	607.2	0.0	780.5	5024
179.4	1022.0	700.5	0.0	879.9	5025
185.3	1067.5	798.1	90.0	1073.4	5026
191.0	1111.1	899.9	254.6	1345.5	5027
196.5	1153.0	1005.8	467.7	1670.0	5028

Size	42	8x8	Low Inlet ele	5010 ft
Area (sqft)	9.621	64	Hi Inlet ele	5015 ft
	RCP	RCB	Roadway ele	5025 ft
Orifice Coef.		0.6		
RCB perimeter		32 ft		
Weir Length		30 lft		





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PROPOSED DETENTION #4

P:\14--\1466\1466-03\HYDRO\SSHYDRO.dwg Thu Apr 30 16:18:39 1998

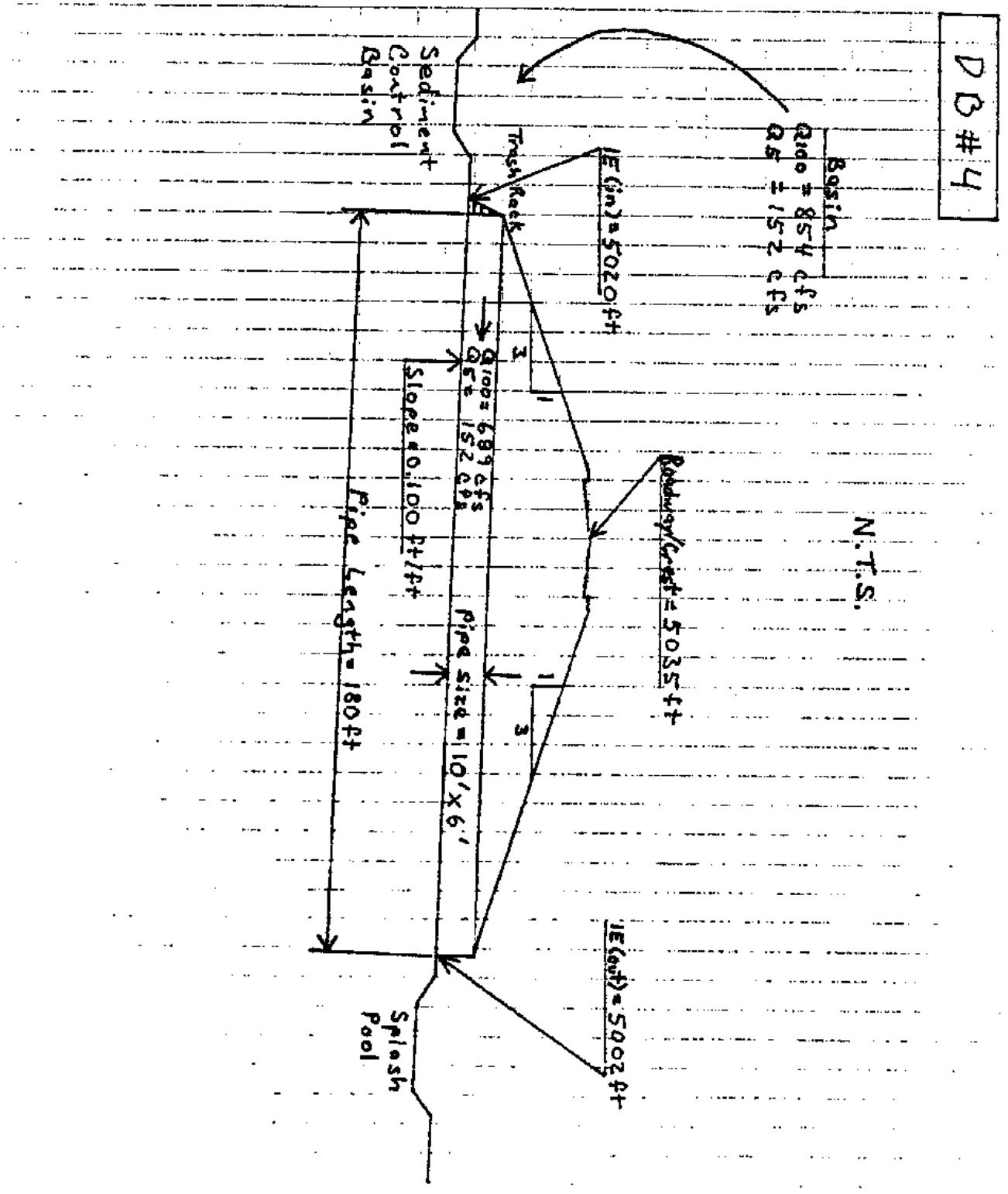
WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #4



CURRENT DATE: 05-06-1998
CURRENT TIME: 11:27:00

FILE DATE: 05-06-1998
FILE NAME: SSDB4

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5020.00	5002.00	180.90	1 RCB	10.00	6.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB4 DATE: 05-06-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5020.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5022.12	90.0	90.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5023.38	180.0	180.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5024.49	270.0	270.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5025.51	360.0	360.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5025.96	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5027.61	540.0	540.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5028.81	630.0	630.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5030.17	720.0	720.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5031.72	810.0	810.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5033.46	900.0	900.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5035.00	972.1	972.1	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB4 DATE: 05-06-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5020.00	0.000	0.00	0.00	0.00
5022.12	0.000	90.00	0.00	0.00
5023.38	0.000	180.00	0.00	0.00
5024.49	0.000	270.00	0.00	0.00
5025.51	0.000	360.00	0.00	0.00
5025.96	0.000	400.00	0.00	0.00
5027.61	0.000	540.00	0.00	0.00
5028.81	0.000	630.00	0.00	0.00
5030.17	0.000	720.00	0.00	0.00
5031.72	0.000	810.00	0.00	0.00
5033.46	0.000	900.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

NT DATE: 05-06-1998 FILE DATE: 05-06-1998
AT TIME: 11:27:00 FILE NAME: SSDB4

PERFORMANCE CURVE FOR CULVERT 1 - 1(10.00 (ft) BY 6.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5020.00	0.00	-18.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
90.00	5022.12	2.12	-14.25	1-S2n	0.41	1.36	0.36	1.64	24.80	5.03
180.00	5023.38	3.38	-13.65	1-S2n	0.71	2.16	0.66	2.30	27.13	6.07
270.00	5024.49	4.49	-12.97	1-S2n	0.91	2.84	0.99	2.79	27.41	6.75
360.00	5025.51	5.51	-12.20	1-S2n	1.12	3.43	1.22	3.18	29.40	7.27
400.00	5025.96	5.96	-11.82	1-S2n	1.21	3.68	1.33	3.34	29.98	7.47
540.00	5027.61	7.61	-10.30	1-S2n	1.46	4.50	1.70	3.83	31.76	8.07
630.00	5028.81	8.81	-9.18	1-S2n	1.62	4.99	1.93	4.10	32.69	8.39
720.00	5030.18	10.18	-7.93	1-S2n	1.78	5.45	2.15	4.35	33.46	8.68
810.00	5031.72	11.72	-6.55	1-S2n	1.93	5.90	2.37	4.58	34.22	8.95
900.00	5033.46	13.46	-5.21	6-FFc	2.07	6.00	2.07	4.80	43.57	9.19

El. inlet face invert 5020.00 ft El. outlet invert 5002.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5020.00 ft
OUTLET STATION	180.00 ft
OUTLET ELEVATION	5002.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.1000
CULVERT LENGTH ALONG SLOPE	180.90 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	10.00 ft
BARREL RISE	6.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (90-45 DEG.)
INLET DEPRESSION	NONE

NT DATE: 05-06-1998
IT TIME: 11:27:00

FILE DATE: 05-06-1998
FILE NAME: SSDB4

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

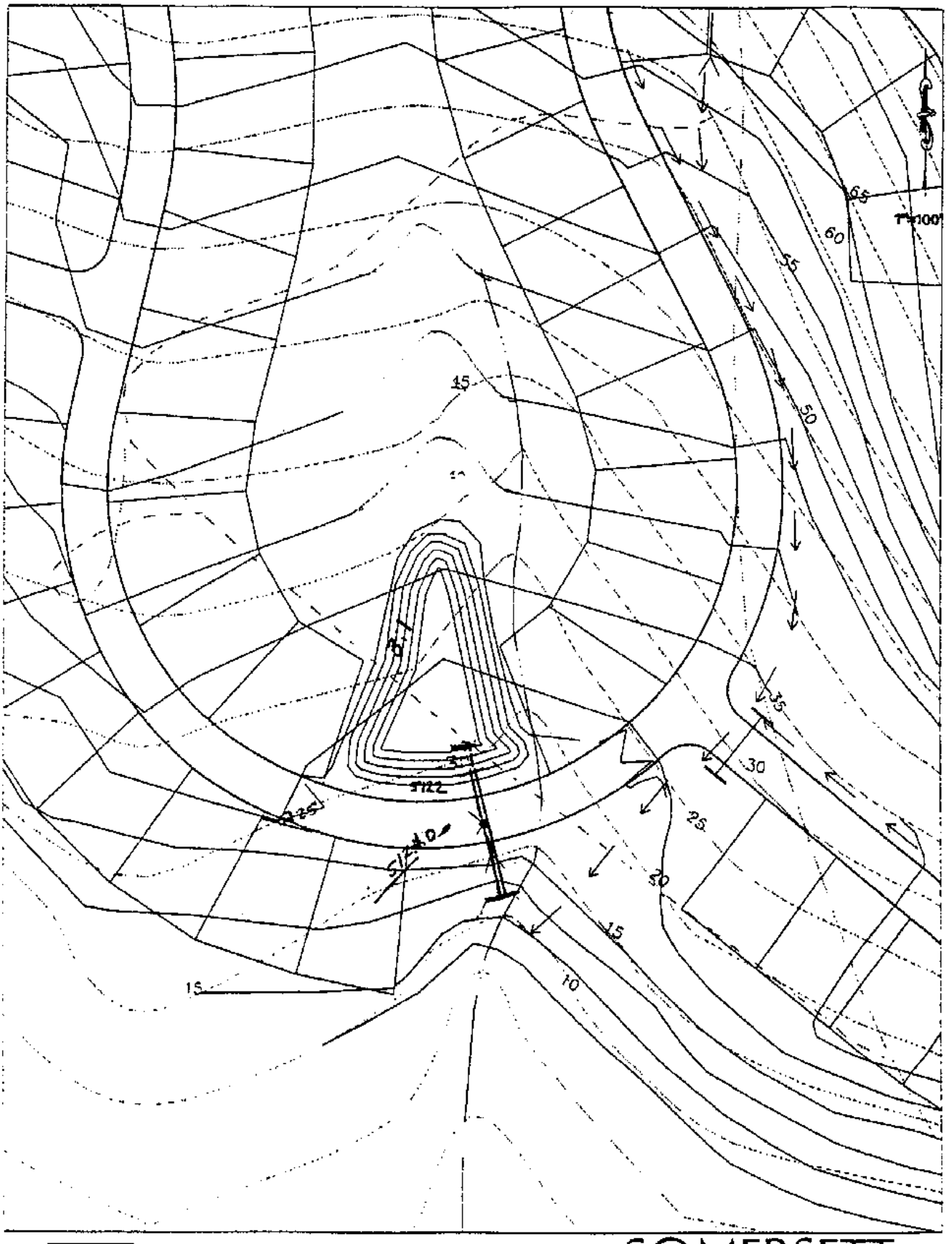
BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.050
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5002.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5002.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5002.00	0.000	0.00	0.00	0.00
90.00	5003.64	0.693	1.64	5.03	5.11
180.00	5004.30	0.705	2.30	6.07	7.18
270.00	5004.79	0.712	2.79	6.75	8.69
360.00	5005.18	0.718	3.18	7.27	9.94
400.00	5005.34	0.720	3.34	7.47	10.43
540.00	5005.83	0.727	3.83	8.07	11.94
630.00	5006.10	0.730	4.10	8.39	12.80
720.00	5006.35	0.733	4.35	8.68	13.58
810.00	5006.58	0.736	4.58	8.95	14.30
900.00	5006.80	0.739	4.80	9.19	14.98

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5035.00 ft



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WATERSHED AREA: E6

PROPOSED DETENTION #5

WRC FORM #68N 10/97R

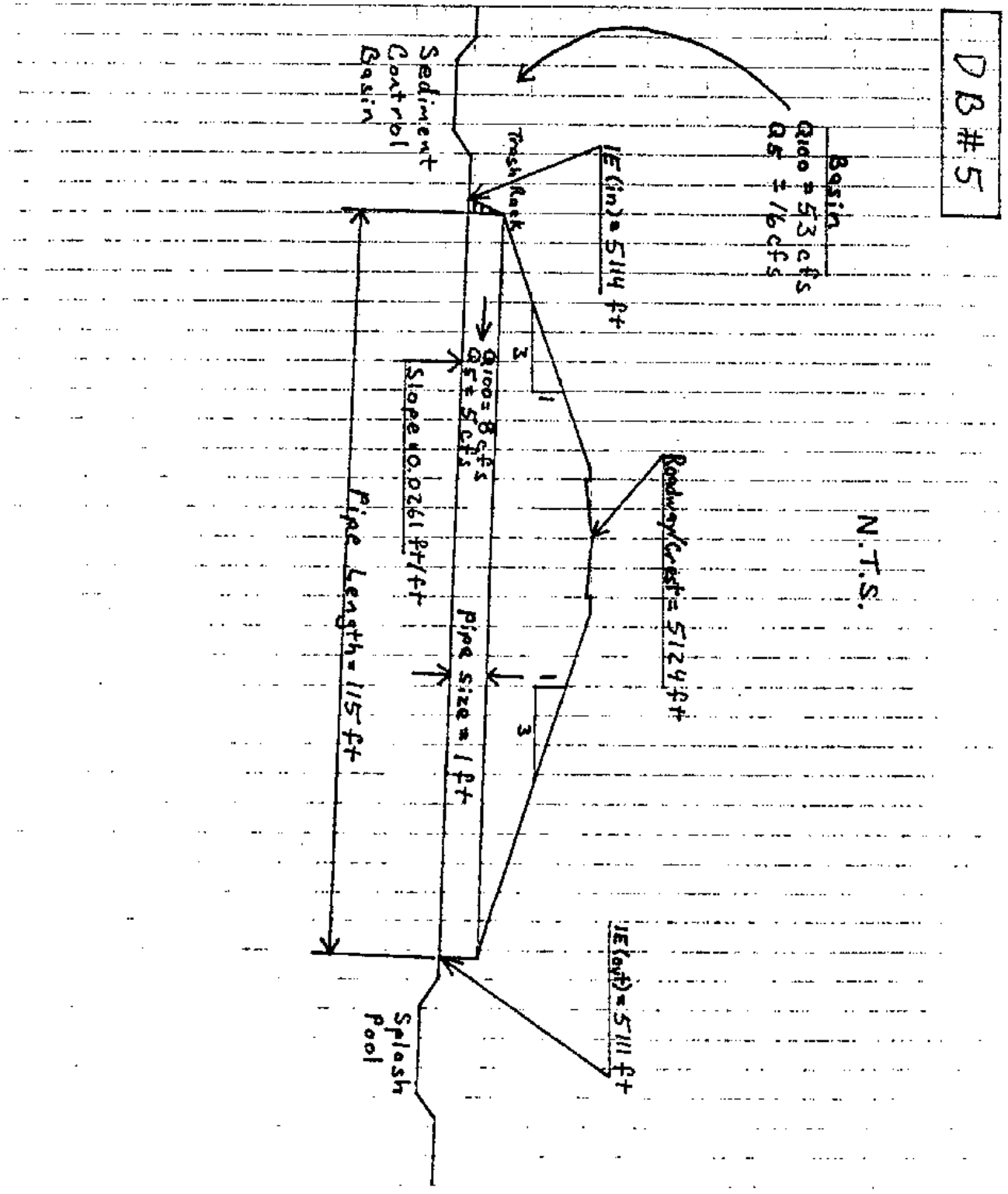
WRC NEVADA, INC

1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #5



CURRENT DATE: 04-23-1998
CURRENT TIME: 14:53:30

FILE DATE: 04-20-1998
FILE NAME: SSDB5

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5114.00	5111.00	115.04	1 RCP	1.00	1.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB5 DATE: 04-20-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5114.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5114.59	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5114.91	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5.24	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5.68	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5116.26	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5117.50	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5119.38	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5121.55	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5124.00	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5124.02	10.0	9.0	0.0	0.0	0.0	0.0	0.0	0.91	15
5124.00	9.0	9.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB5 DATE: 04-20-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5114.00	0.000	0.00	0.00	0.00
5114.59	0.000	1.00	0.00	0.00
5114.91	0.000	2.00	0.00	0.00
5115.24	0.000	3.00	0.00	0.00
5115.68	0.000	4.00	0.00	0.00
5116.26	0.000	5.00	0.00	0.00
5117.50	0.000	6.00	0.00	0.00
5119.38	0.000	7.00	0.00	0.00
5121.55	0.000	8.00	0.00	0.00
5124.00	0.000	9.00	0.00	0.00
5124.02	0.000	10.00	0.09	0.90

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

NT DATE: 04-23-1998
T TIME: 14:53:30

FILE DATE: 04-20-1998
FILE NAME: SSD85

PERFORMANCE CURVE FOR CULVERT 1 - 1(1.00 (ft) BY 1.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5114.00	0.00	-2.00	0-NF	0.00	0.00	0.00	1.00	0.00	0.00
1.00	5114.59	0.59	0.59	1-S1f	0.29	0.42	0.60	1.13	2.03	1.18
2.00	5114.91	0.91	0.91	1-S1f	0.42	0.60	0.80	1.20	2.97	1.52
3.00	5115.24	1.24	1.24	1-S1f	0.54	0.74	0.90	1.25	4.03	1.75
4.00	5115.68	1.68	1.68	1-S1f	0.65	0.84	1.00	1.30	5.09	1.94
5.00	5116.26	2.26	1.89	4-FFt	0.77	0.92	0.77	1.34	7.73	2.09
6.00	5117.50	2.98	3.50	4-FFt	1.00	1.00	1.00	1.38	7.64	2.22
7.00	5119.38	3.81	5.38	4-FFt	1.00	1.00	1.00	1.41	8.91	2.34
8.00	5121.55	4.78	7.55	4-FFt	1.00	1.00	1.00	1.44	10.19	2.45
9.00	5124.00	5.93	10.00	4-FFt	1.00	1.00	1.00	1.48	11.46	2.54
9.00	5124.02	5.93	10.02	4-FFt	1.00	1.00	1.00	1.50	11.46	2.63

El. inlet face invert 5114.00 ft El. outlet invert 5111.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5114.00 ft
OUTLET STATION	115.00 ft
OUTLET ELEVATION	5111.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0261
CULVERT LENGTH ALONG SLOPE	115.04 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	1.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

ENT DATE: 04-23-1998
NT TIME: 14:53:30

FILE DATE: 04-20-1998
FILE NAME: SSDB5

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

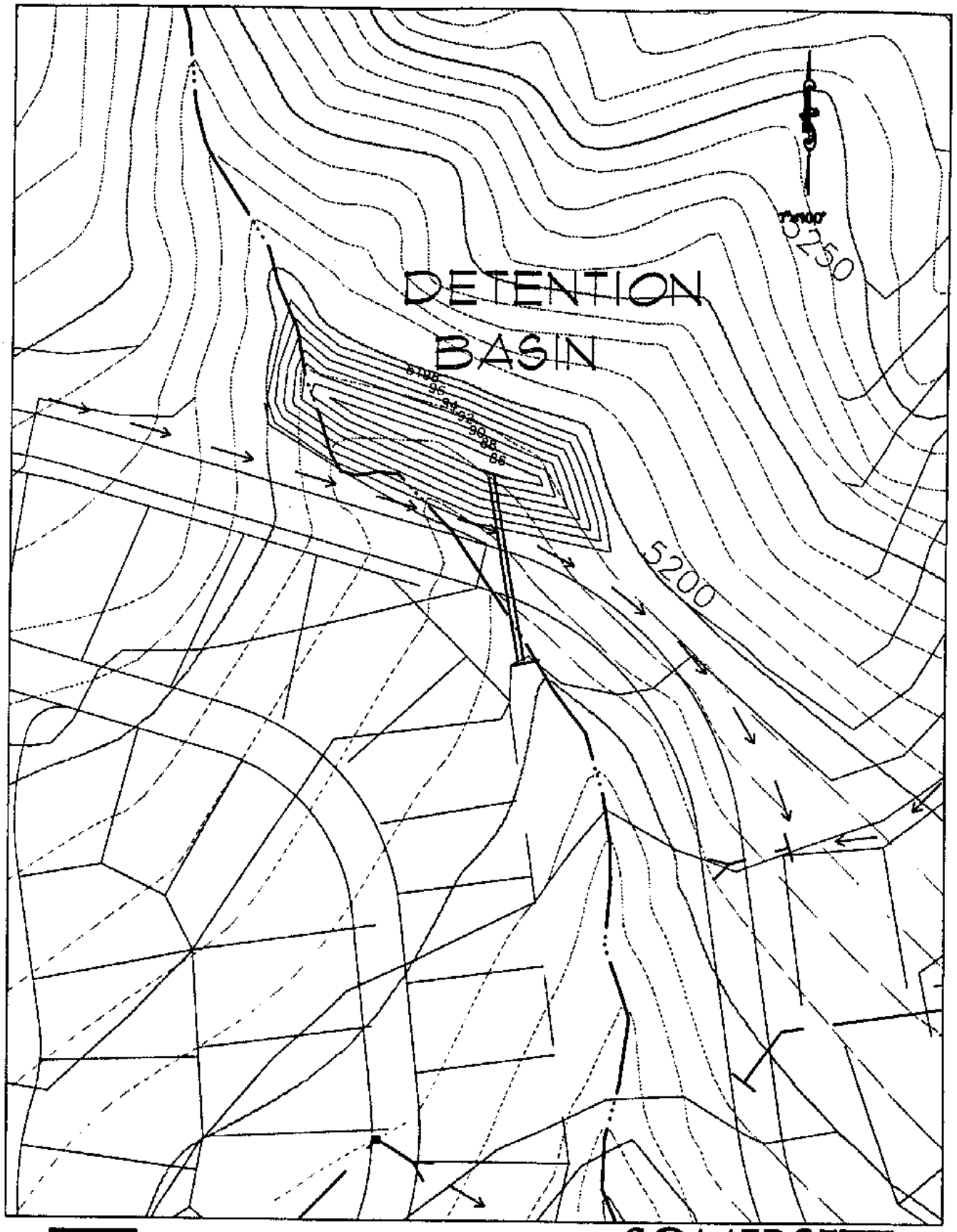
BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.050
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5112.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5111.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5112.00	0.000	0.00	0.00	0.00
1.00	5112.13	0.571	0.13	1.18	0.41
2.00	5112.20	0.599	0.20	1.52	0.62
3.00	5112.25	0.615	0.25	1.75	0.79
4.00	5112.30	0.625	0.30	1.94	0.93
5.00	5112.34	0.632	0.34	2.09	1.06
6.00	5112.38	0.638	0.38	2.22	1.18
7.00	5112.41	0.643	0.41	2.34	1.29
8.00	5112.44	0.646	0.44	2.45	1.39
9.00	5112.48	0.650	0.48	2.54	1.49
10.00	5112.50	0.652	0.50	2.63	1.58

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5124.00 ft



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PROPOSED DETENTION #6

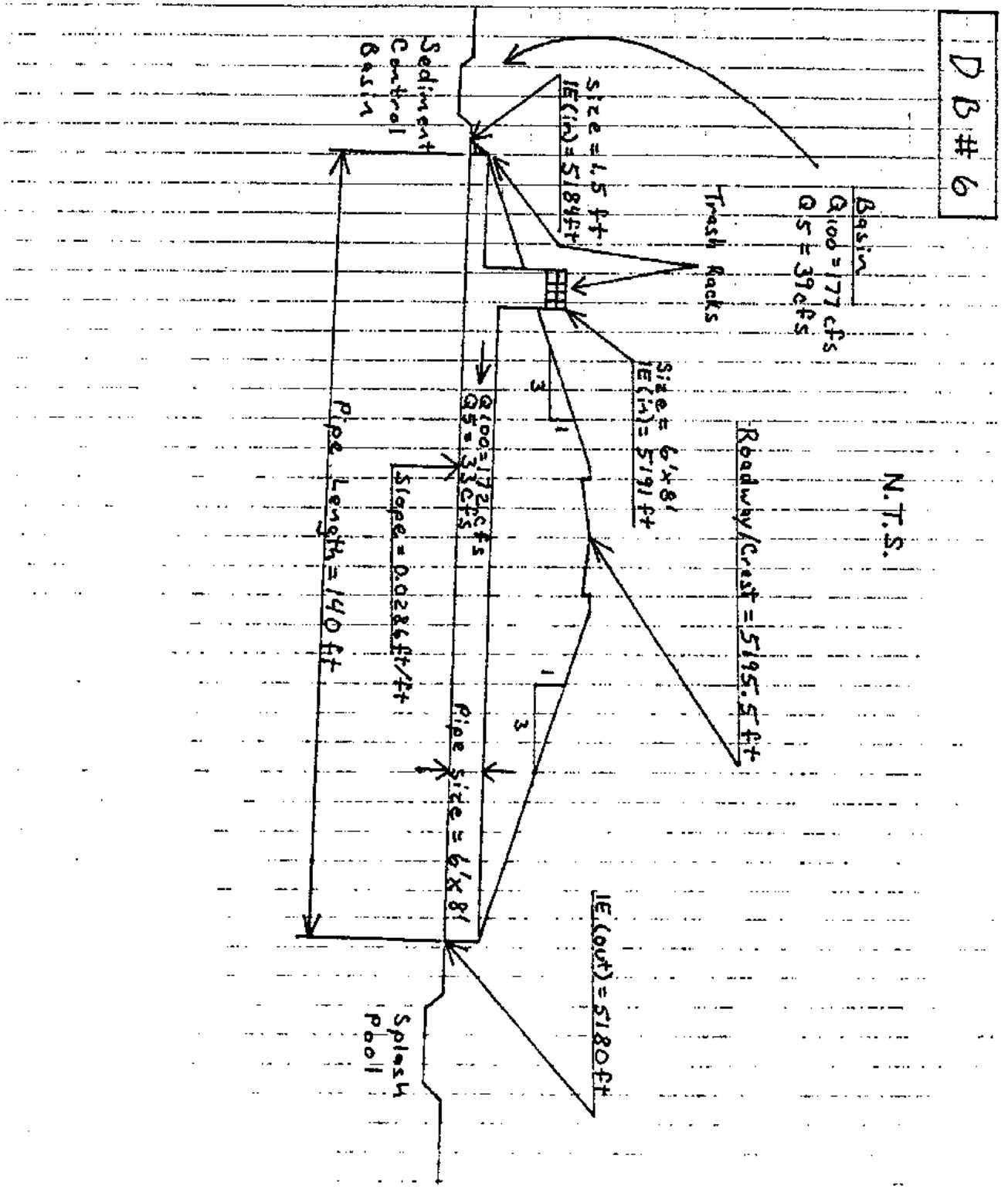
P:\14--\1466\1466-03\HYDRO\SSHYDRO.dwg Thu Apr 30 15:51:31 1998

WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somersett
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

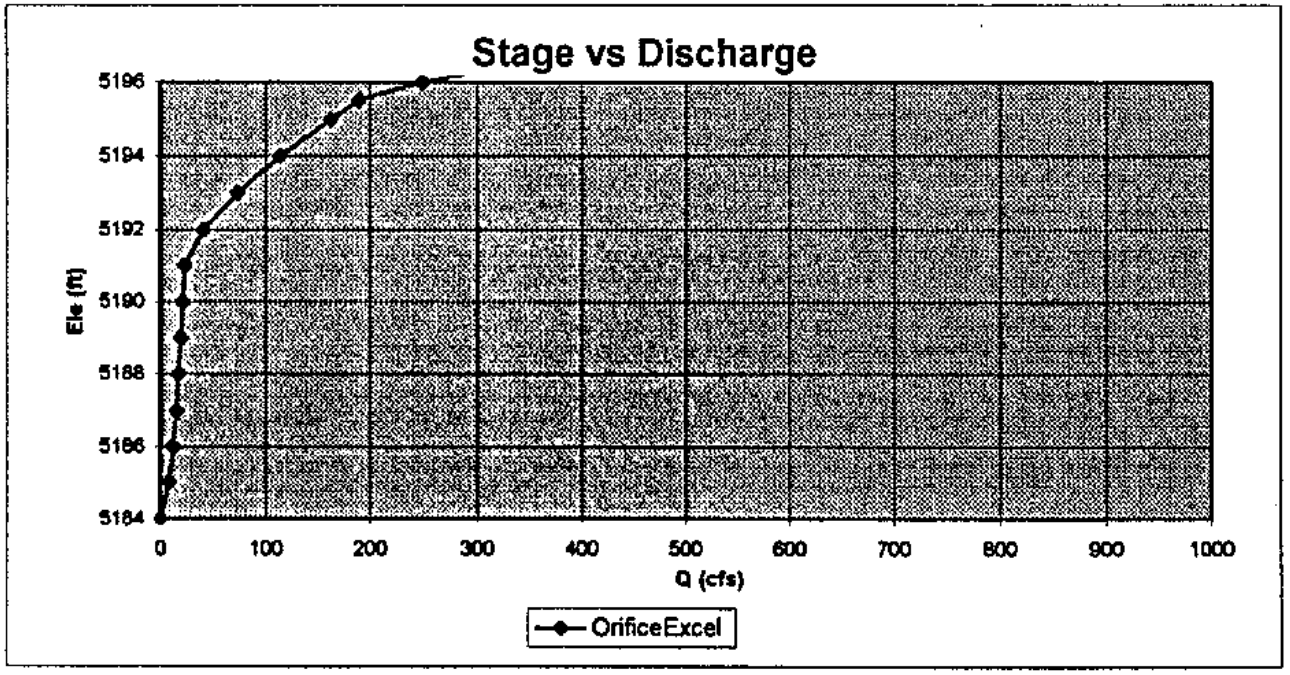
SUBJECT: Typical Detention Basin Details For Culverts With Risers

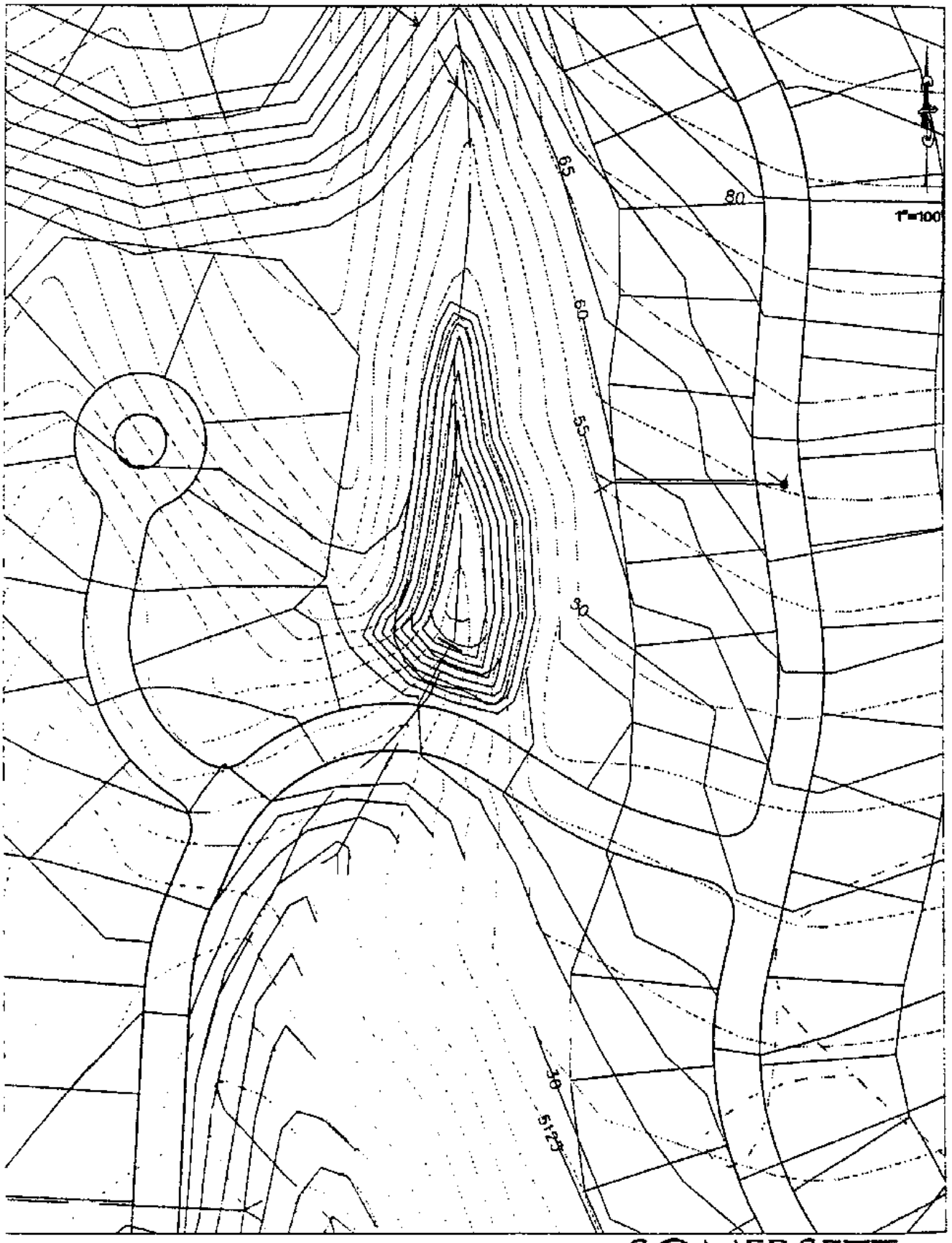


DB 6 Outlet Configuration

Qlow	Qorifice Hi	Qweir Hi	Qwier Road	Q total	Ele
0.0	0.0	0.0	0.0	0.0	5184
8.5	0.0	0.0	0.0	8.5	5185
12.0	0.0	0.0	0.0	12.0	5186
14.7	0.0	0.0	0.0	14.7	5187
17.0	0.0	0.0	0.0	17.0	5188
19.0	0.0	0.0	0.0	19.0	5189
20.8	0.0	0.0	0.0	20.8	5190
22.5	0.0	0.0	0.0	22.5	5191
24.1	231.1	16.8	0.0	40.9	5192
25.5	326.9	47.5	0.0	73.0	5193
26.9	400.3	87.3	0.0	114.2	5194
28.2	462.2	134.4	0.0	162.6	5195
28.9	490.3	160.4	0.0	189.2	5195.5
29.5	516.8	187.8	31.8	249.1	5196
30.7	566.1	246.9	165.3	442.9	5197
31.8	611.5	311.1	355.8	698.7	5198
33.0	653.7	380.1	589.3	1002.4	5199
34.0	693.4	453.6	859.1	1346.8	5200
35.1	730.9	531.3	1160.9	1727.2	5201

Size	18	6x8	Low Inlet ele	5184	ft
Area (sqft)	1.767	48	Hi Inlet ele	5191	ft
	RCP	RCB	Roadway ele	5195.5	ft
Orifice Coef.		0.6			
RCB perimeter		28	ft		
Weir Length		30	ft		





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WATERSHED AREA: E5

PROPOSED DETENTION #8

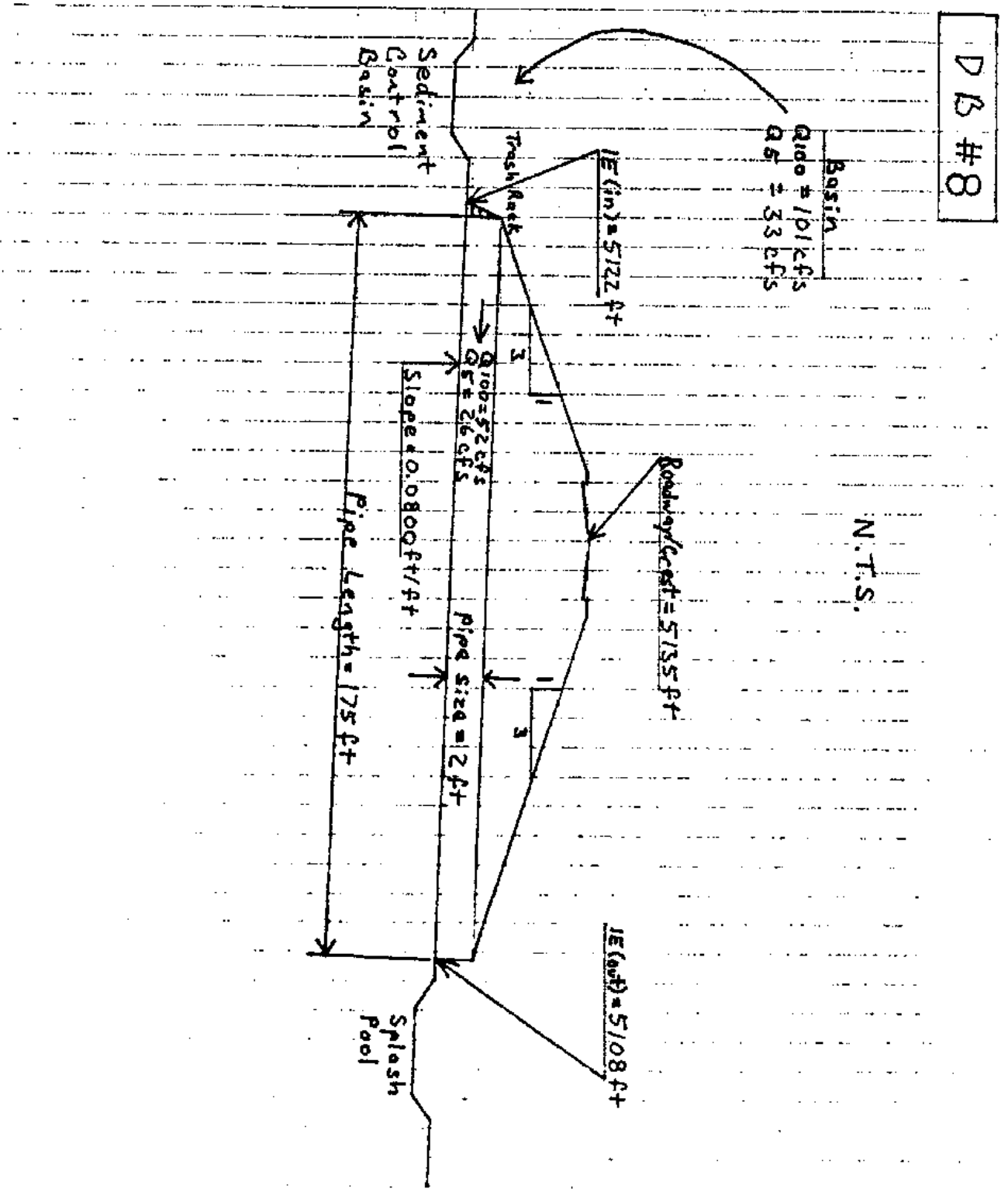
WRC FORM #68N 10/97R

WRC NEVADA, INC.
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #8



CURRENT DATE: 04-23-1998
CURRENT TIME: 15:13:17

FILE DATE: 04-20-1998
FILE NAME: SSDB8

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS / SHAPE / MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5122.00	5108.00	175.56	1 RCP	2.00	2.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB8 DATE: 04-20-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5122.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5123.03	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5123.63	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.00	1
.18	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.00	1
.4.86	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5125.76	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5126.87	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5128.19	35.0	35.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5129.70	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5131.41	45.0	45.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5133.40	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5135.00	53.4	53.4	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB8 DATE: 04-20-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5122.00	0.000	0.00	0.00	0.00
5123.03	0.000	5.00	0.00	0.00
5123.63	0.000	10.00	0.00	0.00
5124.18	0.000	15.00	0.00	0.00
5124.86	0.000	20.00	0.00	0.00
5125.76	0.000	25.00	0.00	0.00
5126.87	0.000	30.00	0.00	0.00
5128.19	0.000	35.00	0.00	0.00
5129.70	0.000	40.00	0.00	0.00
5131.41	0.000	45.00	0.00	0.00
5133.40	0.000	50.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

RENT DATE: 04-23-1998
NT TIME: 15:13:17

FILE DATE: 04-20-1998
FILE NAME: SSDB8

PERFORMANCE CURVE FOR CULVERT 1 - 1(2.00 (ft) BY 2.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5122.00	0.00	-14.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
5.00	5123.03	1.03	-12.45	1-S2n	0.39	0.79	0.29	0.30	17.51	2.44
10.00	5123.63	1.63	-11.80	1-S2n	0.55	1.13	0.43	0.44	20.56	3.09
15.00	5124.18	2.18	-10.88	1-S2n	0.68	1.40	0.60	0.56	19.11	3.52
20.00	5124.86	2.86	-9.67	1-S2n	0.80	1.60	0.70	0.65	20.16	3.85
25.00	5125.76	3.76	-8.18	1-S2n	0.90	1.75	0.85	0.74	19.58	4.12
30.00	5126.87	4.87	-6.37	1-S2n	1.00	1.90	0.90	0.82	21.88	4.35
35.00	5128.19	6.19	-4.26	6-FFc	1.10	2.00	2.00	0.89	11.14	4.56
40.00	5129.70	7.70	-1.89	6-FFc	1.20	2.00	2.00	0.95	12.73	4.74
45.00	5131.41	9.41	0.79	6-FFc	1.30	2.00	2.00	1.01	14.32	4.91
50.00	5133.40	11.40	3.79	6-FFc	1.40	2.00	2.00	1.07	15.92	5.06

El. inlet face invert 5122.00 ft El. outlet invert 5108.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5122.00 ft
OUTLET STATION	175.00 ft
OUTLET ELEVATION	5108.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0800
CULVERT LENGTH ALONG SLOPE	175.56 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	2.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 04-23-1998
CURRENT TIME: 15:13:17

FILE DATE: 04-20-1998
FILE NAME: SSDB8

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

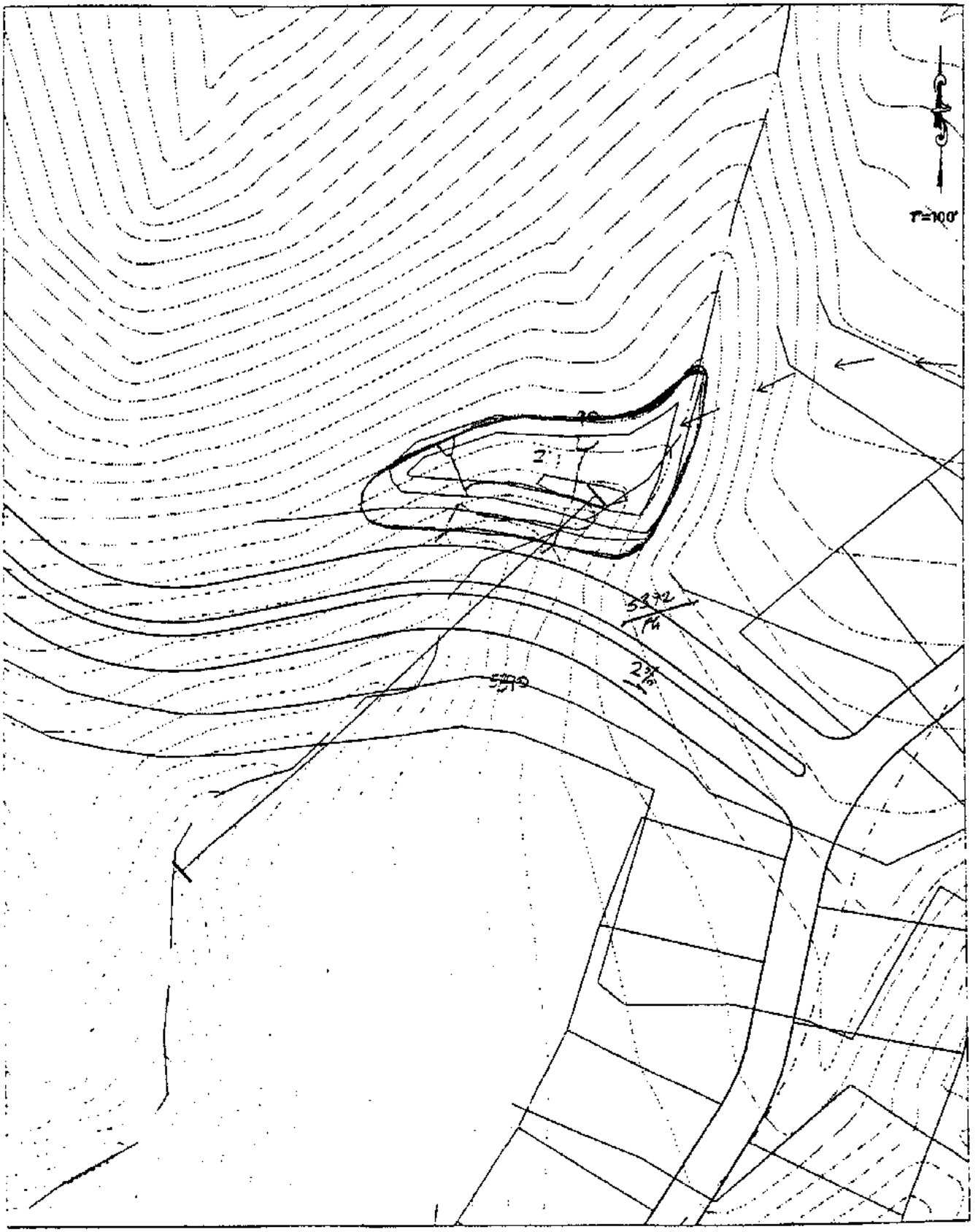
BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.080
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5108.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5108.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5108.00	0.000	0.00	0.00	0.00
5.00	5108.30	0.790	0.30	2.44	1.48
10.00	5108.44	0.817	0.44	3.09	2.21
15.00	5108.56	0.831	0.56	3.52	2.78
20.00	5108.65	0.839	0.65	3.85	3.26
25.00	5108.74	0.845	0.74	4.12	3.69
30.00	5108.82	0.849	0.82	4.35	4.07
35.00	5108.89	0.853	0.89	4.56	4.43
40.00	5108.95	0.856	0.95	4.74	4.76
45.00	5109.01	0.859	1.01	4.91	5.06
50.00	5109.07	0.861	1.07	5.06	5.35

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5135.00 ft



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WATERSHED AREA: A9

PROPOSED DETENTION #9

WRC FORM #68N 10/97R

WRC NEVADA, INC

1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___

JOB NAME: Somerset

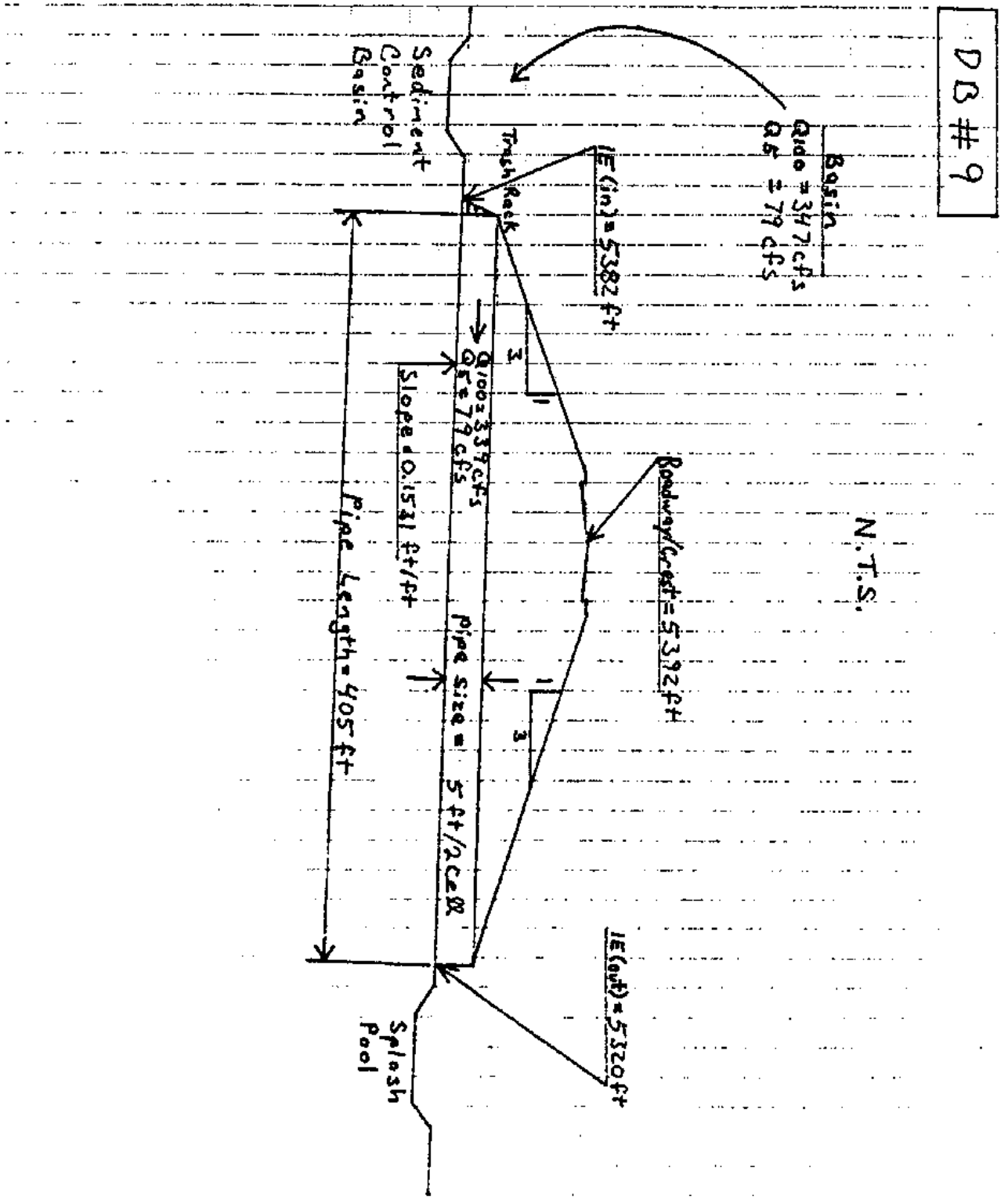
CALC. BY: ___ DATE 4/24/98

CHKD. BY: ___ DATE __/__/__

REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #9



CURRENT DATE: 05-06-1998
CURRENT TIME: 09:06:06

FILE DATE: 05-06-1998
FILE NAME: SSDB9

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5382.00	5320.00	409.72	2 RCP	5.00	5.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB9 DATE: 05-06-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5382.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5383.63	60.0	60.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5384.76	120.0	120.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5385.64	180.0	180.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5386.46	240.0	240.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5387.32	300.0	300.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5388.31	360.0	360.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5389.48	420.0	420.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5390.86	480.0	480.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5392.10	540.0	527.7	0.0	0.0	0.0	0.0	0.0	9.20	7
5392.35	600.0	536.5	0.0	0.0	0.0	0.0	0.0	61.35	4
5392.00	524.0	524.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB9 DATE: 05-06-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5382.00	0.000	0.00	0.00	0.00
5383.63	0.000	60.00	0.00	0.00
5384.76	0.000	120.00	0.00	0.00
5385.64	0.000	180.00	0.00	0.00
5386.46	0.000	240.00	0.00	0.00
5387.32	0.000	300.00	0.00	0.00
5388.31	0.000	360.00	0.00	0.00
5389.48	0.000	420.00	0.00	0.00
5390.86	0.000	480.00	0.00	0.00
5392.10	-0.009	540.00	3.10	0.57
5392.35	-0.005	600.00	2.18	0.36

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

ENT DATE: 05-06-1998
ENT TIME: 09:06:06

FILE DATE: 05-06-1998
FILE NAME: SSDB9

PERFORMANCE CURVE FOR CULVERT 1 - 2(5.00 (ft) BY 5.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5382.00	0.00	-62.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
60.00	5383.63	1.63	-58.62	1-S2n	0.58	1.52	0.52	1.11	29.39	5.77
120.00	5384.76	2.76	-57.95	1-S2n	0.82	2.17	0.77	1.59	30.46	7.01
180.00	5385.64	3.64	-57.10	1-S2n	1.03	2.68	0.98	1.94	32.89	7.82
240.00	5386.46	4.46	-56.07	1-S2n	1.18	3.12	1.12	2.24	36.12	8.44
300.00	5387.32	5.32	-54.82	1-S2n	1.33	3.51	1.35	2.49	34.95	8.96
360.00	5388.31	6.31	-53.37	1-S2n	1.47	3.83	1.48	2.71	36.81	9.40
420.00	5389.48	7.48	-51.71	1-S2n	1.59	4.10	1.50	2.91	42.24	9.78
480.00	5390.86	8.86	-49.84	1-S2n	1.70	4.33	1.63	3.10	43.15	10.13
527.70	5392.10	10.10	-48.19	1-S2n	1.79	4.51	1.83	3.27	40.56	10.44
536.46	5392.34	10.34	-47.87	1-S2n	1.81	4.54	1.74	3.43	44.05	10.73

El. inlet face invert 5382.00 ft El. outlet invert 5320.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5382.00 ft
OUTLET STATION	405.00 ft
OUTLET ELEVATION	5320.00 ft
NUMBER OF BARRELS	2
SLOPE (V/H)	0.1531
CULVERT LENGTH ALONG SLOPE	409.72 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	5.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

NT DATE: 05-06-1998
NT TIME: 09:06:06

FILE DATE: 05-06-1998
FILE NAME: SSDB9

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

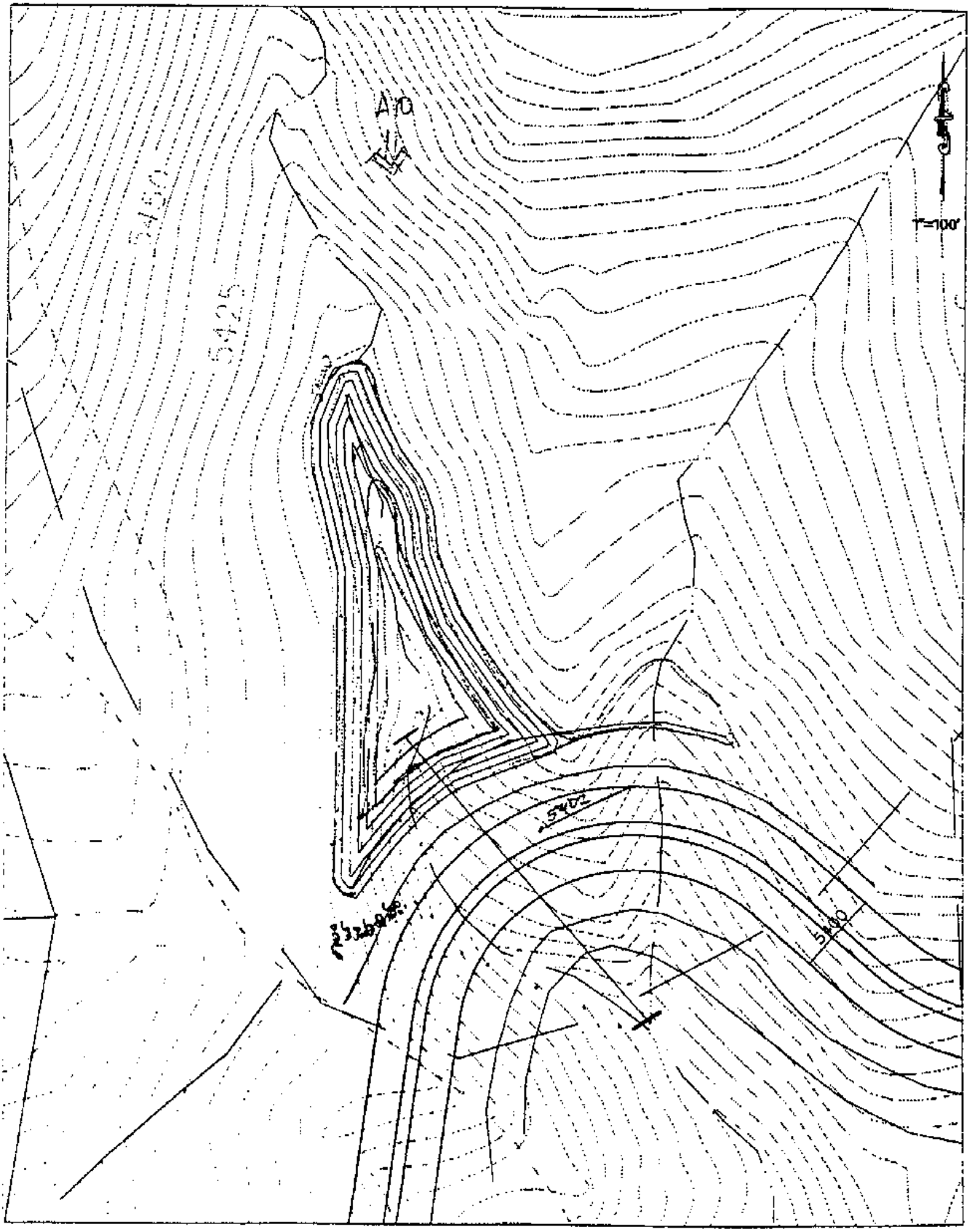
BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.100
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5320.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5320.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5320.00	0.000	0.00	0.00	0.00
60.00	5321.11	0.964	1.11	5.77	6.95
120.00	5321.59	0.979	1.59	7.01	9.92
180.00	5321.94	0.988	1.94	7.82	12.13
240.00	5322.24	0.995	2.24	8.44	13.95
300.00	5322.49	1.001	2.49	8.96	15.52
360.00	5322.71	1.006	2.71	9.40	16.92
420.00	5322.91	1.010	2.91	9.78	18.18
480.00	5323.10	1.014	3.10	10.13	19.34
540.00	5323.27	1.017	3.27	10.44	20.41
600.00	5323.43	1.020	3.43	10.73	21.42

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5392.00 ft



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SOMERSETT

WATERSHED AREA: A10

PROPOSED DETENTION #1C

WRC FORM #68N 10/97R

WRC NEVADA, INC

1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___

JOB NAME: Somerset

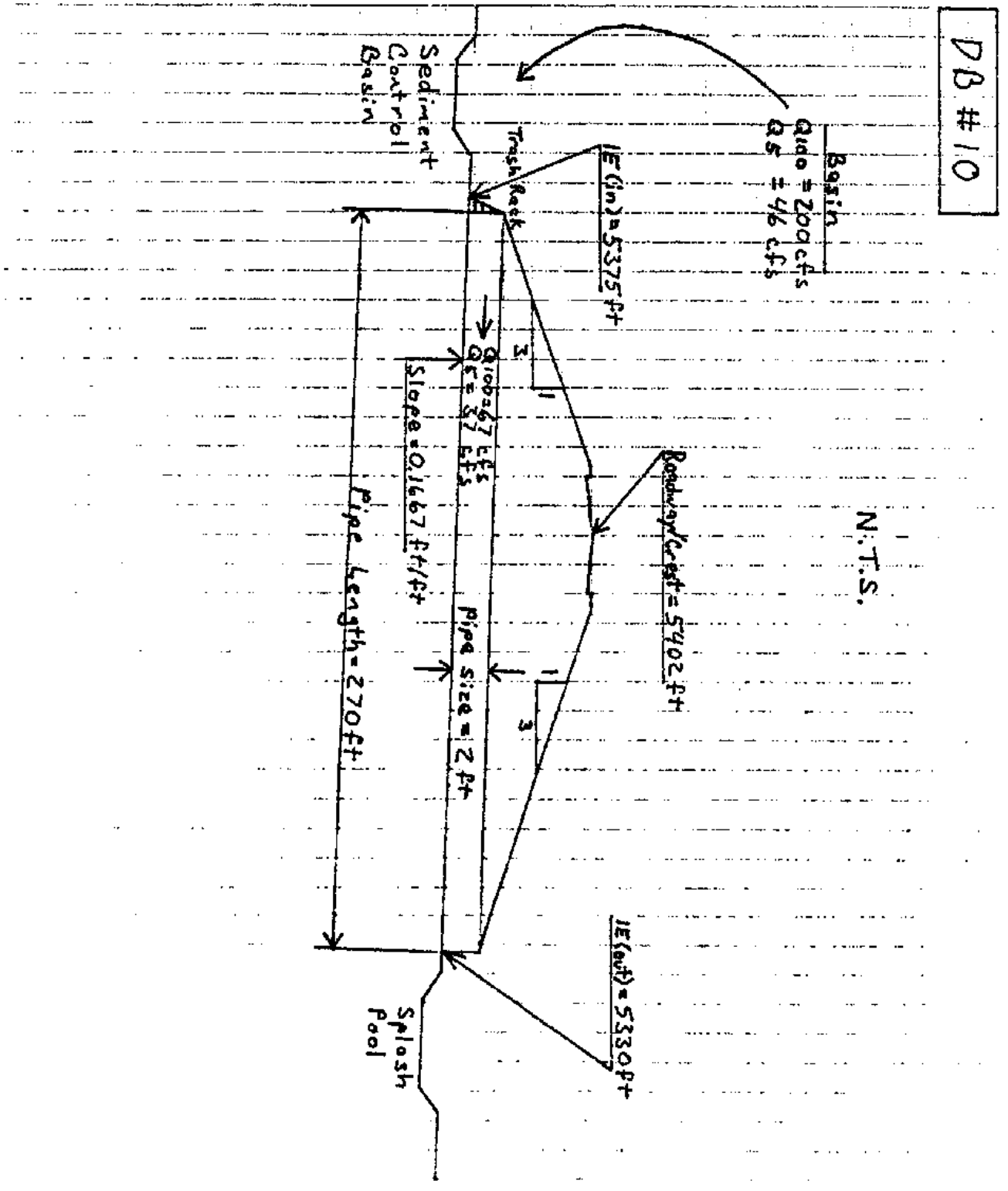
CALC. BY: ___ DATE 4/24/98

CHKD. BY: ___ DATE __/__/__

REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #10



CURRENT DATE: 04-23-1998
CURRENT TIME: 14:50:40

FILE DATE: 04-21-1998
FILE NAME: SSDB10

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS / SHAPE / MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5375.00	5330.00	273.72	1 RCP	2.00	2.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB10 DATE: 04-21-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5402.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
5402.12	12.0	0.0	0.0	0.0	0.0	0.0	0.0	12.00	6
5402.19	24.0	0.0	0.0	0.0	0.0	0.0	0.0	24.00	4
2.24	36.0	0.0	0.0	0.0	0.0	0.0	0.0	36.00	3
.02.29	48.0	0.0	0.0	0.0	0.0	0.0	0.0	48.00	2
5402.00	60.0	0.0	0.0	0.0	0.0	0.0	0.0	60.00	2
5402.00	72.0	0.0	0.0	0.0	0.0	0.0	0.0	72.00	2
5402.42	84.0	0.0	0.0	0.0	0.0	0.0	0.0	84.00	1
5402.46	96.0	0.0	0.0	0.0	0.0	0.0	0.0	96.00	1
5402.50	108.0	0.0	0.0	0.0	0.0	0.0	0.0	108.00	3
5402.54	120.0	0.0	0.0	0.0	0.0	0.0	0.0	120.00	2
5402.00	69.4	69.4	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB10 DATE: 04-21-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5402.00	0.000	0.00	0.00	0.00
5402.12	-0.001	12.00	0.08	0.67
5402.19	-0.001	24.00	0.07	0.29
5402.24	-0.002	36.00	0.13	0.36
5402.29	-0.007	48.00	0.29	0.60
5402.00	-0.005	60.00	0.09	0.15
5402.00	-0.003	72.00	0.09	0.13
5402.42	-0.001	84.00	0.52	0.62
5402.46	-0.001	96.00	0.42	0.44
5402.50	-0.005	108.00	0.35	0.32
5402.54	-0.006	120.00	0.30	0.25

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

NT DATE: 04-23-1998 FILE DATE: 04-21-1998
NT TIME: 14:50:40 FILE NAME: SSD810

PERFORMANCE CURVE FOR CULVERT 1 - 1(2.00 (ft) BY 2.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5375.00	0.00	-45.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
12.00	5376.75	1.75	-42.15	1-S2n	0.50	1.24	0.44	0.43	23.71	3.82
24.00	5378.47	3.47	-38.23	1-S2n	0.72	1.72	0.62	0.64	28.85	4.77
36.00	5381.39	6.39	-31.95	6-FFc	0.90	2.00	2.00	0.79	11.46	5.39
48.00	5385.47	10.47	-23.35	6-FFc	1.07	2.00	2.00	0.93	15.28	5.88
60.00	5391.99	16.99	-12.30	6-FFc	1.23	2.00	2.00	1.05	19.10	6.27
72.00	5406.13	31.13	1.21	6-FFc	1.40	2.00	2.00	1.15	22.92	6.61
84.00	5439.56	64.56	17.17	6-FFc	1.60	2.00	2.00	1.25	26.74	6.90
96.00	5513.04	138.03	35.60	6-FFc	2.00	2.00	2.00	1.34	30.56	7.17
108.00	5658.94	283.94	56.47	6-FFc	2.00	2.00	2.00	1.42	34.38	7.41
120.00	5923.92	548.92	79.81	6-FFc	2.00	2.00	2.00	1.50	38.20	7.63

El. inlet face invert 5375.00 ft El. outlet invert 5330.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	5375.00 ft
OUTLET STATION	270.00 ft
OUTLET ELEVATION	5330.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.1667
CULVERT LENGTH ALONG SLOPE	273.72 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	2.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

RENT DATE: 04-23-1998
NT TIME: 14:50:40

FILE DATE: 04-21-1998
FILE NAME: SSDB10

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

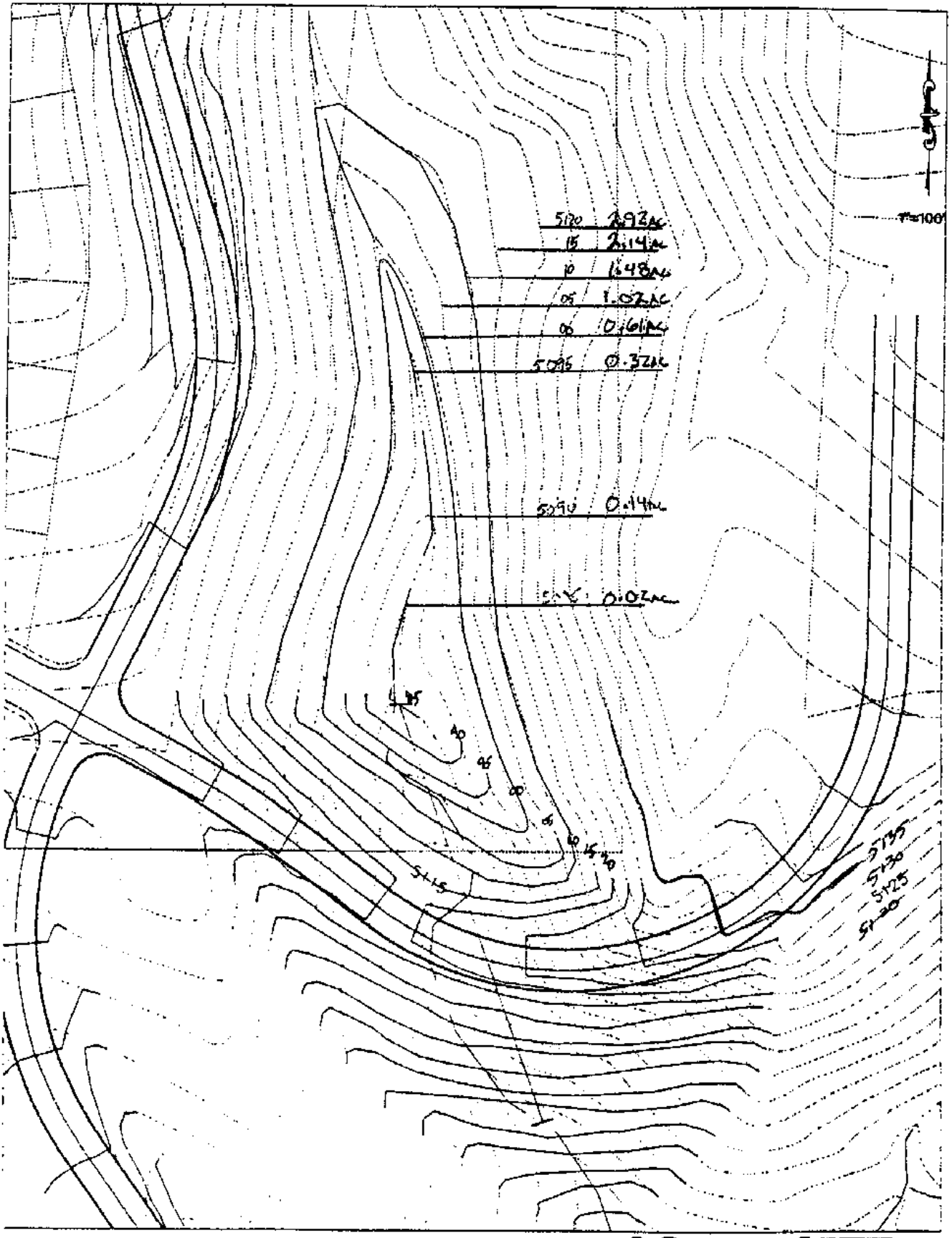
BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.165
MANNING'S n (.01-0.1)	0.080
CHANNEL INVERT ELEVATION	5330.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5330.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAN CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5330.00	0.000	0.00	0.00	0.00
12.00	5330.43	1.025	0.43	3.82	4.44
24.00	5330.64	1.053	0.64	4.77	6.55
36.00	5330.79	1.066	0.79	5.39	8.19
48.00	5330.93	1.074	0.93	5.88	9.57
60.00	5331.05	1.080	1.05	6.27	10.78
72.00	5331.15	1.085	1.15	6.61	11.86
84.00	5331.25	1.089	1.25	6.90	12.85
96.00	5331.34	1.092	1.34	7.17	13.77
108.00	5331.42	1.095	1.42	7.41	14.63
120.00	5331.50	1.098	1.50	7.63	15.44

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5402.00 ft



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SOMERSETT

WATERSHED AREA: C4b

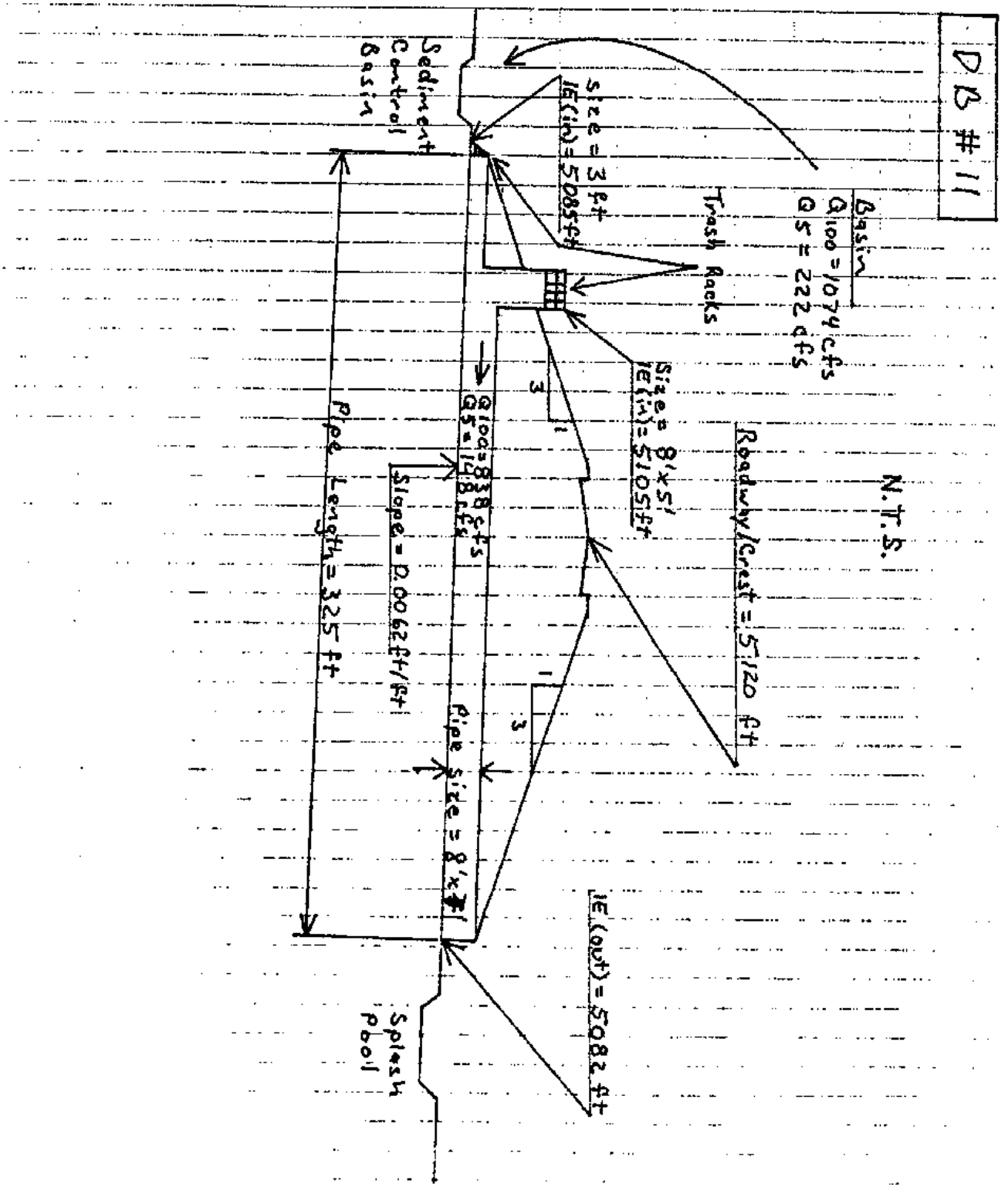
PROPOSED DETENTION #11

WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somersett
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

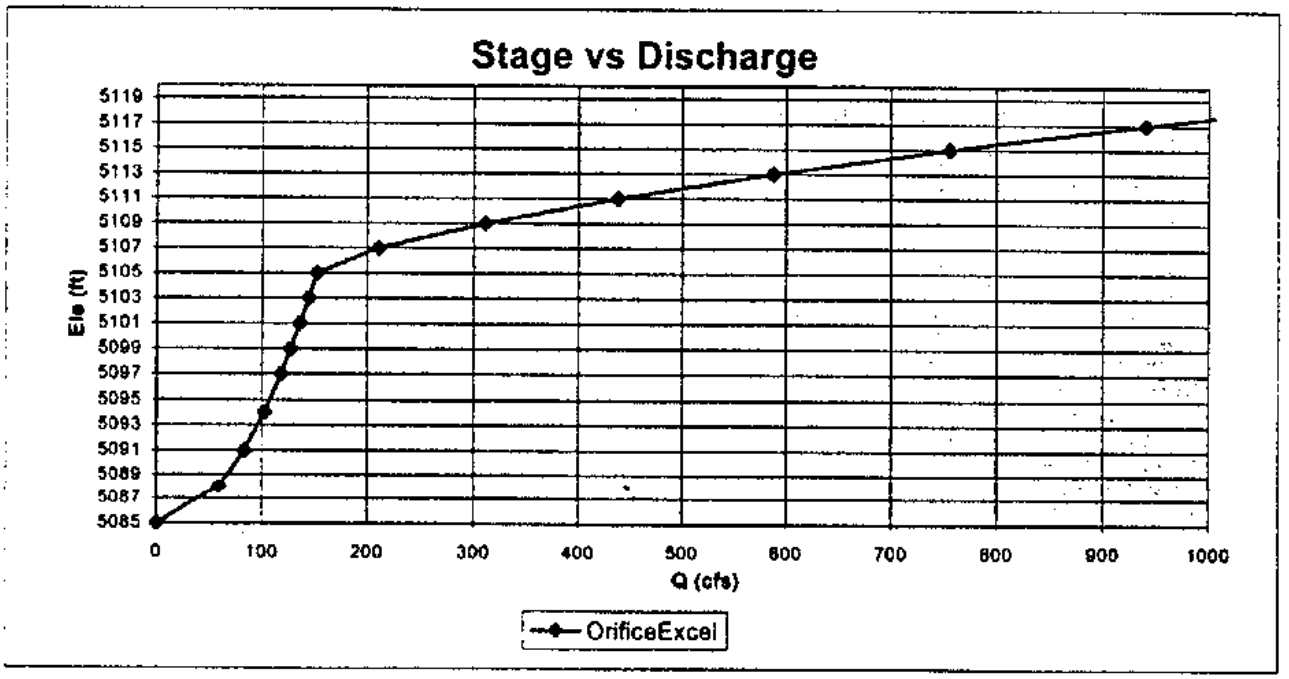
SUBJECT: Typical Detention Basin Details For Culverts With Risers

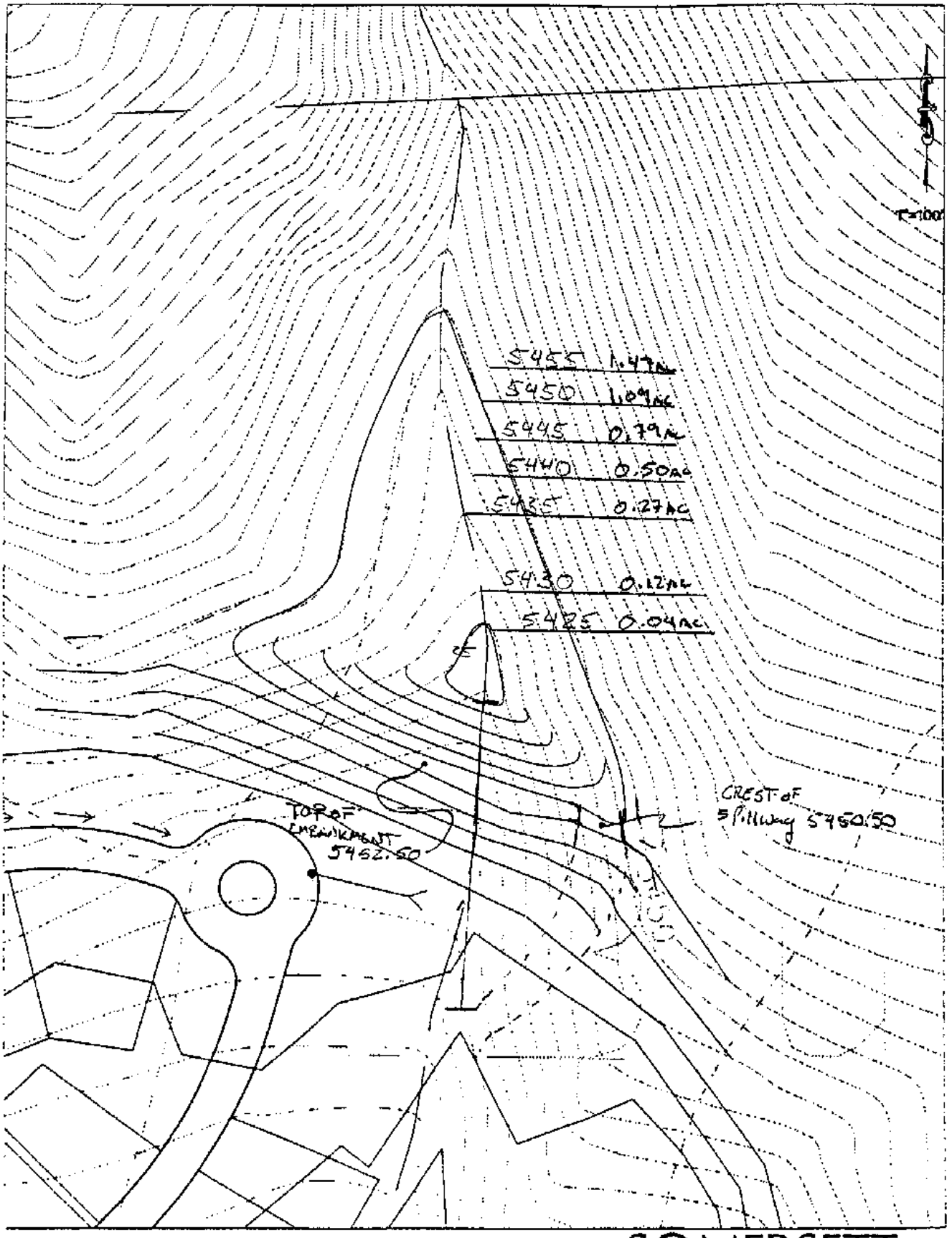


DB 11 Outlet Configuration

Qlow	Qorifice Hi	Qweir Hi	Qwier Road	Q total	Ele
0.0	0.0	0.0	0.0	0.0	5085
59.0	0.0	0.0	0.0	59.0	5088
83.4	0.0	0.0	0.0	83.4	5091
102.1	0.0	0.0	0.0	102.1	5094
117.9	0.0	0.0	0.0	117.9	5097
127.3	0.0	0.0	0.0	127.3	5099
136.1	0.0	0.0	0.0	136.1	5101
144.4	0.0	0.0	0.0	144.4	5103
152.2	0.0	0.0	0.0	152.2	5105
159.6	381.3	50.9	0.0	210.6	5107
166.7	539.3	144.0	0.0	310.7	5109
173.5	660.5	264.5	0.0	438.1	5111
180.1	762.7	407.3	0.0	587.4	5113
186.4	852.7	569.2	0.0	755.6	5115
192.5	934.1	748.2	0.0	940.8	5117
195.5	972.2	843.7	0.0	1039.2	5118
201.4	1044.3	1045.7	0.0	1245.7	5120
207.0	1111.7	1261.7	254.6	1573.3	5122
212.5	1175.3	1490.7	720.0	2107.9	5124

Size	36	8x7	Low Inlet ele	5085 ft
Area (sqft)	7.069	56	Hi Inlet ele	5105 ft
	RCP	RCB	Roadway ele	5120 ft
Orifice Coef.		0.6		
RCB perimeter		30 ft		
Weir Length		30 lft		





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WATERSHED AREA: A6a

PROPOSED DETENTION #12

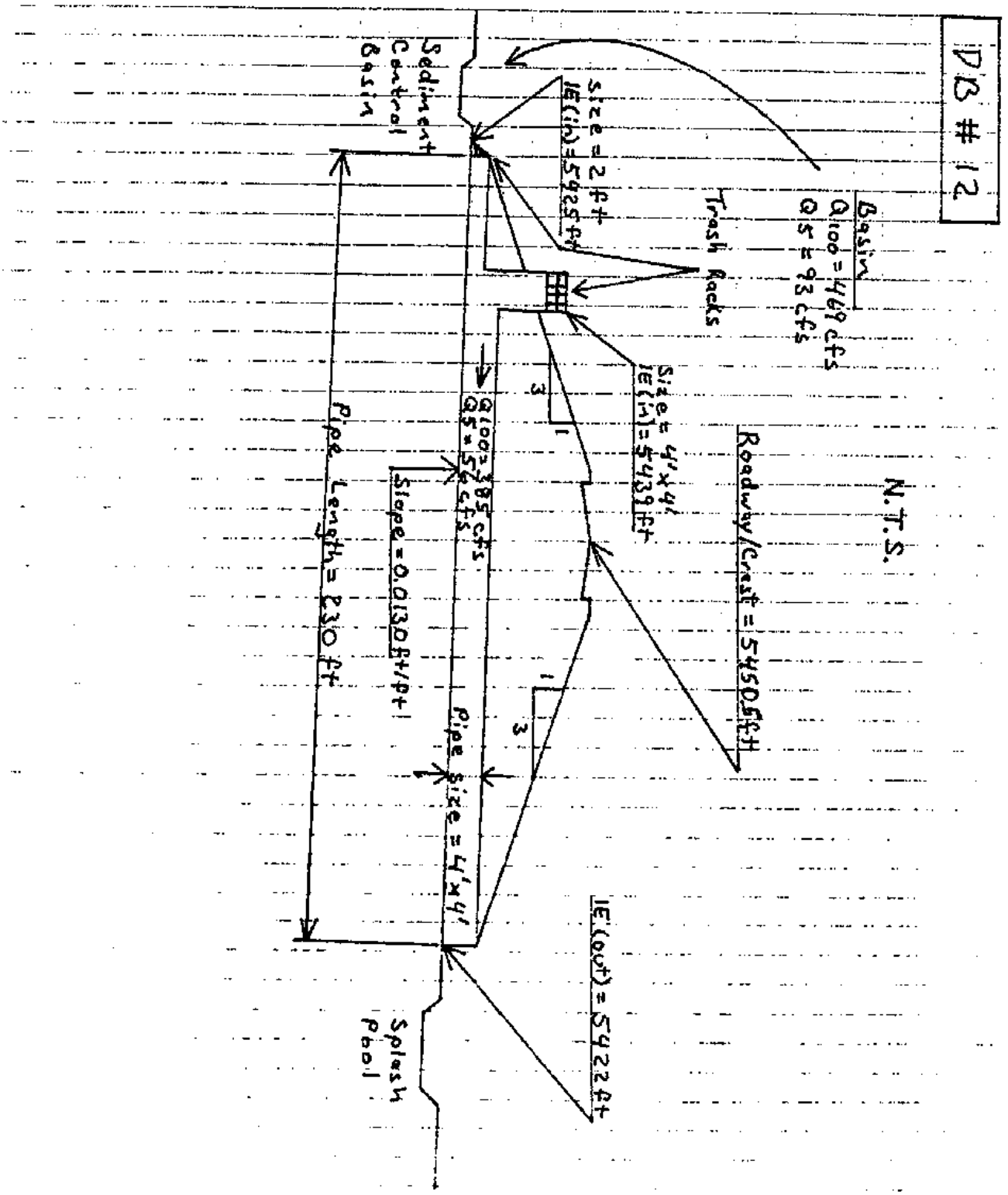
WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somersett
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Culverts With Risers

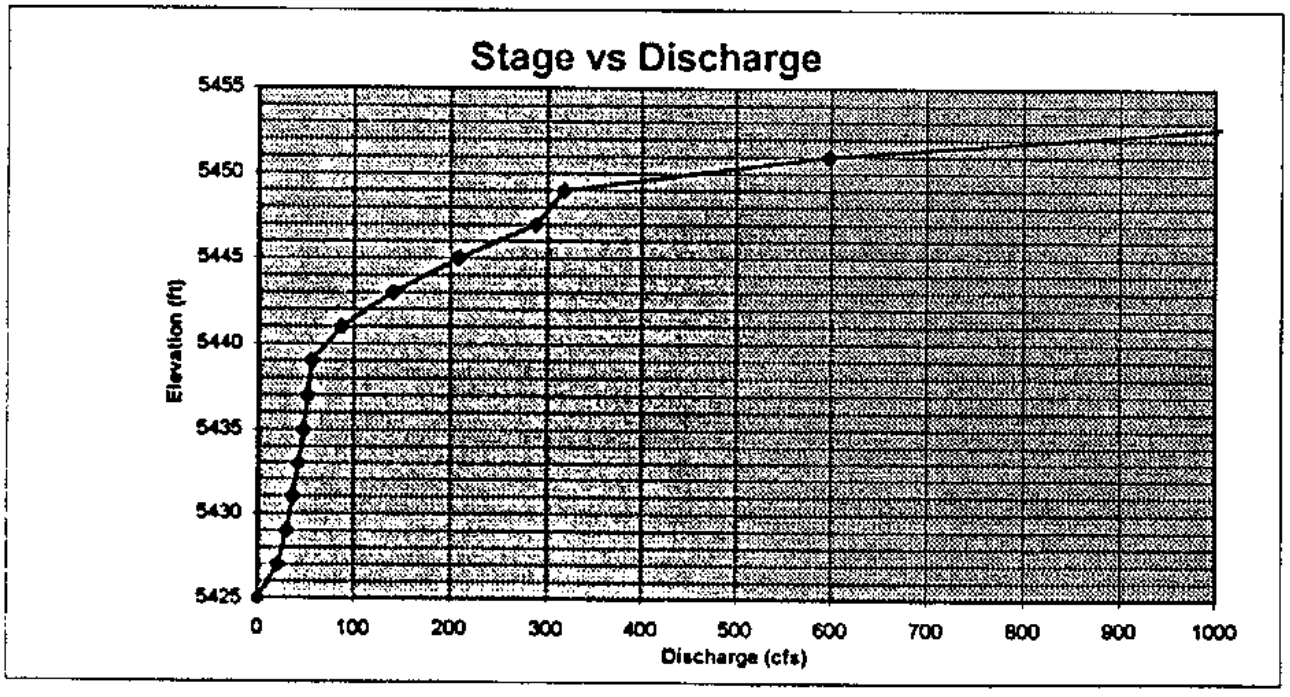
DB # 12

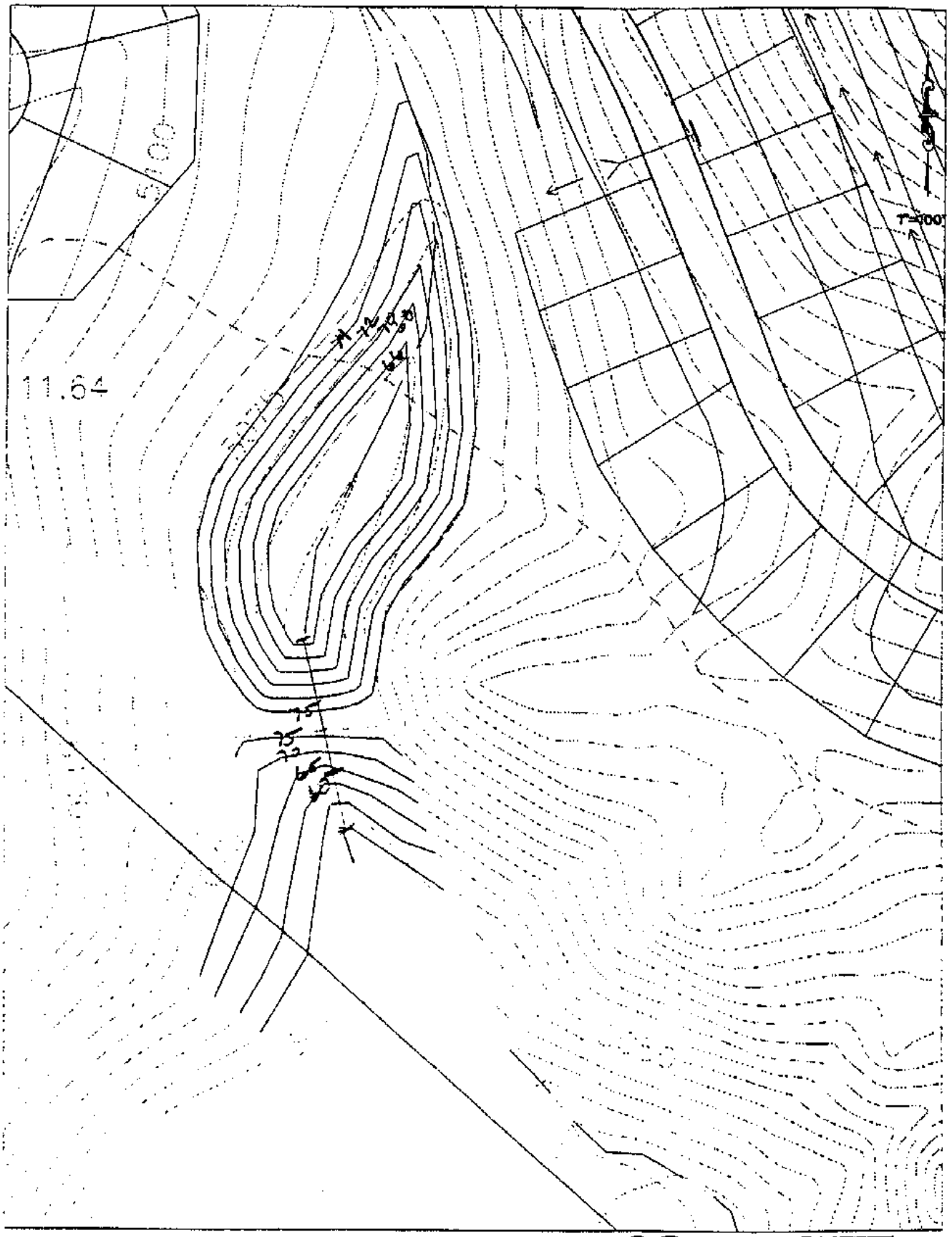


DB 12 Outlet Configuration

Qlow	Qorifice Hi	Qweir Hi	Qwier Road	Q total	Ele
0.0	0.0	0.0		0.0	5425
21.4	0.0	0.0		21.4	5427
30.3	0.0	0.0		30.3	5429
37.1	0.0	0.0		37.1	5431
42.8	0.0	0.0		42.8	5433
47.8	0.0	0.0		47.8	5435
52.4	0.0	0.0		52.4	5437
56.6	0.0	0.0		56.6	5439
60.5	109.0	27.2		87.7	5441
64.2	154.1	76.8		141.0	5443
67.6	188.7	141.1		208.7	5445
71.0	217.9	217.2		288.2	5447
74.1	243.6	303.6	0.0	317.7	5449
77.1	266.9	399.1	254.6	598.6	5451
80.0	288.3	502.9	720.0	1088.3	5453
82.9	308.2	614.4	1322.7	1713.7	5455
85.6	326.9	733.1	2036.5	2448.9	5457
88.2	344.5	858.7	2846.0	3278.8	5459
90.8	361.3	990.6	3741.2	4193.3	5461

Size	24	4x4
Area (sqft)	3.142	16
	RCP	RCB
Orifice Coef.		0.6
RCB perimeter		16 ft
Weir Length		30 lft





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SOMERSETT

WATERSHED AREA: F1

PROPOSED DETENTION #13

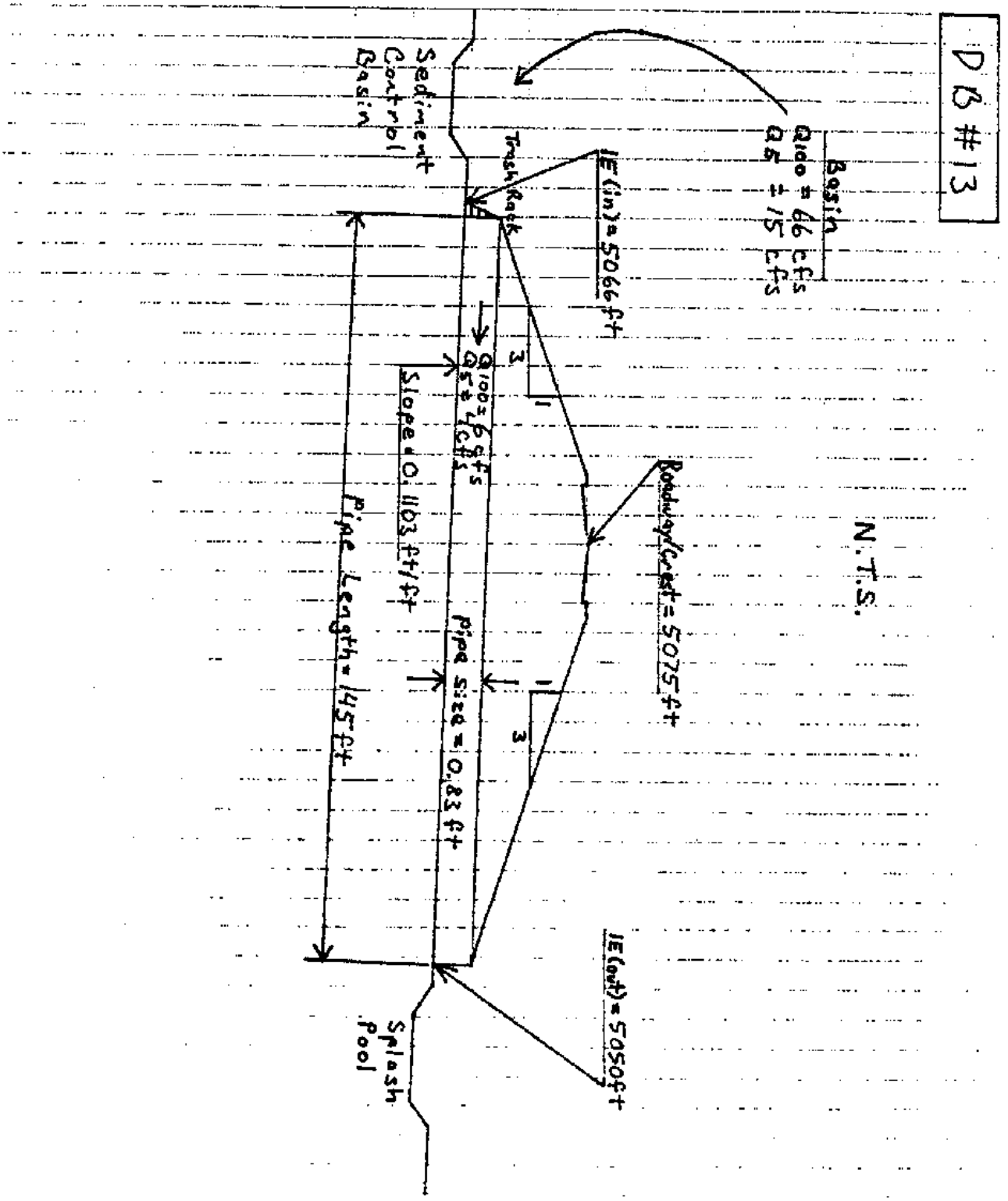
WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB #13



CURRENT DATE: 04-23-1998
CURRENT TIME: 14:50:58

FILE DATE: 04-21-1998
FILE NAME: SSDB13

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS / SHAPE / MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5066.00	5050.00	145.88	1 RCP	0.83	0.83	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB13 DATE: 04-21-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5066.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5066.62	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5067.05	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5067.71	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5068.65	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5069.85	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5071.44	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5073.96	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5075.02	8.0	7.3	0.0	0.0	0.0	0.0	0.0	0.56	30
5075.03	9.0	7.3	0.0	0.0	0.0	0.0	0.0	1.64	12
5075.04	10.0	7.3	0.0	0.0	0.0	0.0	0.0	2.63	9
5075.00	7.3	7.3	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB13 DATE: 04-21-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5066.00	0.000	0.00	0.00	0.00
5066.62	0.000	1.00	0.00	0.00
5067.05	0.000	2.00	0.00	0.00
5067.71	0.000	3.00	0.00	0.00
5068.65	0.000	4.00	0.00	0.00
5069.85	0.000	5.00	0.00	0.00
5071.44	0.000	6.00	0.00	0.00
5073.96	0.000	7.00	0.00	0.00
5075.02	0.000	8.00	0.15	1.88
5075.03	0.000	9.00	0.07	0.78
5075.04	0.000	10.00	0.08	0.80

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

RENT DATE: 04-23-1998
NT TIME: 14:50:58

FILE DATE: 04-21-1998
FILE NAME: SSDB13

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

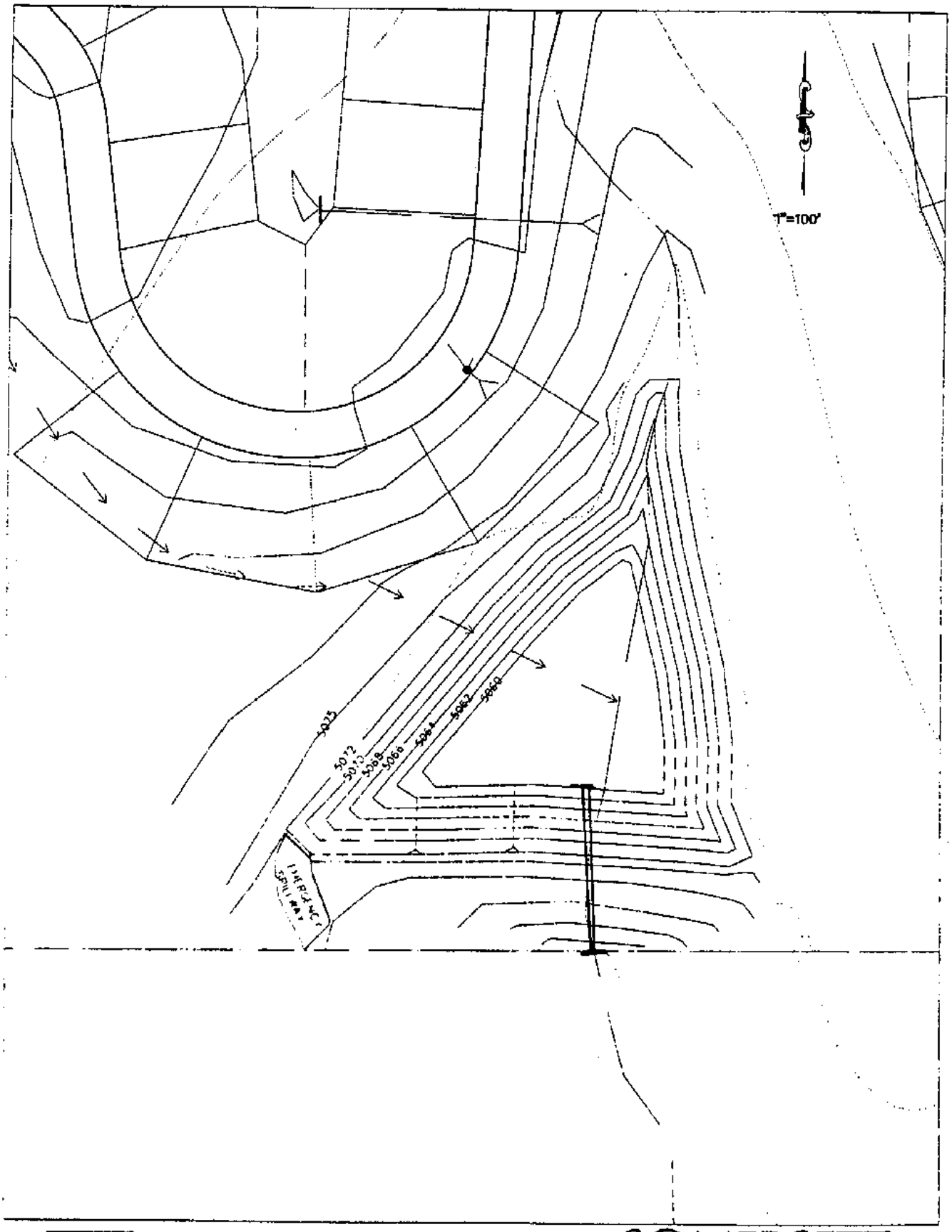
BOTTOM WIDTH	10.00 ft
SIDE SLOPE H/V (X:1)	4.0
CHANNEL SLOPE V/H (ft/ft)	0.110
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5050.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5050.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5050.00	0.000	0.00	0.00	0.00
1.00	5050.08	0.793	0.08	1.25	0.53
2.00	5050.12	0.841	0.12	1.63	0.80
3.00	5050.15	0.868	0.15	1.90	1.02
4.00	5050.18	0.888	0.18	2.12	1.21
5.00	5050.20	0.902	0.20	2.30	1.38
6.00	5050.22	0.914	0.22	2.46	1.54
7.00	5050.25	0.924	0.25	2.60	1.68
8.00	5050.27	0.932	0.27	2.72	1.82
9.00	5050.29	0.939	0.29	2.84	1.95
10.00	5050.30	0.945	0.30	2.95	2.08

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5075.00 ft



JEFF CODEGA
PLANNING/DESIGN, INC.

planners • landscape architects • engineers

SOMERSETT

WATERSHED AREA: E5

PROPOSED DETENTION #14

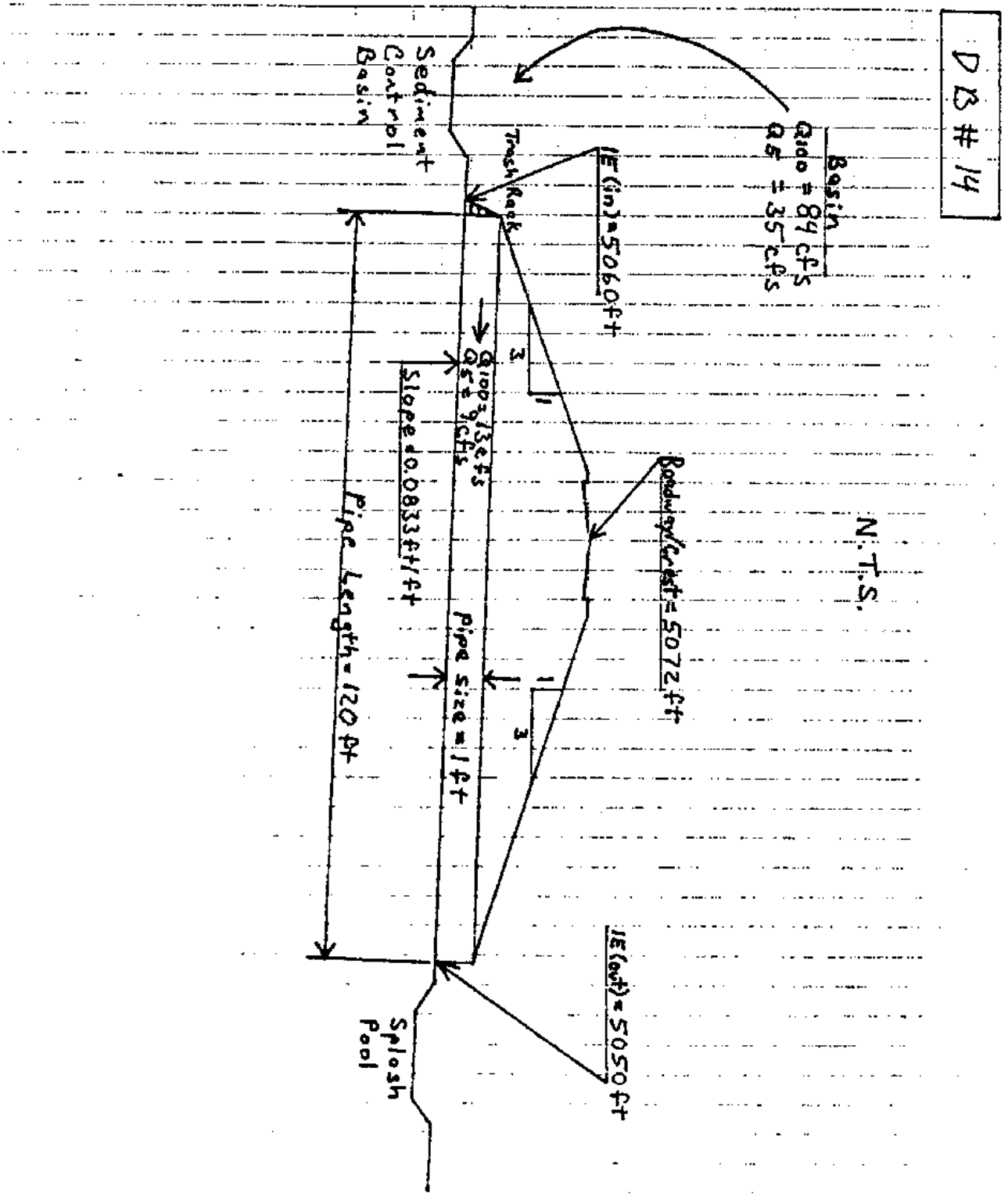
WRC FORM #68N 10/97R

WRC NEVADA, INC
1575 DELUCCHI LANE, SUITE 207A
RENO, NEVADA 89502
PHONE NO. (702) 332-3737
FAX NO. (702) 332-3740

JOB NUMBER: 3011 SHEET ___ OF ___
JOB NAME: Somerset
CALC. BY: ___ DATE 4/24/98
CHKD. BY: ___ DATE __/__/__
REV. BY: ___ DATE __/__/__

SUBJECT: Typical Detention Basin Details For Standard Culverts

DB # 14



CURRENT DATE: 04-17-1998
CURRENT TIME: 15:54:37

FILE DATE: 04-17-1998
FILE NAME: SSDB14

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	5060.00	5050.00	120.42	1 RCP	1.00	1.00	.014	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SSDB14 DATE: 04-17-1998

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
5060.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5060.88	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5061.65	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5062.95	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.00	1
[illegible]	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.00	1
[illegible]	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.00	1
5071.49	12.0	11.7	0.0	0.0	0.0	0.0	0.0	0.00	30
5071.98	14.0	11.9	0.0	0.0	0.0	0.0	0.0	0.00	30
5072.06	16.0	11.9	0.0	0.0	0.0	0.0	0.0	3.96	13
5072.08	18.0	11.9	0.0	0.0	0.0	0.0	0.0	5.97	8
5072.10	20.0	11.9	0.0	0.0	0.0	0.0	0.0	7.96	7
5072.00	11.9	11.9	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SSDB14 DATE: 04-17-1998

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
5060.00	0.000	0.00	0.00	0.00
5060.88	0.000	2.00	0.00	0.00
5061.65	0.000	4.00	0.00	0.00
5062.95	0.000	6.00	0.00	0.00
5064.75	0.000	8.00	0.00	0.00
5067.38	0.000	10.00	0.00	0.00
5071.49	-0.004	12.00	0.28	2.33
5071.98	-0.012	14.00	2.14	15.29
5072.06	-0.001	16.00	0.16	1.00
5072.08	0.000	18.00	0.14	0.78
5072.10	0.000	20.00	0.15	0.75

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 04-17-1998
CURRENT TIME: 15:54:37

FILE DATE: 04-17-1998
FILE NAME: SSDB14

ERFORMANCE CURVE FOR CULVERT 1 - 1(1.00 (ft) BY 1.00 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	5060.00	0.00	-10.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5060.88	0.88	-8.61	1-S2n	0.31	0.60	0.20	0.22	17.54	1.37
4.00	5061.65	1.65	-6.72	1-S2n	0.45	0.84	0.34	0.33	17.12	1.74
6.00	5062.95	2.95	-3.70	6-FFc	0.57	1.00	1.00	0.42	7.64	2.00
8.00	5064.75	4.75	0.42	6-FFc	0.70	1.00	1.00	0.49	10.19	2.19
10.00	5067.38	7.38	5.72	6-FFc	0.88	1.00	1.00	0.55	12.73	2.35
11.72	5071.49	11.49	11.21	6-FFc	1.00	1.00	1.00	0.61	14.92	2.49
11.86	5071.97	11.97	11.71	6-FFc	1.00	1.00	1.00	0.67	15.10	2.62
11.89	5072.06	12.06	11.79	6-FFc	1.00	1.00	1.00	0.72	15.13	2.72
11.89	5072.08	12.08	11.81	6-FFc	1.00	1.00	1.00	0.77	15.14	2.82
11.90	5072.10	12.10	11.83	6-FFc	1.00	1.00	1.00	0.81	15.15	2.91

El. inlet face invert 5060.00 ft El. outlet invert 5050.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

ULET STATION	0.00 ft
ET ELEVATION	5060.00 ft
OUTLET STATION	120.00 ft
OUTLET ELEVATION	5050.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0833
CULVERT LENGTH ALONG SLOPE	120.42 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	1.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.014
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 04-17-1998
CURRENT TIME: 15:54:37

FILE DATE: 04-17-1998
FILE NAME: SSDB14

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	6.00 ft
SIDE SLOPE H/V (X:1)	3.0
CHANNEL SLOPE V/H (ft/ft)	0.036
MANNING'S n (.01-0.1)	0.070
CHANNEL INVERT ELEVATION	5050.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	5050.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	5050.00	0.000	0.00	0.00	0.00
2.00	5050.22	0.514	0.22	1.37	0.49
4.00	5050.33	0.535	0.33	1.74	0.74
6.00	5050.42	0.546	0.42	2.00	0.93
8.00	5050.49	0.552	0.49	2.19	1.10
10.00	5050.55	0.557	0.55	2.35	1.25
12.00	5050.61	0.561	0.61	2.49	1.38
14.00	5050.67	0.564	0.67	2.62	1.50
16.00	5050.72	0.566	0.72	2.72	1.62
18.00	5050.77	0.568	0.77	2.82	1.73
20.00	5050.81	0.570	0.81	2.91	1.83

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH	30.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	5072.00 ft

APPENDIX F
Project Phasing Analysis

APPENDIX F - PROJECT PHASING ANALYSIS

HEC-1 Output
5-Year Proposed Condition Analysis
Phase I Improvements Only

URS NEVADA, INC.

April 17, 1998

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*****************************************
*                                       *
*  000 HYDROGRAPH PACKAGE  (HEC-1)      *
*              MAY  1991                *
*           VERSION 4.0.1E              *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:35:32   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   |                      "PHASE ONE ONLY" 5 YEAR MODEL                     |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                              |
    6     ID   | Washoe County, Nevada                                                  |
    7     ID   |                                                                        |
    8     ID   |    5-Year Analysis                                                     |
    9     ID   |    - For offsite areas                                                 |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   11     ID   |    - Rainfall entered using hypothetical storm option                  |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   14     ID   |       (SCS, 1986)  or NEH-4 (SCS, 1972)                                |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   17     ID   |                                                                        |
   18     ID   | File: SSP1-005.DAT                          WRC NEVADA, INC.           |
   19     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A  |
   20     ID   | Project No.   3011                          Reno, Nevada  89502        |
   21     ID   |                                            (702)332-3737,FAX 332-3740 |
   22     ID   ==========================================================================
   23     IT       3       0       0     441
   24     IO       5       0       0
          *
          *
          *
          * *********    WATERSHED SUBAREA B    *************
          *
          *
          *

   25     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
   26     PH        1            0.22    0.40    0.67    0.91    1.10    1.50    1.96    2.43
   27     BA   0.4136
   28     LS        0      76
   29     UD     0.32
          *

   30     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
   31     RD     3900  0.0133      .07          TRAP       6       3
          *

   32     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
   33     PH        1            0.22    0.40    0.67    0.91    1.10    1.48    1.98    2.48
   34     BA   0.2400
   35     LS        0      70
   36     UD     0.33
          *
```

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

  37      KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  38      RD    4500  0.1510     .08           TRAP       6       3
          *

  39      KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  40      PH       1           0.20    0.37    0.61    0.85    1.03    1.40    1.85    2.30
  41      BA  0.3484
  42      LS       0      75
  43      UD    0.26
          *

  44      KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  45      HC       3
          *

  46      KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  47      RD    2000  0.1000     .07           TRAP       6       3
          *

  48      KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  49      PH       1           0.19    0.35    0.58    0.79    0.95    1.27    1.70    2.12
  50      BA  0.0777
  51      LS       0      76
  52      UD    0.24
          *

  53      KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  54      HC       2
          *

  55      KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  56      RD    3100  0.0710     .07           TRAP       6       3
          *

  57      KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  58      PH       1           0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  59      BA  0.1056
  60      LS       0      84
  61      UD     .24
          *

  62      KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  63      HC       2
          *

  64      KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  65      PH       1           0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  66      BA  0.2445
  67      LS       0      76
  68      UD    0.23
          *
```

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

  69      KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  70      RD    1100  0.0770     .07          TRAP      6       3
          *
  71      KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  72      PH       1            0.20   0.36   0.60   0.81   0.97   1.30   1.74   2.18
  73      BA  0.0382
  74      LS       0      84
  75      UD    0.16
          *
  76      KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  77      PH       1            0.19   0.34   0.57   0.78   0.93   1.26   1.69   2.11
  78      BA  0.0591
  79      LS       0      79
  80      UD    0.26
          *
  81      KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  82      HC       3
          *
  83      KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  84      RD    2200  0.0680     .07          TRAP      6       3
          *
  85      KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  86      PH       1            0.18   0.32   0.53   0.73   0.89   1.21   1.62   2.04
  87      BA  0.0240
  88      LS       0      78
  89      UD    0.21
          *
  90      KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  91      HC       3
          *
  92      KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  93      RD     500  0.0500     .07          TRAP      6       3
          *
  94      KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  95      PH       1            0.18   0.32   0.53   0.73   0.88   1.20   1.60   2.01
  96      BA  0.0360
  97      LS       0      87
  98      UD    0.10
          *
  99      KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
 100      HC       2
          *
```

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

101       KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
102       KM       42"RCP ie 5005 and 8'X 8'RCB ie 5014
103       RS       1    STOR      -1
104       SA     .34    .490    .660    .840    1.04    1.26    1.67
105       SE    5010    5012    5014    5016    5018    5020    5025
106       SQ       0    65.5    92.7   167.8   284.6   428.7   594.9   780.5  1073.4
107       SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *

108       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
109       RD     800  0.0563     .07            TRAP       6       3
          *

110       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
111       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
112       BA  0.0126
113       LS       0      87
114       UD    0.10
          *

115       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
116       HC       2
          *

117       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
118       PH       1            0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
119       BA   0.094
120       LS       0      86
121       UD    0.24
          *

122       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
123       RD     400  0.0533     .05            TRAP       6       3
          *

124       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
125       PH       1            0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
126       BA   0.051
127       LS       0      78
128       UD     .21
          *

129       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
130       HC       2
          *

131       KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
132       KM       12"RCP ie 5050
133       RS       1    STOR      -1
134       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
135       SE    5050    5051    5052    5054    5056    5058    5060
136       SQ       0       1       2       3       4       5       6       7       8
137       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *
```

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

  138     KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
  139     RD     700  0.0500     .06           TRAP       6       3
          *

  140     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  141     PH       1           0.18    0.33    0.56    0.77    0.93    1.27    1.69    2.11
  142     BA  0.0288
  143     LS       0      78
  144     UD     .20
          *

  145     KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
  146     RD    2100    .050     .07           TRAP       5       2
          *

  147     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  148     PH       1           0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
  149     BA  0.0877
  150     LS       0      78
  151     UD    0.22
          *

  152     KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
  153     RD    2325  0.0538    .070           TRAP       5       2
          *

  154     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  155     PH       1           0.18    0.33    0.56    0.76    0.92    1.25    1.65    2.06
  156     BA  0.0780
  157     LS       0      80
  158     UD    0.23
          *

  159     KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND D81
  160     HC       4
          *

  161     KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
  162     RD     900  0.0390     .07           TRAP       6       3
          *

  163     KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
  164     PH       1           0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  165     BA  0.0360
  166     LS       0      85
  167     UD    0.14
          *

  168     KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
  169     HC       2
          *
```

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

  170     KK  RT-B2c ROUTE HYDROGRAPH TO outlet of b2c
  171     RD     950  0.0260     .07          TRAP       6       3
          *
  172     KK  SA B2B GENERATE HYDOGRAPH FOR SUB-AREA B2B
  173     PH       1            0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
  174     BA  0.0717
  175     LS       0      78
  176     UD     .21
          *
  177     KK  RT-B2C ROUTE HYDROGRAPH TO OUTLET OF B2C
  178     RD    1350  0.0519     .07          TRAP       6       3
          *
  179     KK  SA B2C GENERATE HYDROGRAPH FOR SUB AREA B2C
  180     PH       1            0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
  181     BA  0.0656
  182     LS       0      84
  183     UD     .14
          *
  184     KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10 WITH B2 AND B2C AND B4
  185     HC       4
          *
  186     KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
  187     RD    1400  0.0286     .07          TRAP       6       3
          *
  188     KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
  189     PH       1            0.17   0.31   0.52   0.71   0.86   1.17   1.57   1.97
  190     BA  0.0653
  191     LS       0      82
  192     UD     .12
          *
  193     KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
  194     HC       2
          *
          *
          * *********    WATERSHED SUBAREA C    ************
          *
          *
          *
  195     KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
  196     PH       1            0.23   0.42   0.71   0.95   1.14   1.53   2.03   2.53
  197     BA  0.6580
  198     LS       0      77
  199     UD    0.33
          *
```

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

200       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
201       RD    4800  0.1583     .07           TRAP      6       3
          *

202       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
203       PH       1            0.22    0.39    0.65    0.89    1.06    1.43    1.87    2.30
204       BA  0.3156
205       LS       0      80
206       UD    0.19
          *

207       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
208       HC       2
          *

209       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
210       RD    5500  0.1091     .07           TRAP      6       3
          *

211       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
212       PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.71    2.11
213       BA  0.3359
214       LS       0      80
215       UD    0.26
          *

216       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
217       HC       2
          *

218       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
219       RD    3000  0.0933     .07           TRAP      6       3
          *

220       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
221       PH       1            0.18    0.33    0.56    0.75    0.89    1.20    1.60    2.00
222       BA  0.1528
223       LS       0      78
224       UD    0.27
          *

225       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
226       HC       2
          *

227       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
228       PH       1            0.20    0.36    0.60    0.81    0.97    1.31    1.74    2.16
229       BA  0.2380
230       LS       0      80
231       UD    0.23
          *
```

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

  232     KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
  233     RD    3200  0.0750     .07          TRAP      6      3
          *

  234     KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
  235     PH       1            0.18   0.33   0.56   0.76   0.91   1.24   1.64   2.05
  236     BA  0.0956
  237     LS       0      77
  238     UD    0.25
          *

  239     KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
  240     HC       2
          *

  241     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
  242     HC       2
          *

  243     KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
  244     RD    1100   0.055     .07          TRAP      6      3
          *

  245     KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
  246     PH       1            0.18   0.32   0.53   0.72   0.86   1.16   1.55   1.95
  247     BA  0.1147
  248     LS       0      75
  249     UD    0.27
          *

  250     KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
  251     HC       2
          *

  252     KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4
  253     RD    1200  0.0580     .07          TRAP      6      3
          *

  254     KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4
  255     PH       1            0.18   0.32   0.53   0.72   0.87   1.17   1.56   1.96
  256     BA  0.0930
  257     LS       0      79
  258     UD    0.20
          *

  259     KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4
  260     PH       1            0.18   0.32   0.53   0.72   0.87   1.17   1.56   1.96
  261     BA  0.0384
  262     LS       0      77
  263     UD    0.18
          *
```

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

264       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
265       HC       3
          *

266       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
267       KM           36"RCP ie 5085 and 8'x7' at 5106
268       RS       1    STOR      -1
269       SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
270       SE    5085    5090    5095    5100    5105    5110    5115    5120
271       SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
272       SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
273       SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
274       SE    5109    5111    5113    5115    5117    5118    5120
          *

275       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
276       RD    1200     .04     .07            TRAP       6       3
          *

277       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
278       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
279       BA  0.1162
280       LS       0      76
281       UD     .27
          *

282       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
283       HC       2
          *

284       KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
285       KM         10'x6' RCB ie 5020
286       RS       1    STOR      -1
287       SA    .270   1.030   1.430   2.340
288       SE    5020    5025    5030    5035
289       SQ       0      90     180     270     360     400     540     630     720     810
290       SQ     900     972
291       SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
292       SE  5033.5 5035.00
          *

293       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
294       RD     950     .05     .07            TRAP       6       3
          *

295       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
296       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
297       BA  0.0999
298       LS       0      78
299       UD     .30
          *
```

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

300       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
301       HC       2
          *

302       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
303       PH       1            0.17   0.30   0.50   0.67   0.80   1.07   1.45   1.84
304       BA  0.1705
305       LS       0      78
306       UD    0.25
          *

307       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
308       HC       2
          *

309       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
310       RD    1500  0.0400     .07          TRAP       6       3
          *

311       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
312       PH       1            0.17   0.30   0.50   0.69   0.83   1.13   1.53   1.92
313       BA  0.0809
314       LS       0      79
315       UD    0.24
          *

316       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
317       HC       2
          *

318       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
319       HC       2
          *

320       KK    RT-D ROUTE HYDROGRAPH TO OUTLET OF D
321       RD    3200  0.0500     .07          TRAP       6       2
          *

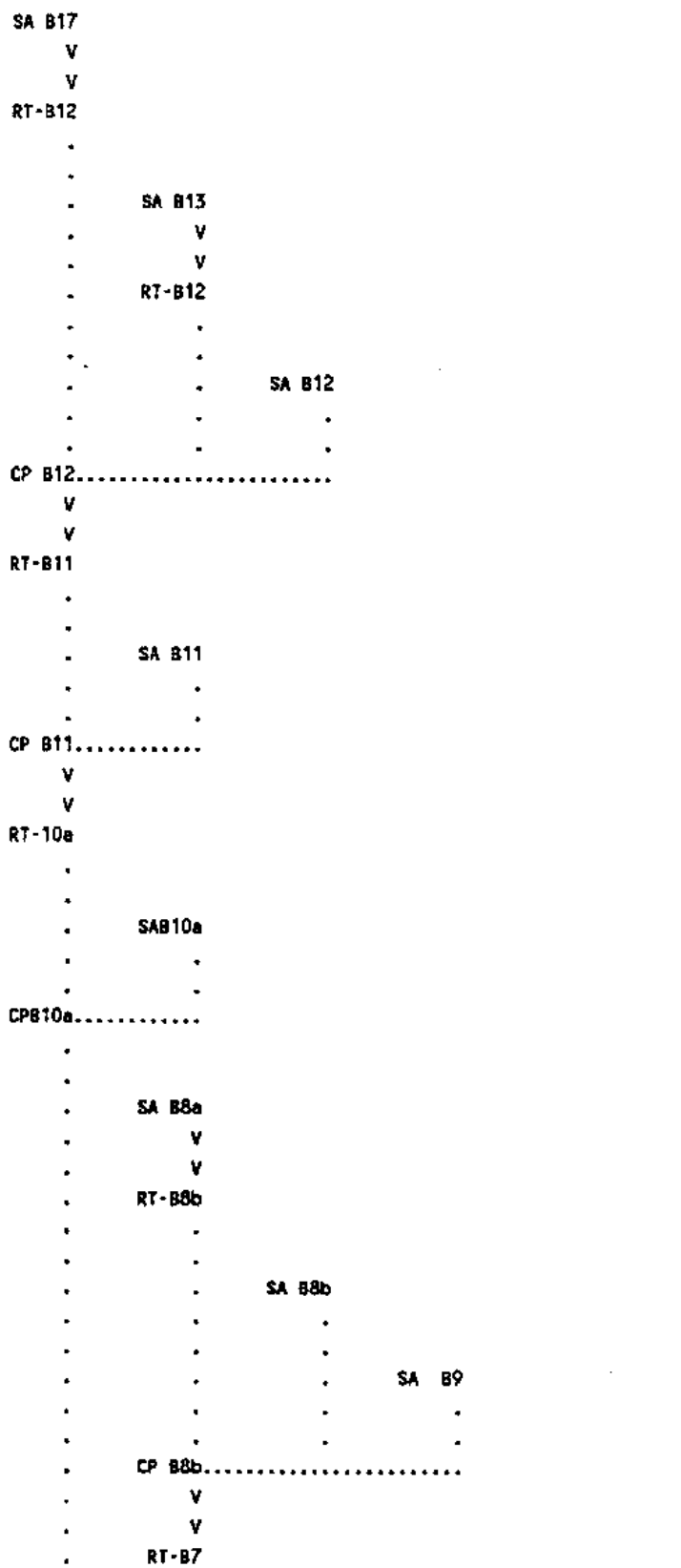
322       KK  SA   D GENERATE HYDOGRAPH FOR SUB-AREA D
323       PH       1            0.17   0.31   0.52   0.70   0.85   1.14   1.55   1.96
324       BA  0.2191
325       LS       0      78
326       UD    0.24
          *

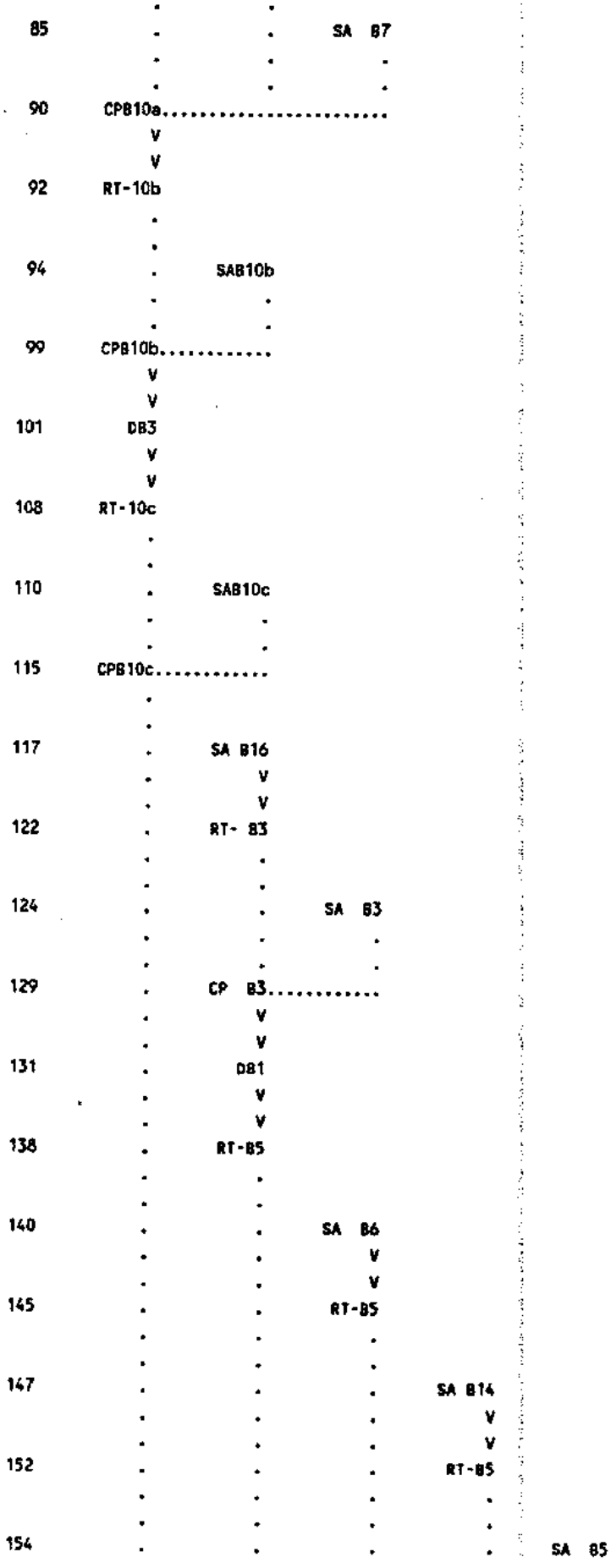
327       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
328       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
329       HC       2
          *
330       ZZ
```

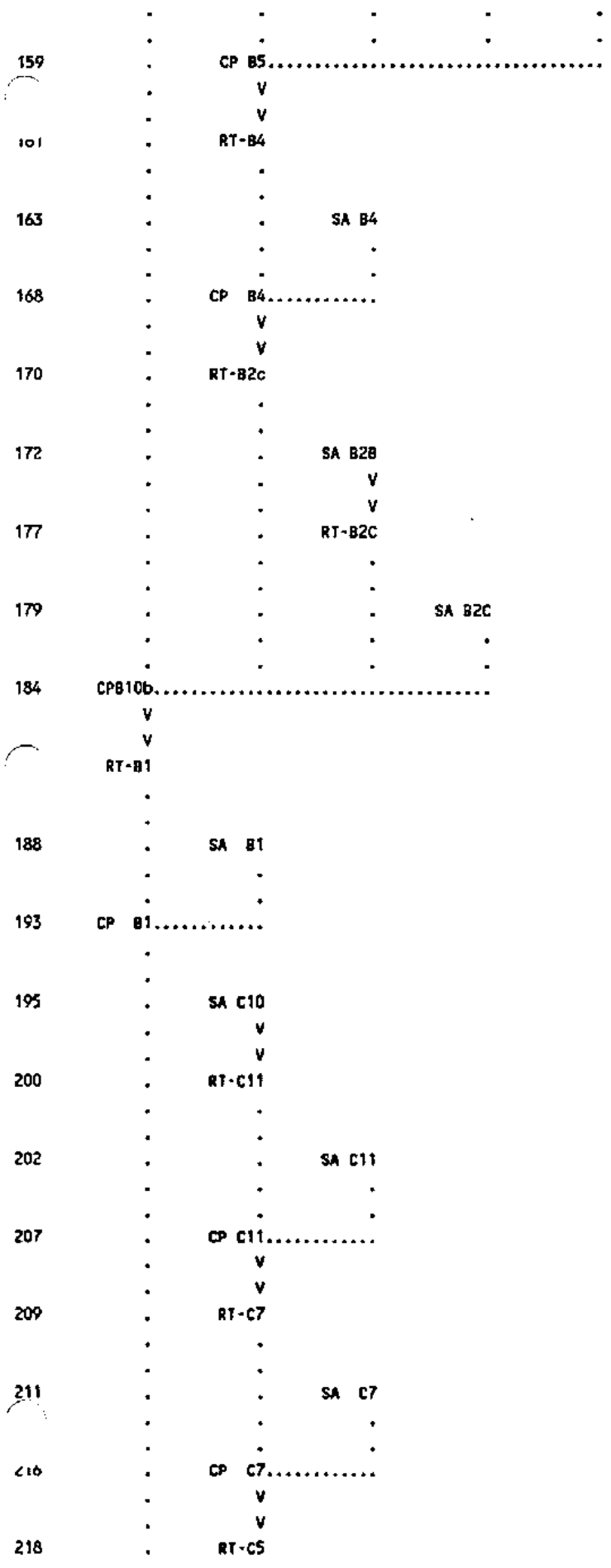
SCHEMATIC DIAGRAM OF STREAM NETWORK

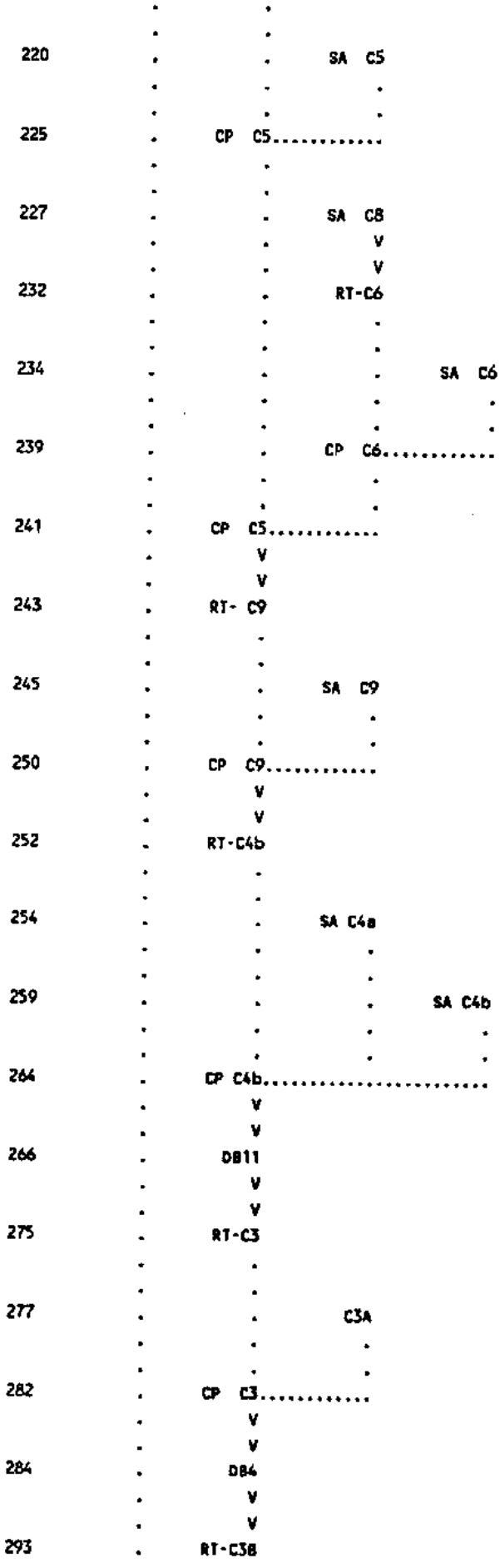
(V) ROUTING (---->) DIVERSION OR PUMP FLOW

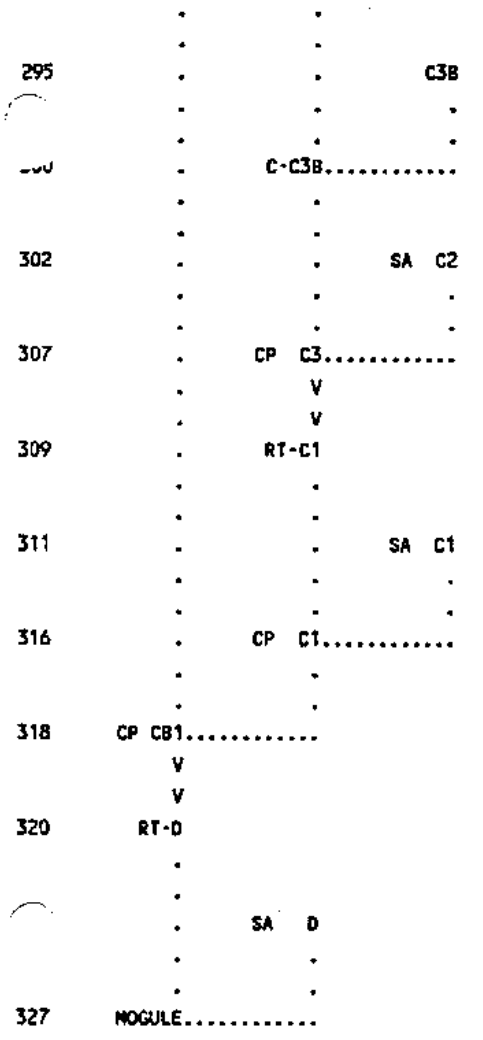
NO. (.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW




85
SA B7
90
CPB10a
92
RT-10b
94
SAB10b
99
CPB10b
101
DB3
108
RT-10c
110
SAB10c
115
CPB10c
117
SA B16
122
RT- B3
124
SA B3
129
CP B3
131
DB1
138
RT-B5
140
SA B6
145
RT-B5
147
SA B14
152
RT-B5
154
SA B5


159 CP B5
RT-B4
163 SA B4
168 CP B4
170 RT-B2c
172 SA B2B
177 RT-B2C
179 SA B2C
184 CPB10b
RT-B1
188 SA B1
193 CP B1
195 SA C10
200 RT-C11
202 SA C11
207 CP C11
209 RT-C7
211 SA C7
216 CP C7
218 RT-C5


220
SA C5
225
CP C5
227
SA C8
232
RT-C6
234
SA C6
239
CP C6
241
CP C5
243
RT- C9
245
SA C9
250
CP C9
252
RT-C4b
254
SA C4a
259
SA C4b
264
CP C4b
266
DB11
275
RT-C3
277
C3A
282
CP C3
284
DB4
293
RT-C3B



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             MAY  1991                 *
*          VERSION 4.0.1E               *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:35:32   *
*****************************************
```


```
*****************************************
*                                       *
*     U.S. ARMY CORPS OF ENGINEERS      *
*     HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748               *
*                                       *
*****************************************
```


```
| SOMERSETT PLANNED UNIT DEVELOPEMENT
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
|                    "PHASE ONE ONLY" 5 YEAR MODEL
| DEVELOPED CONDITION WITH DETENTION BASINS
| Washoe County, Nevada
|
|    5-Year Analysis
|    - For offsite areas
|    - Watersheds measured from USGS 7.5 Minute Quads
|    - Rainfall entered using hypothetical storm option
|    - Rainfall data estimated using revised NOAA precipitation data
|    - Curve number estimates based on Sage-Grass, as described in TR-55
|      (SCS, 1986)  or NEH-4 (SCS, 1972)
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)
|      as modified for the Washoe County Hydrologic Criteria Manual.
|
| File: SSP1-005.DAT                          WRC NEVADA, INC.
| APRIL 1998                                  1575 DELUCCHI LN STE.207A
| Project No.   3011                          Reno, Nevada  89502
|                                            (702)332-3737,FAX 332-3740
```

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

   IT        HYDROGRAPH TIME DATA
                 MMIN          3  MINUTES IN COMPUTATION INTERVAL
                 IDATE     1   0  STARTING DATE
                 ITIME      0000  STARTING TIME
                   NQ      1441  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE    4   0  ENDING DATE
                 NDTIME     0000  ENDING TIME
                 ICENT        19  CENTURY MARK

           COMPUTATION INTERVAL     0.05 HOURS
               TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA B17	77.	12.40	21.	7.	2.	0.41		
ROUTED TO	RT-B12	77.	12.65	21.	7.	2.	0.41		
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24		
ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24		
HYDROGRAPH AT	SA B12	55.	12.30	15.	5.	2.	0.35		
3 COMBINED AT	CP B12	131.	12.60	44.	15.	5.	1.00		
ROUTED TO	RT-B11	131.	12.65	44.	15.	5.	1.00		
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP B11	136.	12.65	47.	16.	5.	1.08		
ROUTED TO	RT-10a	138.	12.75	47.	16.	5.	1.08		
HYDROGRAPH AT	SAB10a	28.	12.30	6.	2.	1.	0.11		
2 COMBINED AT	CPB10a	148.	12.75	52.	18.	6.	1.19		
HYDROGRAPH AT	SA B8a	41.	12.30	10.	3.	1.	0.24		
ROUTED TO	RT-B8b	41.	12.35	10.	3.	1.	0.24		
HYDROGRAPH AT	SA B8b	15.	12.20	3.	1.	0.	0.04		
HYDROGRAPH AT	SA B9	11.	12.30	3.	1.	0.	0.06		
3 COMBINED AT	CP B8b	63.	12.30	15.	5.	2.	0.34		
ROUTED TO	RT-B7	63.	12.40	15.	5.	2.	0.34		
HYDROGRAPH AT	SA B7	4.	12.25	1.	0.	0.	0.02		
3 COMBINED AT	CPB10a	180.	12.75	68.	24.	8.	1.55		
ROUTED TO	RT-10b	177.	12.75	68.	24.	8.	1.55		
HYDROGRAPH AT	SAB10b	17.	12.10	3.	1.	0.	0.04		
2 COMBINED AT	CPB10b	180.	12.75	70.	25.	8.	1.59		
ROUTED TO	DB3	155.	12.95	70.	25.	8.	1.59	5015.65	12.95
ROUTED TO	RT-10c	155.	13.00	70.	25.	8.	1.59		
HYDROGRAPH AT	SAB10c	6.	12.10	1.	0.	0.	0.01		

2 COMBINED AT	CPB10c	155.	13.00	71.	25.	8.	1.60		
HYDROGRAPH AT	SA B16	31.	12.30	7.	2.	1.	0.09		
ROUTED TO	RT- B3	31.	12.30	7.	2.	1.	0.09		
HYDROGRAPH AT	SA B3	9.	12.25	2.	1.	0.	0.05		
2 COMBINED AT	CP B3	40.	12.30	9.	3.	1.	0.14		
ROUTED TO	DB1	4.	17.35	4.	3.	1.	0.14	5053.72	17.30
ROUTED TO	RT-B5	4.	17.35	4.	3.	1.	0.14		
HYDROGRAPH AT	SA B6	6.	12.25	1.	0.	0.	0.03		
ROUTED TO	RT-B5	6.	12.40	1.	0.	0.	0.03		
HYDROGRAPH AT	SA B14	17.	12.25	4.	1.	0.	0.09		
ROUTED TO	RT-B5	17.	12.40	4.	1.	0.	0.09		
HYDROGRAPH AT	SA B5	16.	12.30	4.	1.	0.	0.08		
4 COMBINED AT	CP B5	39.	12.40	13.	6.	2.	0.34		
ROUTED TO	RT-B4	40.	12.45	13.	6.	2.	0.34		
HYDROGRAPH AT	SA B4	13.	12.15	2.	1.	0.	0.04		
2 COMBINED AT	CP B4	45.	12.40	15.	7.	2.	0.38		
ROUTED TO	RT-B2c	45.	12.50	15.	7.	2.	0.38		
HYDROGRAPH AT	SA B2B	12.	12.25	3.	1.	0.	0.07		
ROUTED TO	RT-B2C	13.	12.35	3.	1.	0.	0.07		
HYDROGRAPH AT	SA B2C	23.	12.15	4.	1.	0.	0.07		
4 COMBINED AT	CPB10b	185.	12.95	92.	34.	11.	2.11		
ROUTED TO	RT-B1	185.	13.00	92.	34.	11.	2.11		
HYDROGRAPH AT	SA B1	19.	12.15	3.	1.	0.	0.07		
2 COMBINED AT	CP B1	189.	13.00	94.	35.	12.	2.18		
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66		
ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66		
HYDROGRAPH AT	SA C11	97.	12.25	19.	6.	2.	0.32		
2 COMBINED AT	CP C11	198.	12.45	58.	20.	7.	0.97		
ROUTED TO	RT-C7	198.	12.55	58.	20.	7.	0.97		
HYDROGRAPH AT	SA C7	73.	12.30	17.	6.	2.	0.34		

2 COMBINED AT	CP C7	243.	12.55	75.	25.	8.	1.31		
ROUTED TO	RT-C5	243.	12.60	75.	25.	8.	1.31		
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15		
2 COMBINED AT	CP C5	257.	12.60	81.	27.	9.	1.46		
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24		
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24		
HYDROGRAPH AT	SA C6	14.	12.30	4.	1.	0.	0.10		
2 COMBINED AT	CP C6	70.	12.40	16.	5.	2.	0.33		
2 COMBINED AT	CP C5	306.	12.50	97.	33.	11.	1.80		
ROUTED TO	RT- C9	305.	12.55	97.	33.	11.	1.80		
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11		
2 COMBINED AT	CP C9	313.	12.50	100.	34.	11.	1.91		
ROUTED TO	RT-C4b	313.	12.60	100.	34.	11.	1.91		
HYDROGRAPH AT	SA C4a	17.	12.25	4.	1.	0.	0.09		
HYDROGRAPH AT	SA C4b	6.	12.25	1.	0.	0.	0.04		
3 COMBINED AT	CP C4b	322.	12.55	104.	36.	12.	2.04		
ROUTED TO	DB11	179.	13.15	104.	36.	12.	2.04	5105.92	13.15
ROUTED TO	RT-C3	179.	13.20	104.	36.	12.	2.04		
HYDROGRAPH AT	C3A	11.	12.35	3.	1.	0.	0.12		
2 COMBINED AT	CP C3	183.	13.20	108.	37.	12.	2.16		
ROUTED TO	DB4	180.	13.30	107.	37.	12.	2.16	5023.38	13.30
ROUTED TO	RT-C3B	180.	13.35	107.	37.	12.	2.16		
HYDROGRAPH AT	C3B	12.	12.35	3.	1.	0.	0.10		
2 COMBINED AT	C-C3B	184.	13.35	110.	38.	13.	2.26		
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17		
2 COMBINED AT	CP C3	190.	13.35	115.	40.	13.	2.43		
ROUTED TO	RT-C1	190.	13.40	115.	40.	13.	2.43		
HYDROGRAPH AT	SA C1	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP C1	193.	13.40	118.	41.	14.	2.51		
2 COMBINED AT	CP CB1	363.	13.20	213.	76.	25.	4.69		

ROUTED TO	RT-D	363.	13.30	213.	76.	25.	4.69
HYDROGRAPH AT	SA D	31.	12.30	8.	3.	1.	0.22
2 COMBINED AT	MOGULE	372.	13.30	220.	79.	26.	4.91

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-B12	MANE	3.00	76.96	759.00	0.65	3.00	76.96	759.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1438E+02 EXCESS=0.0000E+00 OUTFLOW=0.1438E+02 BASIN STORAGE=0.4274E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	24.40	756.00	0.45	3.00	24.40	756.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5701E+01 EXCESS=0.0000E+00 OUTFLOW=0.5704E+01 BASIN STORAGE=0.2449E-02 PERCENT ERROR= -0.1

RT-B11	MANE	3.00	130.95	759.00	0.56	3.00	130.95	759.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3005E+02 EXCESS=0.0000E+00 OUTFLOW=0.3005E+02 BASIN STORAGE=0.9299E-03 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	137.96	765.00	0.56	3.00	137.96	765.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3203E+02 EXCESS=0.0000E+00 OUTFLOW=0.3203E+02 BASIN STORAGE=0.1961E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	3.00	40.63	741.00	0.51	3.00	40.63	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6638E+01 EXCESS=0.0000E+00 OUTFLOW=0.6639E+01 BASIN STORAGE=0.6975E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	63.17	744.00	0.56	3.00	63.17	744.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1027E+02 EXCESS=0.0000E+00 OUTFLOW=0.1027E+02 BASIN STORAGE=0.1635E-02 PERCENT ERROR= 0.0

RT-10b	MANE	1.24	178.87	766.48	0.57	3.00	177.04	765.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4718E+02 EXCESS=0.0000E+00 OUTFLOW=0.4718E+02 BASIN STORAGE=0.3340E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.98	154.51	779.98	0.58	3.00	154.50	780.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4894E+02 EXCESS=0.0000E+00 OUTFLOW=0.4894E+02 BASIN STORAGE=0.5186E-03 PERCENT ERROR= 0.0

RT- B3	MANE	1.24	31.09	737.62	0.93	3.00	31.01	738.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4638E+01 EXCESS=0.0000E+00 OUTFLOW=0.4638E+01 BASIN STORAGE=0.2021E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	3.90	1050.00	0.78	3.00	3.90	1050.00	0.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6063E+01 EXCESS=0.0000E+00 OUTFLOW=0.6063E+01 BASIN STORAGE=0.3874E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.60	744.00	0.55	3.00	5.60	744.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8406E+00 EXCESS=0.0000E+00 OUTFLOW=0.8410E+00 BASIN STORAGE=0.1344E-02 PERCENT ERROR= -0.2

RT-B5	MANE	3.00	17.17	744.00	0.58	3.00	17.17	744.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2697E+01 EXCESS=0.0000E+00 OUTFLOW=0.2697E+01 BASIN STORAGE=0.1645E-02 PERCENT ERROR= -0.1

RT-B4	MANE	3.00	39.54	747.00	0.67	3.00	39.54	747.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1209E+02 EXCESS=0.0000E+00 OUTFLOW=0.1209E+02 BASIN STORAGE=0.5913E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	44.98	750.00	0.68	3.00	44.98	750.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1364E+02 EXCESS=0.0000E+00 OUTFLOW=0.1364E+02 BASIN STORAGE=0.7192E-03 PERCENT ERROR= 0.0

RT-B2C	MANE	3.00	12.53	741.00	0.51	3.00	12.53	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1938E+01 EXCESS=0.0000E+00 OUTFLOW=0.1939E+01 BASIN STORAGE=0.9537E-03 PERCENT ERROR= -0.1

RT-B1	MANE	3.00	184.89	780.00	0.60	3.00	184.89	780.00	0.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6783E+02 EXCESS=0.0000E+00 OUTFLOW=0.6783E+02 BASIN STORAGE=0.1031E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	198.11	753.00	0.76	3.00	198.11	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3927E+02 EXCESS=0.0000E+00 OUTFLOW=0.3927E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	243.33	756.00	0.72	3.00	243.33	756.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5056E+02 EXCESS=0.0000E+00 OUTFLOW=0.5056E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT- C9	MANE	2.28	306.83	751.45	0.68	3.00	305.11	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6534E+02 EXCESS=0.0000E+00 OUTFLOW=0.6534E+02 BASIN STORAGE=0.7993E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	2.42	313.20	753.57	0.66	3.00	312.74	756.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6752E+02 EXCESS=0.0000E+00 OUTFLOW=0.6752E+02 BASIN STORAGE=0.6963E-03 PERCENT ERROR= 0.0

RT-C3	MANE	3.00	179.06	792.00	0.65	3.00	179.06	792.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7087E+02 EXCESS=0.0000E+00 OUTFLOW=0.7087E+02 BASIN STORAGE=0.1068E-02 PERCENT ERROR= 0.0

RT-C3B	MANE	2.36	180.28	801.70	0.63	3.00	180.22	801.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7306E+02 EXCESS=0.0000E+00 OUTFLOW=0.7307E+02 BASIN STORAGE=0.5752E-03 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	189.65	804.00	0.61	3.00	189.65	804.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7891E+02 EXCESS=0.0000E+00 OUTFLOW=0.7891E+02 BASIN STORAGE=0.1197E-02 PERCENT ERROR= 0.0

RT-D	MANE	3.00	362.96	798.00	0.60	3.00	362.96	798.00	0.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1510E+03 EXCESS=0.0000E+00 OUTFLOW=0.1510E+03 BASIN STORAGE=0.2164E-02 PERCENT ERROR= 0.0

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

Appendix F - Project Phasing Analysis

HEC-1 Output
100-Year Proposed Condition Analysis
Phase I Improvements Only

WRC NEVADA INC.

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              MAY  1991                *
*           VERSION 4.0.1E              *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:35:54   *
*                                       *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748               *
*                                       *
*****************************************
```


```
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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   |                      "PHASE ONE ONLY" 100 YEAR MODEL                   |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                              |
    6     ID   | Washoe County, Nevada                                                  |
    7     ID   |                                                                        |
    8     ID   |  100-Year Analysis                                                     |
    9     ID   |    - For offsite areas                                                 |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   11     ID   |    - Rainfall entered using hypothetical storm option                  |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   14     ID   |       (SCS, 1986)  or NEH-4 (SCS, 1972)                                |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   17     ID   |                                                                        |
   18     ID   | File: SSP1-100.DAT                          WRC NEVADA, INC.           |
   19     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A  |
   20     ID   | Project No.   3011                          Reno, Nevada  89502        |
   21     ID   |                                             (702)332-3737,FAX 332-3740 |
   22     ID   ==========================================================================
   23     IT      3       0       0     441
   24     IO      5       0       0
          *
          *
          *
          * *********   WATERSHED SUBAREA B    ************
          *
          *
          *

   25     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
   26     PH       1            0.59    1.06    1.77    2.02    2.21    2.60    3.41    4.22
   27     BA  0.4136
   28     LS       0      74
   29     UD    0.32
          *

   30     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
   31     RD    3900  0.0133     .07          TRAP       6       3
          *

   32     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
   33     PH       1            0.59    1.06    1.77    2.01     2.2    2.58    3.44    4.31
   34     BA  0.2400
   35     LS       0      70
   36     UD    0.33
          *
```

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

  37      KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  38      RD    4500  0.1510     .08           TRAP       6       3
          *

  39      KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  40      PH       1           0.54    0.98    1.63    1.87    2.06    2.44    3.22    4.00
  41      BA  0.3484
  42      LS       0      75
  43      UD    0.26
          *

  44      KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  45      HC       3
          *

  46      KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  47      RD    2000  0.1000     .07           TRAP       6       3
          *

  48      KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  49      PH       1           0.51    0.93    1.56    1.75    1.90    2.21    2.95    3.69
  50      BA  0.0777
  51      LS       0      76
  52      UD    0.24
          *

  53      KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  54      HC       2
          *

  55      KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  56      RD    3100  0.0710     .07           TRAP       6       3
          *

  57      KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  58      PH       1           0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  59      BA   .1056
  60      LS       0      84
  61      UD     .24
          *

  62      KK  CPB10a COMBINE HYDROGRAPH FROM AREA$ B10a W/HYDROGRAPHS FROM AREA B11
  63      HC       2
          *

  64      KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  65      PH       1           0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  66      BA  0.2445
  67      LS       0      76
  68      UD    0.23
          *
```

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

  69      KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  70      RD    1100  0.0770     .07          TRAP      6       3
          *

  71      KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  72      PH       1            0.53   0.96   1.59   1.79   1.94   2.26   3.02   3.77
  73      BA  0.0382
  74      LS       0      84
  75      UD    0.16
          *

  76      KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  77      PH       1            0.50   0.91   1.52   1.72   1.87   2.19   2.93   3.66
  78      BA  0.0591
  79      LS       0      79
  80      UD    0.26
          *

  81      KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  82      HC       3
          *

  83      KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  84      RD    2200  0.0680     .07          TRAP      6       3
          *

  85      KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  86      PH       1            0.47   0.85   1.41   1.61   1.76   2.08   2.78   3.49
  87      BA  0.0240
  88      LS       0      78
  89      UD    0.21
          *

  90      KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  91      HC       3
          *

  92      KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  93      RD     500  0.0500     .07          TRAP      6       3
          *

  94      KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  95      PH       1            0.47   0.85   1.41   1.61   1.76   2.08   2.78   3.49
  96      BA  0.0360
  97      LS       0      87
  98      UD    0.10
          *

  99      KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
 100      HC       2
          *
```

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

101       KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
102       KM       42"RCP ie 5005 and 8'X 8'RCB ie 5014
103       RS       1    STOR      -1
104       SA     .34    .490    .660    .840    1.04    1.26    1.67
105       SE    5010    5012    5014    5016    5018    5020    5025
106       SQ       0    65.5    92.7   167.8   284.6   428.7   594.9   780.5  1073.4
107       SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *

108       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
109       RD     800  0.0563     .07            TRAP       6       3
          *

110       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
111       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
112       BA  0.0126
113       LS       0      87
114       UD    0.10
          *

115       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
116       HC       2
          *

117       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
118       PH       1            0.49    0.89    1.48    1.70    1.86    2.19    2.92    3.64
119       BA  0.0940
120       LS       0      86
121       UD    0.24
          *

122       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
123       RD     400  0.0533     .05            TRAP       6       3
          *

124       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
125       PH       1            0.48    0.87    1.45    1.66    1.82    2.15    2.87    3.60
126       BA   0.051
127       LS       0      78
128       UD     .21
          *

129       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
130       HC       2
          *

131       KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
132       KM       12"RCP ie 5050
133       RS       1    STOR      -1
134       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
135       SE    5050    5051    5052    5054    5056    5058    5060
136       SQ       0       1       2       3       4       5       6       7       8
137       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *
```

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

  138     KK   RT-B5 ROUTE HYDROGRAPH TO confluence w/ B5
  139     RD     700  0.0500     .06           TRAP       6       3
          *

  140     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  141     PH       1            0.49    0.89    1.48     1.7    1.87    2.21    2.94    3.66
  142     BA  0.0290
  143     LS       0      78
  144     UD     .20
          *

  145     KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
  146     RD    2100     .05     .07           TRAP       5       2
          *

  147     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  148     PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
  149     BA  0.0877
  150     LS       0      78
  151     UD    0.22
          *

  152     KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
  153     RD    2325  0.0538    .070           TRAP       5       2
          *

  154     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  155     PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
  156     BA  0.0780
  157     LS       0      80
  158     UD    0.23
          *

  159     KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
  160     HC       4
          *

  161     KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
  162     RD     900  0.0390     .07           TRAP       6       3
          *

  163     KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
  164     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  165     BA  0.0360
  166     LS       0      85
  167     UD    0.14
          *

  168     KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
  169     HC       2
          *
```

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

  170     KK  RT-B2c ROUTE HYDROGRAPH TO outlet of b2c
  171     RD     950  0.0260     .07          TRAP       6       3
          *
  172     KK  SA B2B GENERATE HYDOGRAPH FOR SUB-AREA B2B
  173     PH       1            0.48    0.87    1.45    1.64    1.79    2.10    2.82    3.53
  174     BA  0.0717
  175     LS       0      78
  176     UD     .21
          *
  177     KK  RT-B2C ROUTE HYDROGRAPH TO OUTLET OF B2C
  178     RD    1350  0.0519     .07          TRAP       6       3
          *
  179     KK  SA B2C GENERATE HYDROGRAPH FOR SUB AREA B2C
  180     PH       1            0.48    0.87    1.45    1.64    1.79    2.10    2.82    3.53
  181     BA  0.0656
  182     LS       0      84
  183     UD     .14
          *
  184     KK  CPB10C COMBINE HYDROGRAPH FROM AREAS B10 WITH B2 AND B2C AND B4
  185     HC       4
          *
  186     KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
  187     RD    1400  0.0286     .07          TRAP       6       3
          *
  188     KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
  189     PH       1            0.45    0.83    1.38    1.57    1.72    2.03    2.73    3.42
  190     BA  0.0653
  191     LS       0      82
  192     UD     .12
          *
  193     KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
  194     HC       2
          *
          *
          * *********   WATERSHED SUBAREA C   **************
          *
          *
          *
  195     KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
  196     PH       1            0.62    1.13    1.88    2.12    2.29    2.67    3.53    4.40
  197     BA  0.6580
  198     LS       0      77
  199     UD    0.33
          *
```

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

200       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
201       RD    4800  0.1583     .07           TRAP       6       3
          *

202       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
203       PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.24    4.00
204       BA   .3156
205       LS       0      80
206       UD    0.19
          *

207       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
208       HC       2
          *

209       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
210       RD    5500  0.1091     .07           TRAP       6       3
          *

211       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
212       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    2.96    3.66
213       BA   .3359
214       LS       0      80
215       UD    0.26
          *

216       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
217       HC       2
          *

218       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
219       RD    3000  0.0933     .07           TRAP       6       3
          *

220       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
221       PH       1            0.49    0.89    1.48    1.66    1.80    2.08    2.77    3.46
222       BA  0.1528
223       LS       0      78
224       UD    0.27
          *

225       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
226       HC       2
          *

227       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
228       PH       1            0.53    0.96    1.59    1.80    1.96    2.28    3.02    3.75
229       BA  0.2380
230       LS       0      80
231       UD    0.23
          *
```

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

232       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
233       RD    3200  0.0750     .07          TRAP      6      3
          *

234       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
235       PH       1            0.49   0.89   1.48   1.68   1.83   2.15   2.85   3.55
236       BA   .0956
237       LS       0      77
238       UD    0.25
          *

239       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
240       HC       2
          *

241       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
242       HC       2
          *

243       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
244       RD    1100   0.055     .07          TRAP      6      3
          *

245       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
246       PH       1            0.47   0.85   1.41   1.59   1.73   2.01   2.69   3.37
247       BA  0.1147
248       LS       0      75
249       UD    0.27
          *

250       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
251       HC       2
          *

252       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4
253       RD    1200   .0580     .07          TRAP      6      3
          *

254       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4
255       PH       1            0.47   0.85   1.41   1.60   1.74   2.03   2.72   3.40
256       BA   .0930
257       LS       0      79
258       UD     .20
          *

259       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4
260       PH       1            0.47   0.85   1.41   1.60   1.74   2.03   2.72   3.40
261       BA   .0384
262       LS       0      77
263       UD     .18
          *
```

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

  264     KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
  265     HC       3
          *

  266     KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
  267     KM           36"RCP ie 5085 and 8'x7' at 5106
  268     RS       1    STOR      -1
  269     SA     .02    0.14    0.32    0.61    1.020    1.48    2.14    2.92
  270     SE    5085    5090    5095    5100    5105    5110    5115    5120
  271     SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
  272     SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
  273     SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
  274     SE    5109    5111    5113    5115    5117    5118    5120
          *

  275     KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
  276     RD    1200     .04     .07            TRAP       6       3
          *

  277     KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
  278     PH       1             0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
  279     BA  0.1162
  280     LS       0      76
  281     UD     .27
          *

  282     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
  283     HC       2
          *

  284     KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
  285     KM         10'x6' RCB ie 5020
  286     RS       1    STOR      -1
  287     SA    .270   1.030   1.430   2.340
  288     SE    5020    5025    5030    5035
  289     SQ       0      90     180     270     360     400     540     630     720     810
  290     SQ     900     972
  291     SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
  292     SE  5033.5 5035.00
          *

  293     KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
  294     RD     950     .05     .07            TRAP       6       3
          *

  295     KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
  296     PH       1             0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
  297     BA  0.0999
  298     LS       0      78
  299     UD     .30
          *
```

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

300       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
301       HC       2
          *

302       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
303       PH       1            0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
304       BA  0.1705
305       LS       0      78
306       UD    0.25
          *

307       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
308       HC       2
          *

309       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
310       RD    1500  0.0400     .07          TRAP       6       3
          *

311       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
312       PH       1            0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
313       BA  0.0809
314       LS       0      79
315       UD    0.24
          *

316       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
317       HC       2
          *

318       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
319       HC       2
          *

320       KK    RT-D ROUTE HYDROGRAPH TO OUTLET OF D
321       RD    3200  0.0500     .07          TRAP       6       2
          *

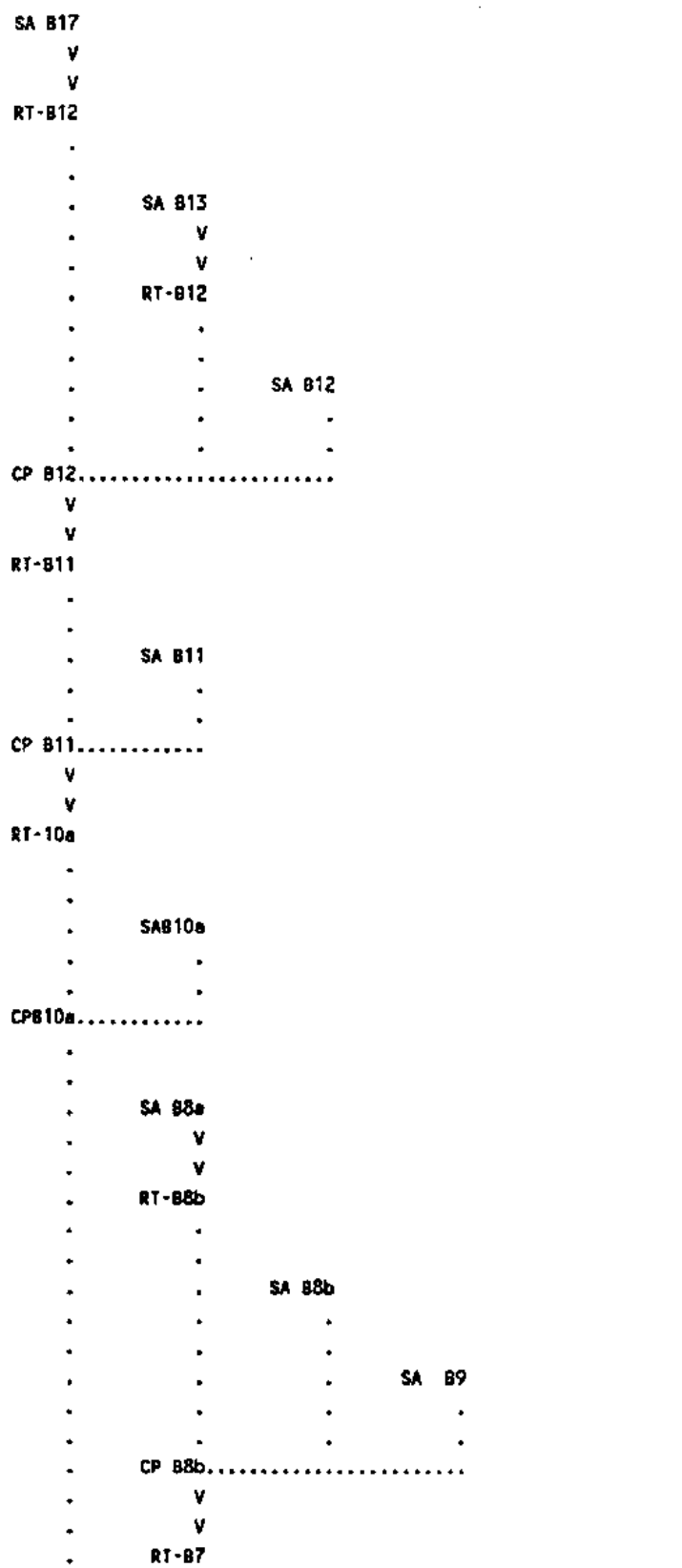
322       KK  SA   D GENERATE HYDOGRAPH FOR SUB-AREA D
323       PH       1            0.45    0.83    1.38    1.56    1.70    1.99    2.69    3.40
324       BA  0.2191
325       LS       0      78
326       UD    0.24
          *

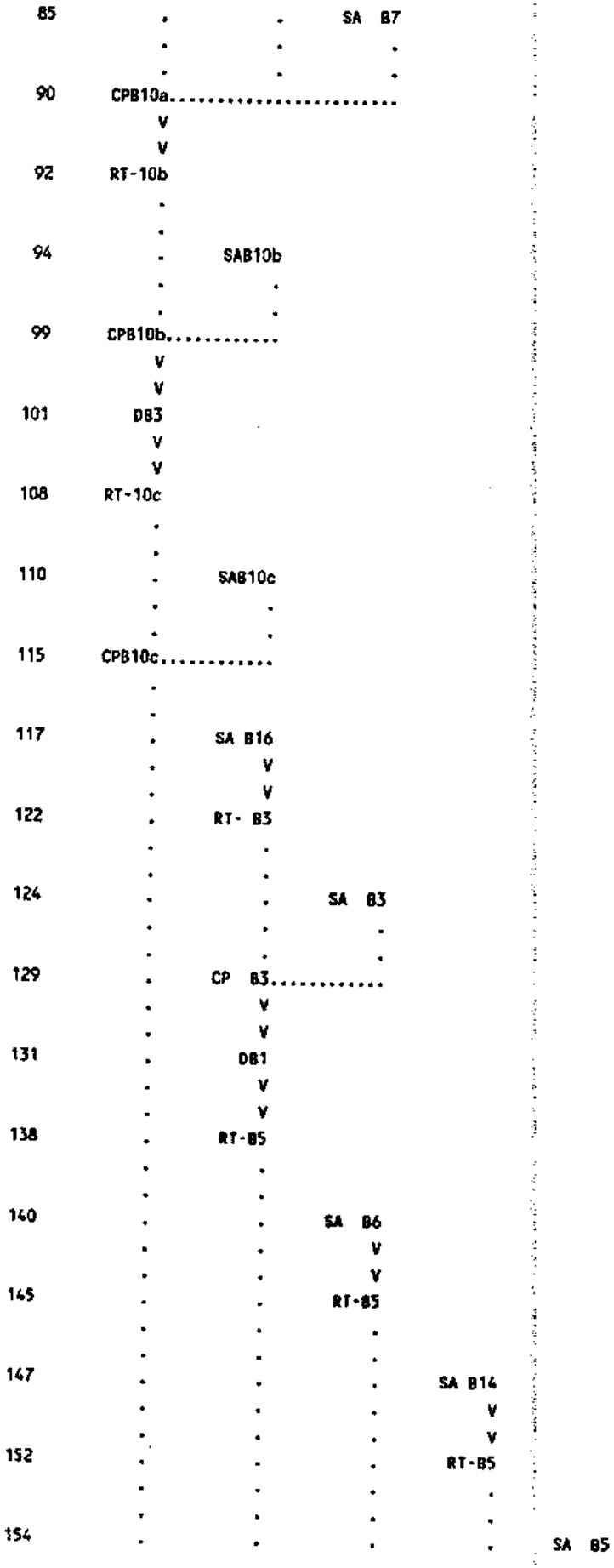
327       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
328       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
329       HC       2
          *
330       ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

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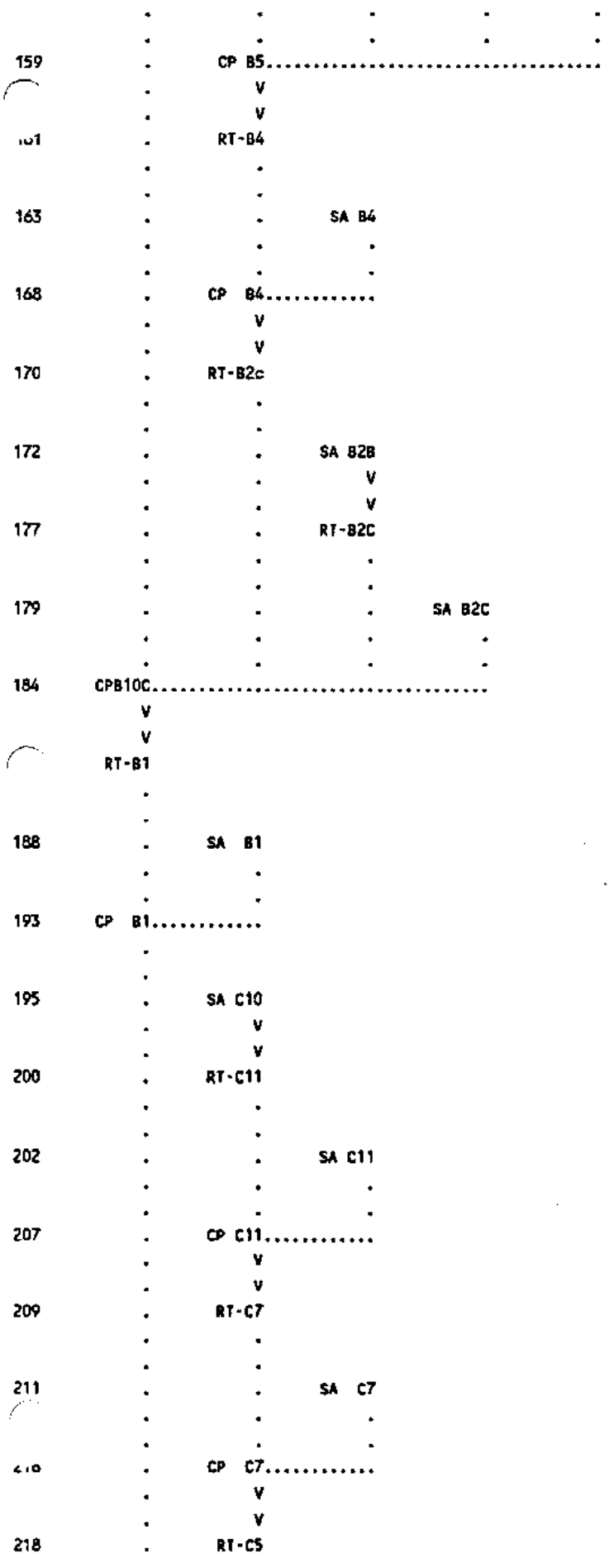
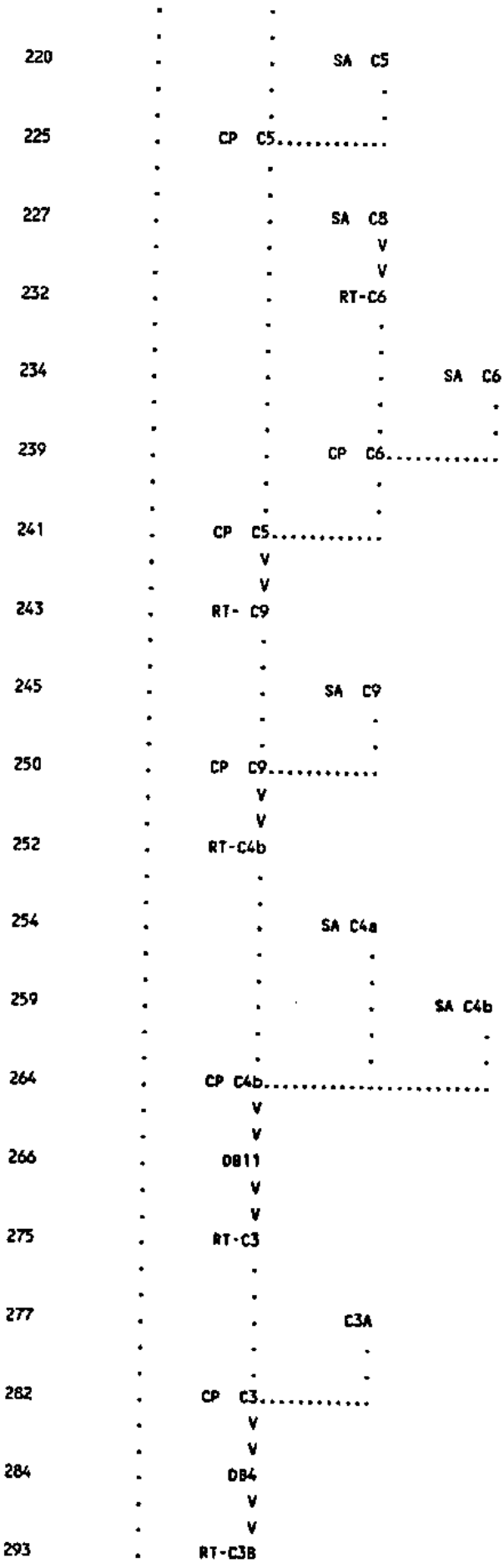
SA B7
90
CPB10a
92
RT-10b
94
SAB10b
99
CPB10b
101
DB3
108
RT-10c
110
SAB10c
115
CPB10c
117
SA B16
122
RT- B3
124
SA B3
129
CP B3
131
DB1
138
RT-B5
140
SA B6
145
RT-B5
147
SA B14
152
RT-B5
154
SA B5


159 CP B5
RT-B4
163 SA B4
168 CP B4
170 RT-B2c
172 SA B2B
177 RT-B2C
179 SA B2C
184 CPB10C
RT-B1
188 SA B1
193 CP B1
195 SA C10
200 RT-C11
202 SA C11
207 CP C11
209 RT-C7
211 SA C7
CP C7
218 RT-C5


220
SA C5
225
CP C5
227
SA C8
V
V
232
RT-C6
234
SA C6
239
CP C6
241
CP C5
V
V
243
RT- C9
245
SA C9
250
CP C9
V
V
252
RT-C4b
254
SA C4a
259
SA C4b
264
CP C4b
V
V
266
DB11
V
V
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RT-C3
277
C3A
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CP C3
V
V
284
DB4
V
V
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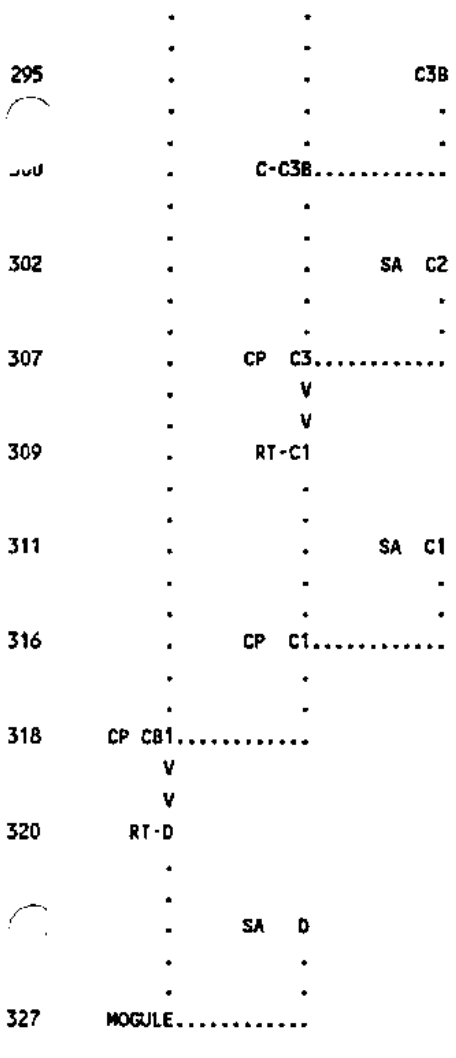
RT-C3B



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             MAY   1991                *
*          VERSION 4.0.1E               *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:35:54   *
*                                       *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748               *
*                                       *
*****************************************
```


```
| SOMERSETT PLANNED UNIT DEVELOPEMENT
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
|                      "PHASE ONE ONLY" 100 YEAR MODEL
| DEVELOPED CONDITION WITH DETENTION BASINS
| Washoe County, Nevada
|
|  100-Year Analysis
|    - For offsite areas
|    - Watersheds measured from USGS 7.5 Minute Quads
|    - Rainfall entered using hypothetical storm option
|    - Rainfall data estimated using revised NOAA precipitation data
|    - Curve number estimates based on Sage-Grass, as described in TR-55
|      (SCS, 1986)  or NEH-4 (SCS, 1972)
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)
|      as modified for the Washoe County Hydrologic Criteria Manual.
|
| File: SSP1-100.DAT                          WRC NEVADA, INC.
| APRIL 1998                                  1575 DELUCCHI LN STE.207A
| Project No.   3011                          Reno, Nevada  89502
|                                            (702)332-3737,FAX 332-3740
```

```
24 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      1441  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE    4   0  ENDING DATE
                 NDTIME     0000  ENDING TIME
                 ICENT        19  CENTURY MARK

           COMPUTATION INTERVAL     0.05 HOURS
               TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA B17	345.	12.40	60.	20.	7.	0.41		
ROUTED TO	RT-B12	344.	12.55	60.	20.	7.	0.41		
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24		
ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24		
HYDROGRAPH AT	SA B12	303.	12.30	47.	16.	5.	0.35		
3 COMBINED AT	CP B12	710.	12.50	137.	45.	15.	1.00		
ROUTED TO	RT-B11	707.	12.55	137.	45.	15.	1.00		
HYDROGRAPH AT	SA B11	66.	12.30	10.	3.	1.	0.08		
2 COMBINED AT	CP B11	745.	12.50	146.	48.	16.	1.08		
ROUTED TO	RT-10a	748.	12.60	146.	48.	16.	1.08		
HYDROGRAPH AT	SAB10a	112.	12.30	16.	5.	2.	0.11		
2 COMBINED AT	CPB10a	798.	12.55	162.	54.	18.	1.19		
HYDROGRAPH AT	SA B8a	219.	12.30	31.	10.	3.	0.24		
ROUTED TO	RT-B8b	218.	12.30	31.	10.	3.	0.24		
HYDROGRAPH AT	SA B8b	59.	12.20	7.	2.	1.	0.04		
HYDROGRAPH AT	SA B9	54.	12.30	8.	3.	1.	0.06		
3 COMBINED AT	CP B8b	317.	12.30	46.	15.	5.	0.34		
ROUTED TO	RT-B7	319.	12.35	46.	15.	5.	0.34		
HYDROGRAPH AT	SA B7	21.	12.25	3.	1.	0.	0.02		
3 COMBINED AT	CPB10a	1022.	12.55	210.	70.	23.	1.55		
ROUTED TO	RT-10b	1021.	12.55	210.	70.	23.	1.55		
HYDROGRAPH AT	SAB10b	63.	12.10	6.	2.	1.	0.04		
2 COMBINED AT	CPB10b	1032.	12.55	216.	72.	24.	1.59		
ROUTED TO	083	914.	12.70	214.	72.	24.	1.59	5024.91	12.70
ROUTED TO	RT-10c	913.	12.70	214.	72.	24.	1.59		
HYDROGRAPH AT	SAB10c	22.	12.10	2.	1.	0.	0.01		

2 COMBINED AT	CPB10c	915.	12.70	216.	73.	24.	1.60		
HYDROGRAPH AT	SA B16	115.	12.30	16.	6.	2.	0.09		
ROUTED TO	RT- B3	115.	12.30	16.	6.	2.	0.09		
HYDROGRAPH AT	SA B3	47.	12.25	6.	2.	1.	0.05		
2 COMBINED AT	CP B3	160.	12.30	23.	8.	3.	0.14		
ROUTED TO	DB1	6.	18.55	6.	5.	3.	0.14	5058.40	18.70
ROUTED TO	RT-B5	6.	18.60	6.	5.	3.	0.14		
HYDROGRAPH AT	SA B6	28.	12.25	4.	1.	0.	0.03		
ROUTED TO	RT-B5	28.	12.35	4.	1.	0.	0.03		
HYDROGRAPH AT	SA B14	85.	12.25	12.	4.	1.	0.09		
ROUTED TO	RT-B5	85.	12.35	12.	4.	1.	0.09		
HYDROGRAPH AT	SA B5	75.	12.25	11.	4.	1.	0.08		
4 COMBINED AT	CP B5	187.	12.35	32.	14.	6.	0.34		
ROUTED TO	RT-B4	186.	12.35	32.	14.	6.	0.34		
HYDROGRAPH AT	SA B4	51.	12.15	6.	2.	1.	0.04		
2 COMBINED AT	CP B4	214.	12.35	37.	16.	6.	0.38		
ROUTED TO	RT-B2c	211.	12.40	38.	16.	6.	0.38		
HYDROGRAPH AT	SA B2B	65.	12.25	9.	3.	1.	0.07		
ROUTED TO	RT-B2C	65.	12.30	9.	3.	1.	0.07		
HYDROGRAPH AT	SA B2C	93.	12.15	10.	3.	1.	0.07		
4 COMBINED AT	CPB10C	1068.	12.65	272.	95.	33.	2.11		
ROUTED TO	RT-B1	1062.	12.70	272.	95.	33.	2.11		
HYDROGRAPH AT	SA B1	85.	12.15	9.	3.	1.	0.07		
2 COMBINED AT	CP B1	1072.	12.70	280.	98.	34.	2.18		
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66		
ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66		
HYDROGRAPH AT	SA C11	423.	12.25	53.	17.	6.	0.32		
2 COMBINED AT	CP C11	934.	12.40	166.	55.	18.	0.97		
ROUTED TO	RT-C7	937.	12.45	166.	55.	18.	0.97		
HYDROGRAPH AT	SA C7	335.	12.30	49.	16.	5.	0.34		

2 COMBINED AT	CP C7	1202.	12.45	215.	71.	24.	1.31		
ROUTED TO	RT-C5	1202.	12.50	215.	71.	24.	1.31		
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15		
2 COMBINED AT	CP C5	1301.	12.45	233.	77.	26.	1.46		
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24		
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24		
HYDROGRAPH AT	SA C6	77.	12.30	11.	4.	1.	0.10		
2 COMBINED AT	CP C6	333.	12.35	47.	16.	5.	0.33		
2 COMBINED AT	CP C5	1590.	12.45	280.	92.	31.	1.80		
ROUTED TO	RT- C9	1590.	12.45	280.	92.	31.	1.80		
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11		
2 COMBINED AT	CP C9	1650.	12.45	292.	96.	32.	1.91		
ROUTED TO	RT-C4b	1637.	12.45	292.	96.	32.	1.91		
HYDROGRAPH AT	SA C4a	85.	12.25	11.	4.	1.	0.09		
HYDROGRAPH AT	SA C4b	33.	12.20	4.	1.	0.	0.04		
3 COMBINED AT	CP C4b	1704.	12.45	307.	101.	34.	2.04		
ROUTED TO	D811	1187.	12.75	302.	101.	34.	2.04	5119.44	12.75
ROUTED TO	RT-C3	1183.	12.75	302.	101.	34.	2.04		
HYDROGRAPH AT	C3A	72.	12.35	11.	4.	1.	0.12		
2 COMBINED AT	CP C3	1210.	12.75	313.	105.	35.	2.16		
ROUTED TO	D84	971.	13.05	313.	105.	35.	2.16	5034.98	13.05
ROUTED TO	RT-C3B	971.	13.10	313.	105.	35.	2.16		
HYDROGRAPH AT	C3B	66.	12.35	11.	4.	1.	0.10		
2 COMBINED AT	C-C3B	982.	13.10	323.	109.	36.	2.26		
HYDROGRAPH AT	SA C2	118.	12.30	17.	6.	2.	0.17		
2 COMBINED AT	CP C3	996.	13.05	339.	114.	38.	2.43		
ROUTED TO	RT-C1	996.	13.10	339.	114.	38.	2.43		
HYDROGRAPH AT	SA C1	62.	12.30	9.	3.	1.	0.08		
2 COMBINED AT	CP C1	1003.	13.10	348.	118.	39.	2.51		
2 COMBINED AT	CP CB1	1946.	12.75	628.	215.	73.	4.69		

ROUTED TO	RT-D	1945.	12.80	628.	215.	73.	4.69
HYDROGRAPH AT	SA D	169.	12.30	25.	8.	3.	0.22
2 COMBINED AT	MOGULE	1987.	12.80	652.	224.	76.	4.91

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-B12	MANE	3.00	343.96	753.00	1.76	3.00	343.95	753.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3878E+02 EXCESS=0.0000E+00 OUTFLOW=0.3877E+02 BASIN STORAGE=0.4304E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0

RT-B11	MANE	2.64	707.00	752.94	1.67	3.00	706.59	753.00	1.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8943E+02 EXCESS=0.0000E+00 OUTFLOW=0.8943E+02 BASIN STORAGE=0.1231E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	747.58	756.00	1.66	3.00	747.58	756.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9568E+02 EXCESS=0.0000E+00 OUTFLOW=0.9568E+02 BASIN STORAGE=0.1953E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	2.21	218.68	739.04	1.56	3.00	218.33	738.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2039E+02 EXCESS=0.0000E+00 OUTFLOW=0.2039E+02 BASIN STORAGE=0.7472E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	318.62	741.00	1.65	3.00	318.62	741.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3014E+02 EXCESS=0.0000E+00 OUTFLOW=0.3014E+02 BASIN STORAGE=0.1686E-02 PERCENT ERROR= 0.0

RT-10b	MANE	0.77	1021.31	753.12	1.68	3.00	1021.13	753.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1386E+03 EXCESS=0.0000E+00 OUTFLOW=0.1386E+03 BASIN STORAGE=0.3239E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.21	913.72	761.50	1.69	3.00	912.74	762.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1428E+03 BASIN STORAGE=0.5010E-03 PERCENT ERROR= 0.0

RT- B3	MANE	0.86	115.38	737.15	2.22	3.00	115.26	738.00	2.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1114E+02 EXCESS=0.0000E+00 OUTFLOW=0.1114E+02 BASIN STORAGE=0.1838E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.82	1128.00	1.99	3.00	5.82	1128.00	1.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1542E+02 EXCESS=0.0000E+00 OUTFLOW=0.1542E+02 BASIN STORAGE=0.3789E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	28.43	741.00	1.62	3.00	28.43	741.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2505E+01 EXCESS=0.0000E+00 OUTFLOW=0.2506E+01 BASIN STORAGE=0.1383E-02 PERCENT ERROR= -0.1

RT-B5	MANE	3.00	85.03	741.00	1.69	3.00	85.03	741.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7902E+01 EXCESS=0.0000E+00 OUTFLOW=0.7904E+01 BASIN STORAGE=0.1597E-02 PERCENT ERROR= 0.0

RT-B4	MANE	2.42	186.59	742.38	1.81	3.00	186.02	741.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3287E+02 EXCESS=0.0000E+00 OUTFLOW=0.3287E+02 BASIN STORAGE=0.6151E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	2.85	213.01	743.51	1.83	3.00	211.38	744.00	1.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3674E+02 EXCESS=0.0000E+00 OUTFLOW=0.3674E+02 BASIN STORAGE=0.7489E-03 PERCENT ERROR= 0.0

RT-B2C	MANE	3.00	64.54	738.00	1.52	3.00	64.54	738.00	1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5812E+01 EXCESS=0.0000E+00 OUTFLOW=0.5813E+01 BASIN STORAGE=0.9532E-03 PERCENT ERROR= 0.0

RT-B1	MANE	2.60	1063.22	760.37	1.72	3.00	1062.20	762.00	1.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1936E+03 EXCESS=0.0000E+00 OUTFLOW=0.1936E+03 BASIN STORAGE=0.1103E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	677.76	747.00	2.13	3.00	677.76	747.00	2.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7463E+02 EXCESS=0.0000E+00 OUTFLOW=0.7464E+02 BASIN STORAGE=0.2751E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	936.53	747.00	2.10	3.00	936.53	747.00	2.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1090E+03 EXCESS=0.0000E+00 OUTFLOW=0.1090E+03 BASIN STORAGE=0.3500E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	1202.36	750.00	2.01	3.00	1202.36	750.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1406E+03 EXCESS=0.0000E+00 OUTFLOW=0.1406E+03 BASIN STORAGE=0.1623E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	258.93	741.00	1.84	3.00	258.93	741.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT- C9	MANE	1.44	1591.05	746.83	1.91	3.00	1589.84	747.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1834E+03 EXCESS=0.0000E+00 OUTFLOW=0.1834E+03 BASIN STORAGE=0.7932E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	1.53	1641.62	748.28	1.87	3.00	1637.38	747.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1908E+03 EXCESS=0.0000E+00 OUTFLOW=0.1908E+03 BASIN STORAGE=0.7260E-03 PERCENT ERROR= 0.0

RT-C3	MANE	1.91	1184.58	767.36	1.85	3.00	1182.97	765.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2010E+03 EXCESS=0.0000E+00 OUTFLOW=0.2010E+03 BASIN STORAGE=0.8256E-03 PERCENT ERROR= 0.0

RT-C3B	MANE	1.48	970.91	786.19	1.81	3.00	970.90	786.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2084E+03 EXCESS=0.0000E+00 OUTFLOW=0.2084E+03 BASIN STORAGE=0.6612E-03 PERCENT ERROR= 0.0

RT-C1	MANE	2.51	995.76	786.11	1.75	3.00	995.69	786.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2270E+03 EXCESS=0.0000E+00 OUTFLOW=0.2270E+03 BASIN STORAGE=0.1197E-02 PERCENT ERROR= 0.0

RT-D	MANE	3.00	1945.26	768.00	1.73	3.00	1945.26	768.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4329E+03 EXCESS=0.0000E+00 OUTFLOW=0.4329E+03 BASIN STORAGE=0.2033E-02 PERCENT ERROR= 0.0

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

APPENDIX F - PROJECT PHASING ANALYSIS

HEC-1 Output
5-Year Proposed Condition Analysis
Phase I to II Improvements Only

WRC NEVADA, INC.

April 17, 1998

```
*****************************************
*                                       *
*  ?OD HYDROGRAPH PACKAGE  (HEC-1)      *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:36:42   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   |                      "PHASE I TO II" 5 YEAR MODEL                      |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                              |
    6     ID   | Washoe County, Nevada                                                  |
    7     ID   |                                                                        |
    8     ID   |  5-Year Analysis                                                       |
    9     ID   |    - For offsite areas                                                 |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   11     ID   |    - Rainfall entered using hypothetical storm option                  |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   14     ID   |      (SCS, 1986)  or NEH-4 (SCS, 1972)                                 |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   17     ID   |                                                                        |
   18     ID   | File: SSP2-005.DAT                          WRC NEVADA, INC.           |
   19     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A  |
   20     ID   | Project No.   3011                          Reno, Nevada  89502        |
   21     ID   |                                            (702)332-3737,FAX 332-3740 |
   22     ID   ==========================================================================
   23     IT       3       0       0     441
   24     IO       5       0       0
          *
          * *********   WATERSHED SUBAREA B   ************
          *
          *
          *

   25     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
   26     PH        1            0.22    0.40    0.67    0.91    1.10    1.50    1.96    2.43
   27     BA  0.4136
   28     LS        0      74
   29     UD    0.32
          *

   30     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
   31     RD    3900  0.0133     .07           TRAP       6       3
          *

   32     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
   33     PH        1            0.22    0.40    0.67    0.91    1.10    1.48    1.98    2.48
   34     BA  0.2400
   35     LS        0      70
   36     UD    0.33
          *

   37     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
   38     RD    4500  0.1510     .08           TRAP       6       3
          *
```

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

  39      KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  40      PH       1           0.20    0.37    0.61    0.85    1.03    1.40    1.85    2.30
  41      BA  0.3484
  42      LS       0      75
  43      UD    0.26
          *

  44      KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  45      HC       3
          *

  46      KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  47      RD    2000  0.1000     .07           TRAP       6       3
          *

  48      KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  49      PH       1           0.19    0.35    0.58    0.79    0.95    1.27    1.70    2.12
  50      BA  0.0777
  51      LS       0      76
  52      UD    0.24
          *

  53      KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  54      HC       2
          *

  55      KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  56      RD    3100  0.0710     .07           TRAP       6       3
          *

  57      KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  58      PH       1           0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  59      BA  0.1056
  60      LS       0      84
  61      UD    0.24
          *

  62      KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  63      HC       2
          *

  64      KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  65      PH       1           0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  66      BA  0.2445
  67      LS       0      76
  68      UD    0.23
          *

  69      KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  70      RD    1100  0.0770     .07           TRAP       6       3
          *
```

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

  71      KK  SA 88b GENERATE HYDOGRAPH FOR SUB-AREA 88b
  72      PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
  73      BA  0.0382
  74      LS       0      84
  75      UD    0.16
          *

  76      KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  77      PH       1            0.19    0.34    0.57    0.78    0.93    1.26    1.69    2.11
  78      BA  0.0591
  79      LS       0      79
  80      UD    0.26
          *

  81      KK  CP 88b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  82      HC       3
          *

  83      KK   RT-87 ROUTE HYDROGRAPH FROM AREA 88 TO OUTLET OF AREA B7
  84      RD    2200  0.0680     .07            TRAP       6       3
          *

  85      KK  SA  87 GENERATE HYDOGRAPH FOR SUB-AREA 87
  86      PH       1            0.18    0.32    0.53    0.73    0.89    1.21    1.62    2.04
  87      BA  0.0240
  88      LS       0      78
  89      UD    0.21
          *

  90      KK  CP810a COMBINE HYDROGRAPH FROM AREAS 87 W/HYDROGRAPHS FROM AREA 86, 88 & 89
  91      HC       3
          *

  92      KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  93      RD     500   .0500     .07            TRAP       6       3
          *

  94      KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  95      PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  96      BA  0.0360
  97      LS       0      87
  98      UD    0.10
          *

  99      KK  CP810b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
 100      HC       2
          *

 101      KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
 102      KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
 103      RS       1    STOR      -1
 104      SA     .34    .490    .660    .840   1.04    1.26    1.67
 105      SE    5010    5012    5014    5016    5018    5020    5025
 106      SQ       0    65.5    92.7   167.8   284.6   428.7   594.9   780.5  1073.4
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
107       SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *
108       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
109       RD     800  0.0563     .07            TRAP       6       3
          *
110       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
111       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
112       BA  0.0126
113       LS       0      87
114       UD    0.10
          *
115       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
116       HC       2
          *
117       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
118       PH       1            0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
119       BA    .094
120       LS       0      86
121       UD    0.24
          *
122       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
123       RD     400  0.0533     .05            TRAP       6       3
          *
124       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
125       PH       1            0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
126       BA  0.0520
127       LS       0      79
128       UD    0.20
          *
129       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
130       HC       2
          *
131       KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
132       KM        12"RCP ie 5050
133       RS       1    STOR      -1
134       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
135       SE    5050    5051    5052    5054    5056    5058    5060
136       SQ       0       1       2       3       4       5       6       7       8
137       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *
138       KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
139       RD     700  0.0500     .06            TRAP       6       3
          *
```

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

140       KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
141       PH       1            0.18   0.33   0.56   0.77   0.93   1.27   1.69   2.11
142       BA    .029
143       LS       0      78
144       UD    .20
          *

145       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
146       RD    2100     .05     .07          TRAP       5       2
          *

147       KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
148       PH       1            0.19   0.34   0.57   0.79   0.95   1.30   1.73   2.16
149       BA  0.0877
150       LS       0      78
151       UD    0.22
          *

152       KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
153       RD    2325  0.0538    .070          TRAP       5       2
          *

154       KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
155       PH       1            0.18   0.33   0.56   0.76   0.92   1.25   1.65   2.06
156       BA    .078
157       LS       0      80
158       UD    0.23
          *

159       KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND D81
160       HC       4
          *

161       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
162       RD     900  0.0390     .07          TRAP       6       3
          *

163       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
164       PH       1            0.18   0.32   0.53   0.73   0.88   1.20   1.60   2.01
165       BA  0.0360
166       LS       0      85
167       UD    0.14
          *

168       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
169       HC       2
          *

170       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
171       RD     950  0.0260     .07          TRAP       6       3
          *
```

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

  172     KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
  173     PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
  174     BA  0.0242
  175     LS       0      78
  176     UD    0.19
          *

  177     KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
  178     RD    1800  0.0890     .07           TRAP       6       3
          *

  179     KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
  180     PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
  181     BA  0.1255
  182     LS       0      86
  183     UD    0.15
          *

  184     KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
  185     HC       2
          *

  186     KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
  187     KM        36" RCP ie 5045
  188     RS       1    STOR      -1
  189     SA    .027    .149    .360    .658
  190     SE    5045    5050    5055    5060
  191     SQ       0      10      20      30      40      50      60      70      80      90
  192     SQ     120   128.4
  193     SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
  194     SE  5054.8    5060
          *

  195     KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
  196     RD    2100  0.0430     .07           TRAP       6       3
          *

  197     KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
  198     PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
  199     BA  0.0592
  200     LS       0      84
  201     UD    0.19
          *

  202     KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
  203     HC       3
          *

  204     KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
  205     HC       2
          *
```

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

  206     KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
  207     RD    1400  0.0286     .07          TRAP       6       3
          *

  208     KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
  209     PH       1            0.17    0.31    0.52    0.71    0.86    1.17    1.57    1.97
  210     BA  0.0527
  211     LS       0      83
  212     UD    0.15
          *

  213     KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
  214     HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    *************
          *
          *
          *

  215     KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
  216     PH       1            0.23    0.42    0.71    0.95    1.14    1.53    2.03    2.53
  217     BA  0.6580
  218     LS       0      77
  219     UD    0.33
          *

  220     KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
  221     RD    4800  0.1583     .07          TRAP       6       3
          *

  222     KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
  223     PH       1            0.22    0.39    0.65    0.89    1.06    1.43    1.87    2.30
  224     BA   .3156
  225     LS       0      80
  226     UD    0.19
          *

  227     KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
  228     HC       2
          *

  229     KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
  230     RD    5500  0.1091     .07          TRAP       6       3
          *

  231     KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
  232     PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.71    2.11
  233     BA   .3359
  234     LS       0      80
  235     UD    0.26
          *
```

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

  236     KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
  237     HC       2
          *

  238     KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
  239     RD    3000  0.0933     .07           TRAP       6      3
          *

  240     KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
  241     PH       1            0.18    0.33    0.56    0.75    0.89    1.20    1.60    2.00
  242     BA  0.1528
  243     LS       0      78
  244     UD    0.27
          *

  245     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
  246     HC       2
          *

  247     KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
  248     PH       1            0.20    0.36    0.60    0.81    0.97    1.31    1.74    2.16
  249     BA  0.2380
  250     LS       0      80
  251     UD    0.23
          *

  252     KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
  253     RD    3200  0.0750     .07           TRAP       6      3
          *

  254     KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
  255     PH       1            0.18    0.33    0.56    0.76    0.91    1.24    1.64    2.05
  256     BA  0.0956
  257     LS       0      77
  258     UD    0.25
          *

  259     KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
  260     HC       2
          *

  261     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
  262     HC       2
          *

  263     KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
  264     RD    1100   0.055     .07           TRAP       6      3
          *
```

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

265       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
266       PH       1            0.18    0.32    0.53    0.72    0.86    1.16    1.55    1.95
267       BA  0.1147
268       LS       0      75
269       UD    0.27
          *

270       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
271       HC       2
          *

272       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
273       RD    1200  0.0580     .07            TRAP       6       3
          *

274       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
275       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
276       BA  0.0930
277       LS       0      79
278       UD    0.20
          *

279       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
280       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
281       BA  0.0384
282       LS       0      77
283       UD    0.18
          *

284       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
285       HC       3
          *

286       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
287       KM           36"RCP ie 5085 and 8'x7' at 5106
288       RS       1    STOR      -1
289       SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
290       SE    5085    5090    5095    5100    5105    5110    5115    5120
291       SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
292       SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
293       SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
294       SE    5109    5111    5113    5115    5117    5118    5120
          *

295       KK  RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
296       RD    1200     .04     .07            TRAP       6       3
          *

297       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
298       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
299       BA     .12
300       LS       0      76
301       UD     .27
          *
```

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

302       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
303       HC       2
          *

304       KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
305       KM         10'x6' RCB ie 5020
306       RS       1    STOR      -1
307       SA    .270   1.030   1.430   2.340
308       SE    5020    5025    5030    5035
309       SQ       0      90     180     270     360     400     540     630     720     810
310       SQ     900     972
311       SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
312       SE  5033.5 5035.00
          *

313       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
314       RD     950     .05     .07           TRAP       6       3
          *

315       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
316       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
317       BA      .1
318       LS       0      78
319       UD     .30
          *

320       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
321       HC       2
          *

322       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
323       PH       1            0.17    0.30    0.50    0.67    0.80    1.07    1.45    1.84
324       BA  0.1705
325       LS       0      78
326       UD    0.25
          *

327       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
328       HC       2
          *

329       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
330       RD    1500  0.0400     .07           TRAP       6       3
          *

331       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
332       PH       1            0.17    0.30    0.50    0.69    0.83    1.13    1.53    1.92
333       BA  0.0809
334       LS       0      79
335       UD    0.24
          *
```

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

336       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
337       HC       2
          *

338       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
339       HC       2
          *

340       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
341       RD    3200  0.0500     .07           TRAP       6       2
          *

342       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
343       PH       1           0.17    0.31    0.52    0.70    0.85    1.14    1.55    1.96
344       BA  0.2191
345       LS       0      78
346       UD    0.24
          *

347       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
348       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
349       HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    *************
          *
          *

350       KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
351       PH       1           0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
352       BA   .0726
353       LS       0      82
354       UD     .13
          *

355       KK    DB13 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
356       KM          10" RCP ie 5066
357       RS       1    STOR      -1
358       SA    .238    .367    .519    .703    .919   1.184
359       SE    5066    5068    5070    5072    5074    5075
360       SQ       0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0     9.0
361       SQ    10.0
362       SE  5066.0  5066.6  5067.1  5067.7  5068.6  5069.9  5071.4  5074.0 5075.02 5075.03
363       SE  5075.1
          *

364       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
365       RD    2700     .11     .07           TRAP      10       4
          *
```

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

366       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
367       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
368       BA     .11
369       LS       0      79
370       UD     .20
          *

371       KK      F1 Combine Hydrographs at F1
372       HC       2
          *

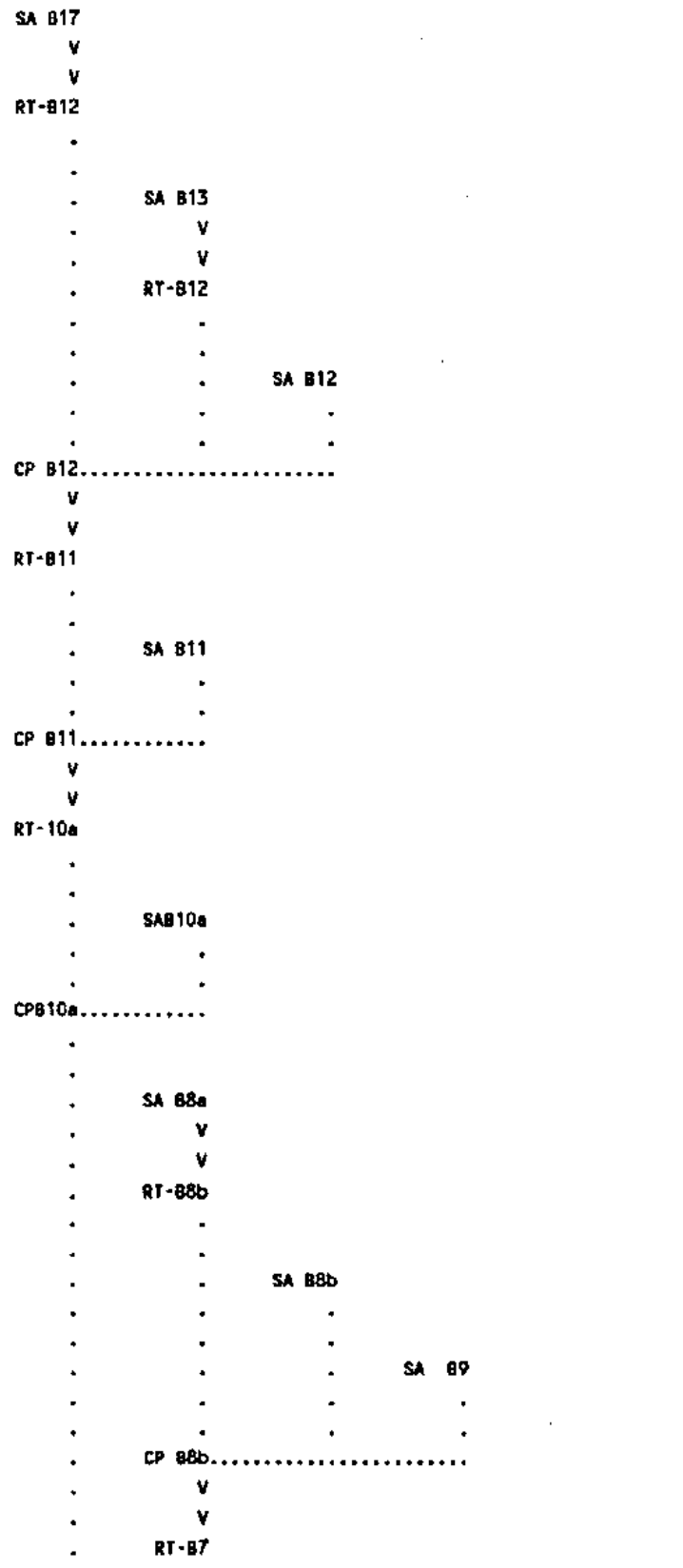
373       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
374       PH       1            0.18    0.33    0.54    0.74    0.89    1.20    1.62    2.04
375       BA  0.1352
376       LS       0      79
377       UD    0.25
          *

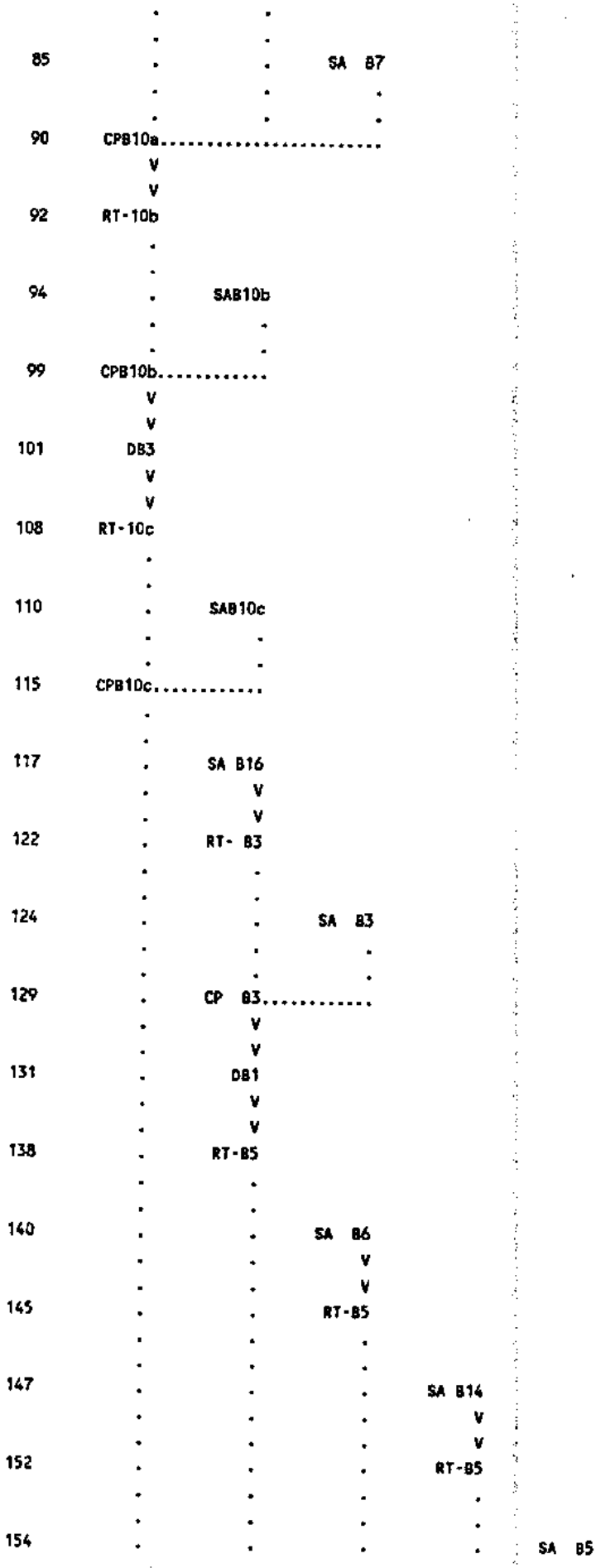
378       KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
379       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
380       HC       2
381       ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

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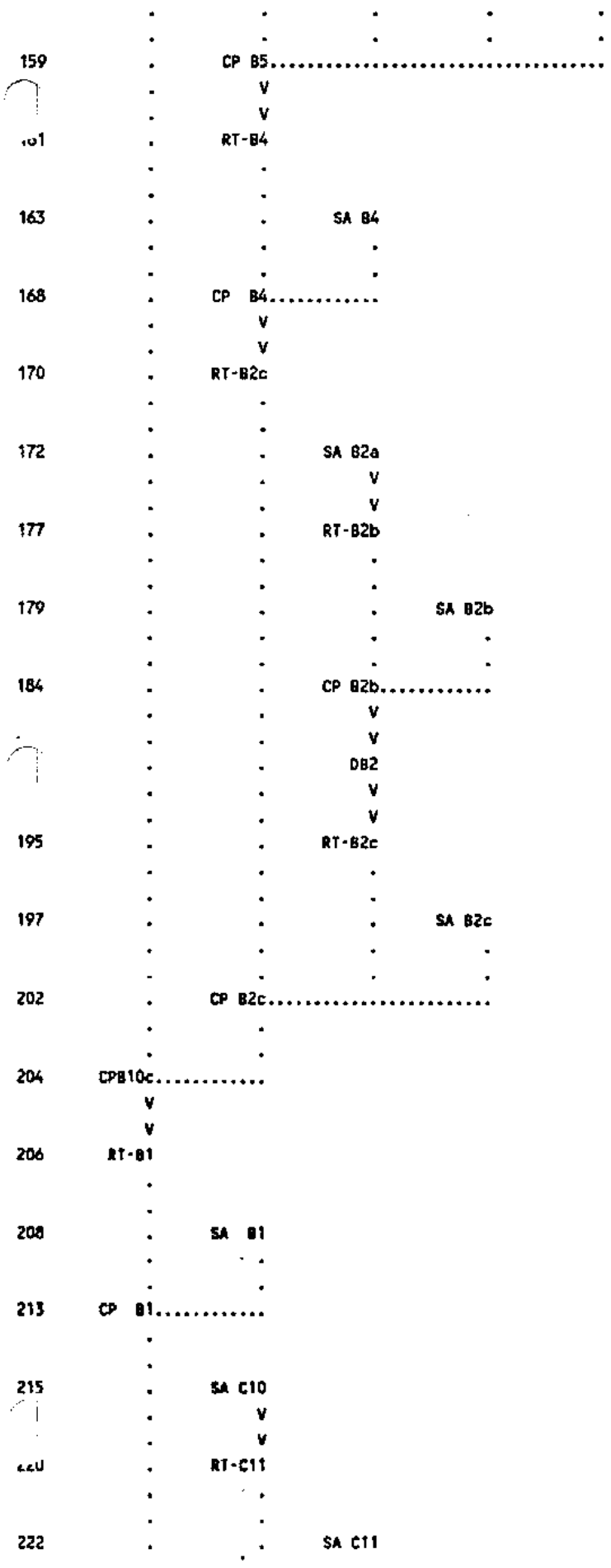
SA B7
90
CPB10a
92
RT-10b
94
SAB10b
99
CPB10b
101
DB3
108
RT-10c
110
SAB10c
115
CPB10c
117
SA B16
122
RT- B3
124
SA B3
129
CP B3
131
DB1
138
RT-B5
140
SA B6
145
RT-B5
147
SA B14
152
RT-B5
154
SA B5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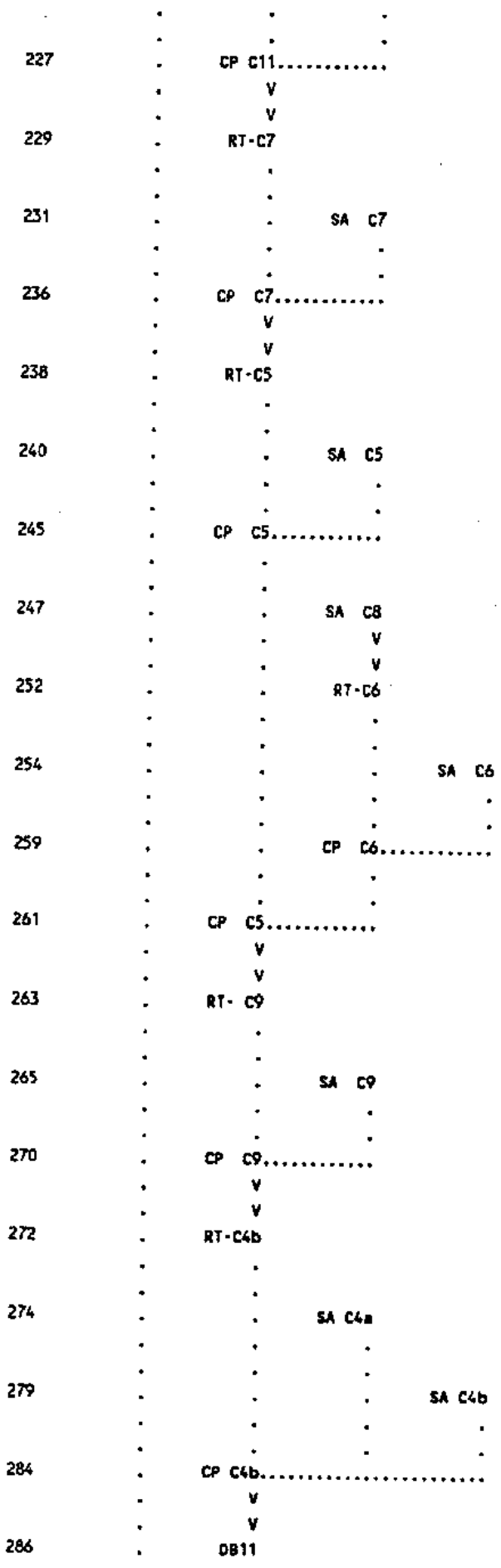
RT-B4
163 SA B4
168 CP B4
170 RT-B2c
172 SA B2a
177 RT-B2b
179 SA B2b
184 CP B2b
DB2
195 RT-B2c
197 SA B2c
202 CP B2c
204 CPB10c
206 RT-B1
208 SA B1
213 CP B1
215 SA C10
RT-C11
222 SA C11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CP C11
229
RT-C7
231
SA C7
236
CP C7
238
RT-C5
240
SA C5
245
CP C5
247
SA C8
252
RT-C6
254
SA C6
259
CP C6
261
CP C5
263
RT- C9
265
SA C9
270
CP C9
272
RT-C4b
274
SA C4a
279
SA C4b
284
CP C4b
286
DB11

```
                .          V
                .          V
295             .       RT-C3
                .          .
                .          .
297             .          .          C3A
                .          .           .
                .          .           .
302             .       CP  C3.............
                .          V
                .          V
304             .         D84
                .          V
                .          V
313             .       RT-C3B
                .          .
                .          .
315             .          .          C3B
                .          .           .
                .          .           .
320             .       C-C3B.............
                .          .
                .          .
322             .          .       SA  C2
                .          .           .
                .          .           .
327             .       CP  C3.............
                .          V
                .          V
                .       RT-C1
                .          .
                .          .
331             .          .       SA  C1
                .          .           .
                .          .           .
336             .       CP  C1.............
                .          .
                .          .
338     CP CB1.............
            V
            V
340      RT-D1
            .
            .
342         .       SA  D1
            .          .
            .          .
347     MODULE.............
            .
            .
350         .       SA F1A
            .          V
            .          V
355         .         D813
            .          V
            .          V
364         .       RT-F1B
            .          .
            .          .
366         .          .       SA F1B
```

```
                .          .          .
                .          .          .
371             .          F1.....
                .          .
                .          .
373             .          .     SA   F2
                .          .          .
                .          .          .
378             .     MOGULW.....
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
* RUN DATE  05/06/98  TIME  14:36:42    *
*****************************************
```

```
*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*        609 SECOND STREET              *
*      DAVIS, CALIFORNIA 95616          *
*        (916) 551-1748                 *
*                                       *
*****************************************
```

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================================================================================
| SOMERSETT PLANNED UNIT DEVELOPEMENT                                          |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                     |
|                      "PHASE I TO II" 5 YEAR MODEL                            |
| DEVELOPED CONDITION WITH DETENTION BASINS                                    |
| Washoe County, Nevada                                                        |
|                                                                              |
|  5-Year Analysis                                                             |
|    - For offsite areas                                                       |
|    - Watersheds measured from USGS 7.5 Minute Quads                          |
|    - Rainfall entered using hypothetical storm option                        |
|    - Rainfall data estimated using revised NOAA precipitation data           |
|    - Curve number estimates based on Sage-Grass, as described in TR-55       |
|      (SCS, 1986)  or NEH-4 (SCS, 1972)                                       |
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)    |
|      as modified for the Washoe County Hydrologic Criteria Manual.           |
|                                                                              |
| File: SSP2-005.DAT                              WRC NEVADA, INC.             |
| APRIL 1998                                      1575 DELUCCHI LN STE.207A    |
| Project No.   3011                              Reno, Nevada  89502          |
|                                                (702)332-3737,FAX 332-3740    |
================================================================================
```

```
24 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         1441  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      4    0  ENDING DATE
               NDTIME         0000  ENDING TIME
               ICENT           19  CENTURY MARK

             COMPUTATION INTERVAL     0.05 HOURS
                  TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA B17	64.	12.40	19.	6.	2.	0.41		
ROUTED TO	RT-B12	63.	12.70	19.	6.	2.	0.41		
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24		
ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24		
HYDROGRAPH AT	SA B12	55.	12.30	15.	5.	2.	0.35		
3 COMBINED AT	CP B12	116.	12.60	41.	14.	5.	1.00		
ROUTED TO	RT-B11	117.	12.70	41.	14.	5.	1.00		
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP B11	122.	12.70	44.	15.	5.	1.08		
ROUTED TO	RT-10a	124.	12.80	44.	15.	5.	1.08		
HYDROGRAPH AT	SAB10a	28.	12.30	6.	2.	1.	0.11		
2 COMBINED AT	CPB10a	133.	12.80	49.	17.	6.	1.19		
HYDROGRAPH AT	SA B8a	41.	12.30	10.	3.	1.	0.24		
ROUTED TO	RT-B8b	41.	12.35	10.	3.	1.	0.24		
HYDROGRAPH AT	SA B8b	15.	12.20	3.	1.	0.	0.04		
HYDROGRAPH AT	SA B9	11.	12.30	3.	1.	0.	0.06		
3 COMBINED AT	CP B8b	63.	12.30	15.	5.	2.	0.34		
ROUTED TO	RT-B7	63.	12.40	15.	5.	2.	0.34		
HYDROGRAPH AT	SA B7	4.	12.25	1.	0.	0.	0.02		
3 COMBINED AT	CPB10a	163.	12.80	65.	23.	8.	1.55		
ROUTED TO	RT-10b	162.	12.80	65.	23.	8.	1.55		
HYDROGRAPH AT	SAB10b	17.	12.10	3.	1.	0.	0.04		
2 COMBINED AT	CPB10b	165.	12.80	67.	24.	8.	1.59		
ROUTED TO	DB3	143.	12.95	67.	24.	8.	1.59	5015.33	12.95
ROUTED TO	RT-10c	143.	13.00	67.	24.	8.	1.59		
HYDROGRAPH AT	SAB10c	6.	12.10	1.	0.	0.	0.01		

2 COMBINED AT	CPB10c	144.	13.00	68.	24.	8.	1.60		
HYDROGRAPH AT	SA B16	31.	12.30	7.	2.	1.	0.09		
ROUTED TO	RT- B3	31.	12.30	7.	2.	1.	0.09		
HYDROGRAPH AT	SA B3	11.	12.25	2.	1.	0.	0.05		
2 COMBINED AT	CP B3	41.	12.30	9.	3.	1.	0.15		
ROUTED TO	DB1	4.	17.20	4.	3.	1.	0.15	5053.80	17.45
ROUTED TO	RT-B5	4.	17.50	4.	3.	1.	0.15		
HYDROGRAPH AT	SA B6	6.	12.25	1.	0.	0.	0.03		
ROUTED TO	RT-B5	6.	12.40	1.	0.	0.	0.03		
HYDROGRAPH AT	SA B14	17.	12.25	4.	1.	0.	0.09		
ROUTED TO	RT-B5	17.	12.40	4.	1.	0.	0.09		
HYDROGRAPH AT	SA B5	16.	12.30	4.	1.	0.	0.08		
4 COMBINED AT	CP B5	39.	12.40	13.	6.	2.	0.34		
ROUTED TO	RT-B4	40.	12.45	13.	6.	2.	0.34		
HYDROGRAPH AT	SA B4	13.	12.15	2.	1.	0.	0.04		
2 COMBINED AT	CP B4	45.	12.40	15.	7.	2.	0.38		
ROUTED TO	RT-B2c	45.	12.50	15.	7.	2.	0.38		
HYDROGRAPH AT	SA B2a	4.	12.25	1.	0.	0.	0.02		
ROUTED TO	RT-B2b	4.	12.35	1.	0.	0.	0.02		
HYDROGRAPH AT	SA B2b	50.	12.20	8.	3.	1.	0.13		
2 COMBINED AT	CP B2b	51.	12.20	9.	3.	1.	0.15		
ROUTED TO	DB2	46.	12.25	9.	3.	1.	0.15	5048.61	12.25
ROUTED TO	RT-B2c	46.	12.35	9.	3.	1.	0.15		
HYDROGRAPH AT	SA B2c	18.	12.25	4.	1.	0.	0.06		
3 COMBINED AT	CP B2c	96.	12.40	27.	11.	4.	0.59		
2 COMBINED AT	CPB10c	182.	12.95	95.	35.	12.	2.19		
ROUTED TO	RT-B1	182.	13.00	95.	35.	12.	2.19		
HYDROGRAPH AT	SA B1	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B1	185.	13.00	97.	36.	12.	2.24		
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66		

ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66		
HYDROGRAPH AT	SA C11	97.	12.25	19.	6.	2.	0.32		
2 COMBINED AT	CP C11	198.	12.45	58.	20.	7.	0.97		
ROUTED TO	RT-C7	198.	12.55	58.	20.	7.	0.97		
HYDROGRAPH AT	SA C7	73.	12.30	17.	6.	2.	0.34		
2 COMBINED AT	CP C7	243.	12.55	75.	25.	8.	1.31		
ROUTED TO	RT-C5	243.	12.60	75.	25.	8.	1.31		
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15		
2 COMBINED AT	CP C5	257.	12.60	81.	27.	9.	1.46		
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24		
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24		
HYDROGRAPH AT	SA C6	14.	12.30	4.	1.	0.	0.10		
2 COMBINED AT	CP C6	70.	12.40	16.	5.	2.	0.33		
2 COMBINED AT	CP C5	306.	12.50	97.	33.	11.	1.80		
ROUTED TO	RT- C9	305.	12.55	97.	33.	11.	1.80		
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11		
2 COMBINED AT	CP C9	313.	12.50	100.	34.	11.	1.91		
ROUTED TO	RT-C4b	313.	12.60	100.	34.	11.	1.91		
HYDROGRAPH AT	SA C4a	17.	12.25	4.	1.	0.	0.09		
HYDROGRAPH AT	SA C4b	6.	12.25	1.	0.	0.	0.04		
3 COMBINED AT	CP C4b	322.	12.55	104.	36.	12.	2.04		
ROUTED TO	D811	179.	13.15	104.	36.	12.	2.04	5105.92	13.15
ROUTED TO	RT-C3	179.	13.20	104.	36.	12.	2.04		
HYDROGRAPH AT	C3A	11.	12.35	3.	1.	0.	0.12		
2 COMBINED AT	CP C3	183.	13.20	108.	37.	12.	2.16		
ROUTED TO	D84	180.	13.30	107.	37.	12.	2.16	5023.39	13.30
ROUTED TO	RT-C38	180.	13.35	107.	37.	12.	2.16		
HYDROGRAPH AT	C38	12.	12.35	3.	1.	0.	0.10		
2 COMBINED AT	C-C38	184.	13.35	111.	38.	13.	2.26		
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17		

2 COMBINED AT	CP C3	190.	13.35	116.	40.	13.	2.43		
ROUTED TO	RT-C1	190.	13.40	116.	40.	13.	2.43		
HYDROGRAPH AT	SA C1	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP C1	193.	13.40	118.	41.	14.	2.51		
2 COMBINED AT	CP CB1	360.	13.20	215.	77.	26.	4.75		
ROUTED TO	RT-D1	361.	13.30	215.	77.	26.	4.75		
HYDROGRAPH AT	SA D1	31.	12.30	8.	3.	1.	0.22		
2 COMBINED AT	MOGULE	369.	13.30	223.	80.	27.	4.97		
HYDROGRAPH AT	SA F1A	22.	12.15	4.	1.	0.	0.07		
ROUTED TO	DB13	4.	13.40	3.	1.	0.	0.07	5068.24	13.45
ROUTED TO	RT-F1B	4.	13.60	3.	1.	0.	0.07		
HYDROGRAPH AT	SA F1B	20.	12.25	4.	2.	1.	0.11		
2 COMBINED AT	F1	21.	12.25	7.	3.	1.	0.18		
HYDROGRAPH AT	SA F2	24.	12.30	6.	2.	1.	0.14		
2 COMBINED AT	MOGULW	44.	12.25	13.	5.	2.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-812	MANE	3.00	63.43	762.00	0.57	3.00	63.43	762.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1254E+02 EXCESS=0.0000E+00 OUTFLOW=0.1254E+02 BASIN STORAGE=0.4176E-02 PERCENT ERROR= 0.0

RT-812	MANE	3.00	24.40	756.00	0.45	3.00	24.40	756.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5701E+01 EXCESS=0.0000E+00 OUTFLOW=0.5704E+01 BASIN STORAGE=0.2449E-02 PERCENT ERROR= -0.1

RT-811	MANE	3.00	117.05	762.00	0.53	3.00	117.05	762.00	0.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2822E+02 EXCESS=0.0000E+00 OUTFLOW=0.2822E+02 BASIN STORAGE=0.1209E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	124.08	768.00	0.52	3.00	124.08	768.00	0.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3019E+02 EXCESS=0.0000E+00 OUTFLOW=0.3020E+02 BASIN STORAGE=0.1735E-02 PERCENT ERROR= 0.0

RT-88b	MANE	3.00	40.63	741.00	0.51	3.00	40.63	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6638E+01 EXCESS=0.0000E+00 OUTFLOW=0.6639E+01 BASIN STORAGE=0.6975E-03 PERCENT ERROR= 0.0

RT-87	MANE	3.00	63.17	744.00	0.56	3.00	63.17	744.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1027E+02 EXCESS=0.0000E+00 OUTFLOW=0.1027E+02 BASIN STORAGE=0.1635E-02 PERCENT ERROR= 0.0

RT-10b	MANE	1.28	162.32	767.67	0.55	3.00	162.13	768.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4535E+02 EXCESS=0.0000E+00 OUTFLOW=0.4535E+02 BASIN STORAGE=0.3287E-03 PERCENT ERROR= 0.0

RT-10c	MANE	2.03	142.80	779.42	0.56	3.00	142.76	780.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4710E+02 EXCESS=0.0000E+00 OUTFLOW=0.4710E+02 BASIN STORAGE=0.4990E-03 PERCENT ERROR= 0.0

RT- 83	MANE	1.24	31.09	737.62	0.93	3.00	31.01	738.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4638E+01 EXCESS=0.0000E+00 OUTFLOW=0.4638E+01 BASIN STORAGE=0.2021E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	3.94	1056.00	0.80	3.00	3.94	1056.00	0.80

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6202E+01 EXCESS=0.0000E+00 OUTFLOW=0.6202E+01 BASIN STORAGE=0.3965E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.64	744.00	0.55	3.00	5.64	744.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8464E+00 EXCESS=0.0000E+00 OUTFLOW=0.8468E+00 BASIN STORAGE=0.1350E-02 PERCENT ERROR= -0.2

RT-B5	MANE	3.00	17.17	744.00	0.58	3.00	17.17	744.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2697E+01 EXCESS=0.0000E+00 OUTFLOW=0.2697E+01 BASIN STORAGE=0.1645E-02 PERCENT ERROR= -0.1

RT-B4	MANE	3.00	39.60	747.00	0.67	3.00	39.60	747.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1224E+02 EXCESS=0.0000E+00 OUTFLOW=0.1224E+02 BASIN STORAGE=0.6108E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	45.03	750.00	0.69	3.00	45.03	750.00	0.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1378E+02 EXCESS=0.0000E+00 OUTFLOW=0.1378E+02 BASIN STORAGE=0.7468E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	4.46	741.00	0.51	3.00	4.46	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6543E+00 EXCESS=0.0000E+00 OUTFLOW=0.6546E+00 BASIN STORAGE=0.1060E-02 PERCENT ERROR= -0.2

RT-B2c	MANE	3.00	46.06	741.00	0.82	3.00	46.06	741.00	0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6539E+01 EXCESS=0.0000E+00 OUTFLOW=0.6540E+01 BASIN STORAGE=0.1375E-02 PERCENT ERROR= 0.0

RT-B1	MANE	3.00	181.66	780.00	0.60	3.00	181.66	780.00	0.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7047E+02 EXCESS=0.0000E+00 OUTFLOW=0.7047E+02 BASIN STORAGE=0.1079E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	198.11	753.00	0.76	3.00	198.11	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3927E+02 EXCESS=0.0000E+00 OUTFLOW=0.3927E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	243.33	756.00	0.72	3.00	243.33	756.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5056E+02 EXCESS=0.0000E+00 OUTFLOW=0.5056E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT- C9	MANE	2.28	306.83	751.45	0.68	3.00	305.11	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6534E+02 EXCESS=0.0000E+00 OUTFLOW=0.6534E+02 BASIN STORAGE=0.7993E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	2.42	313.20	753.57	0.66	3.00	312.74	756.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6752E+02 EXCESS=0.0000E+00 OUTFLOW=0.6752E+02 BASIN STORAGE=0.6963E-03 PERCENT ERROR= 0.0

RT-C3	MANE	3.00	179.06	792.00	0.65	3.00	179.06	792.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7087E+02 EXCESS=0.0000E+00 OUTFLOW=0.7087E+02 BASIN STORAGE=0.1068E-02 PERCENT ERROR= 0.0

RT-C3B	MANE	2.36	180.41	801.57	0.63	3.00	180.35	801.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7314E+02 EXCESS=0.0000E+00 OUTFLOW=0.7314E+02 BASIN STORAGE=0.5891E-03 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	189.77	804.00	0.61	3.00	189.77	804.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7898E+02 EXCESS=0.0000E+00 OUTFLOW=0.7898E+02 BASIN STORAGE=0.1193E-02 PERCENT ERROR= 0.0

RT-01	MANE	3.00	360.60	798.00	0.61	3.00	360.60	798.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1534E+03 EXCESS=0.0000E+00 OUTFLOW=0.1534E+03 BASIN STORAGE=0.1988E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	3.60	822.00	0.65	3.00	3.60	822.00	0.65

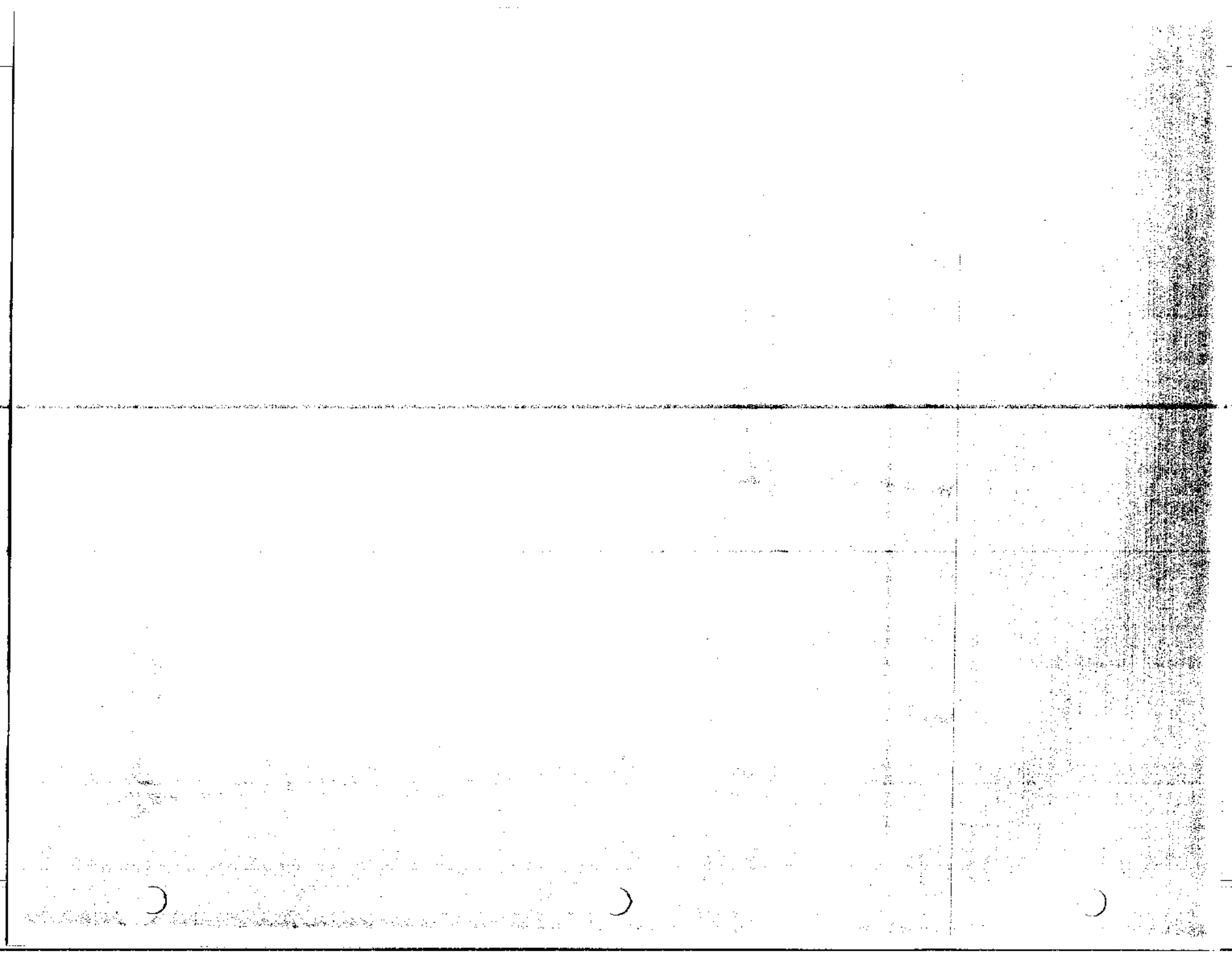
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2511E+01 EXCESS=0.0000E+00 OUTFLOW=0.2511E+01 BASIN STORAGE=0.1447E-02 PERCENT ERROR= -0.1

Appendix F - Project Phasing Analysis

HEC-1 Output
100-Year Proposed Condition Analysis
Phase I to II Improvements Only

WRC NEVADA, INC.

April 17, 1998



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*                                         *
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)       *
*            MAY  1991                    *
*         VERSION 4.0.1E                  *
*     Lahey F77L-EM/32 version 5.01       *
*       Dodson & Associates, Inc.         *
*  RUN DATE 05/06/98  TIME  14:36:19      *
*******************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X       XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX  XXXXX          XXX
```

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

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

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

          *DIAGRAM
  1       ID   ==========================================================================
  2       ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                     |
  3       ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                |
  4       ID   |                        "PHASE I TO II" 100 YEAR MODEL                   |
  5       ID   | DEVELOPED CONDITION WITH DETENTION BASINS                               |
  6       ID   | Washoe County, Nevada                                                   |
  7       ID   |                                                                         |
  8       ID   |  100-Year Analysis                                                      |
  9       ID   |    - For offsite areas                                                  |
 10       ID   |    - Watersheds measured from USGS 7.5 Minute Quads                     |
 11       ID   |    - Rainfall entered using hypothetical storm option                   |
 12       ID   |    - Rainfall data estimated using revised NOAA precipitation data      |
 13       ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55  |
 14       ID   |       (SCS, 1986)  or NEH-4 (SCS, 1972)                                |
 15       ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
 16       ID   |      as modified for the Washoe County Hydrologic Criteria Manual.      |
 17       ID   |                                                                         |
 18       ID   | File: SSP2-100.DAT                          WRC NEVADA, INC.            |
 19       ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A   |
 20       ID   | Project No.   3011                          Reno, Nevada  89502         |
 21       ID   |                                             (702)332-3737,FAX 332-3740  |
 22       ID   ==========================================================================
 23       IT      3       0       0    1441
 24       IO      5       0       0
          *
          * *********    WATERSHED SUBAREA B    *************
          *
          *
          *

 25       KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
 26       PH       1            0.59    1106    1.77    2.02    2.21    2.60    3.41    4.22
 27       BA  0.4136
 28       LS       0      74
 29       UD    0.32

 30       KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
 31       RD    3900  0.0133     .07          TRAP       6       3
          *

 32       KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
 33       PH       1            0.59    1106    1.77    2.01     2.2    2.58    3.44    4.31
 34       BA  0.2400
 35       LS       0      70
 36       UD    0.33
          *

 37       KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
 38       RD    4500  0.1510     .08          TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 39       KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
 40       PH       1            0.54    0.98    1.63    1.87    2.06    2.44    3.22    4.00
 41       BA  0.3484
 42       LS       0      75
 43       UD    0.26
          *

 44       KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
 45       HC       3
          *

 46       KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
 47       RD    2000  0.1000     .07           TRAP       6       3
          *

 48       KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
 49       PH       1            0.51    0.93    1.56    1.75    1.90    2.21    2.95    3.69
 50       BA  0.0777
 51       LS       0      76
 52       UD    0.24
          *

 53       KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
 54       HC       2
          *

 55       KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
 56       RD    3100  0.0710     .07           TRAP       6       3
          *

 57       KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
 58       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
 59       BA  0.1056
 60       LS       0      84
 61       UD    0.24
          *

 62       KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
 63       HC       2
          *

 64       KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
 65       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
 66       BA  0.2445
 67       LS       0      76
 68       UD    0.23
          *

 69       KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
 70       RD    1100  0.0770     .07           TRAP       6       3
          *
```

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

  71      KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  72      PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  73      BA  0.0382
  74      LS       0      84
  75      UD    0.16
          *

  76      KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  77      PH       1            0.50    0.91    1.52    1.72    1.87    2.19    2.93    3.66
  78      BA  0.0591
  79      LS       0      79
  80      UD    0.26
          *

  81      KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  82      HC       3
          *

  83      KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  84      RD    2200  0.0680     .07           TRAP       6       3
          *

  85      KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  86      PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  87      BA  0.0240
  88      LS       0      78
  89      UD    0.21
          *

  90      KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  91      HC       3
          *

  92      KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  93      RD     500  0.0500     .07           TRAP       6       3
          *

  94      KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  95      PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  96      BA  0.0360
  97      LS       0      87
  98      UD    0.10
          *

  99      KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
 100      HC       2
          *

 101      KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
 102      KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
 103      RS       1    STOR       -1
 104      SA     .34    .490     .660    .840    1.04    1.26    1.67
 105      SE    5010    5012     5014    5016    5018    5020    5025
 106      SQ       0    65.5     92.7   167.8   284.6   428.7   594.9   780.5  1073.4
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
  107     SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *
  108     KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
  109     RD     800  0.0563     .07          TRAP       6       3
          *
  110     KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
  111     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  112     BA  0.0126
  113     LS       0      87
  114     UD    0.10
          *
  115     KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
  116     HC       2
          *
  117     KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
  118     PH       1            0.49    0.89    1.48    1.70    1.86    2.19    2.92    3.64
  119     BA   0.094
  120     LS       0      86
  121     UD    0.24
          *
  122     KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
  123     RD     400  0.0533     .05          TRAP       6       3
          *
  124     KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
  125     PH       1            0.48    0.87    1.45    1.66    1.82    2.15    2.87    3.60
  126     BA  0.0520
  127     LS       0      79
  128     UD    0.20
          *
  129     KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
  130     HC       2
          *
  131     KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
  132     KM        12"RCP to 5050
  133     RS       1    STOR      -1
  134     SA    .063    .101   1.151   1.283   1.425   1.571   1.901
  135     SE    5050    5051    5052    5054    5056    5058    5060
  136     SQ       0       1       2       3       4       5       6       7       8
  137     SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *
  138     KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
  139     RD     700  0.0500     .06          TRAP       6       3
          *
```

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

  140     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  141     PH       1            0.49    0.89    1.48    1.7    1.87    2.21    2.94    3.66
  142     BA  0.0290
  143     LS       0      78
  144     UD     .20
          *

  145     KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
  146     RD    2100     .05     .07           TRAP       5       2
          *

  147     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  148     PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
  149     BA  0.0877
  150     LS       0      78
  151     UD    0.22
          *

  152     KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
  153     RD    2325  0.0538    .070           TRAP       5       2
          *

  154     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  155     PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
  156     BA  0.0780
  157     LS       0      80
  158     UD    0.23
          *

  159     KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
  160     HC       4
          *

  161     KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
  162     RD     900  0.0390     .07           TRAP       6       3
          *

  163     KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
  164     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  165     BA  0.0360
  166     LS       0      85
  167     UD    0.14
          *

  168     KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
  169     HC       2
          *

  170     KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
  171     RD     950  0.0260     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

172       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
173       PH       1            0.50    0.91    1.52    1.73    1.89    2.21    2.98    3.75
174       BA  0.0242
175       LS       0      78
176       UD    0.19
          *

177       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
178       RD    1800  0.0890     .07          TRAP       6       3
          *

179       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
180       PH       1            0.48    0.87    1.45    1.64    1.79    2.10    2.82    3.53
181       BA  0.1255
182       LS       0      86
183       UD    0.15
          *

184       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
185       HC       2
          *

186       KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
187       KM        36" RCP ie 5045
188       RS       1    STOR      -1
189       SA    .027    .149    .360    .658
190       SE    5045    5050    5055    5060
191       SQ       0      10      20      30      40      50      60      70      80      90
192       SQ     120   128.4
193       SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
194       SE  5054.8    5060
          *

195       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
196       RD    2100  0.0430     .07          TRAP       6       3
          *

197       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
198       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
199       BA  0.0592
200       LS       0      84
201       UD    0.19
          *

202       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
203       HC       3
          *

204       KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
205       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  206     KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
  207     RD    1400  0.0286     .07           TRAP      6      3
          *

  208     KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
  209     PH       1           0.45   0.83   1.38   1.57   1.72   2.03   2.73   3.42
  210     BA  0.0527
  211     LS       0      83
  212     UD    0.15
          *

  213     KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
  214     HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    ************
          *
          *
          *

  215     KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
  216     PH       1           0.62   1.13   1.88   2.12   2.29   2.67   3.53   4.40
  217     BA  0.6580
  218     LS       0      77
  219     UD    0.33
          *

  220     KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
  221     RD    4800  0.1583     .07           TRAP      6      3
          *

  222     KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
  223     PH       1           0.57   1.04   1.74   1.96   2.13   2.49   3.24   4.00
  224     BA   .3156
  225     LS       0      80
  226     UD    0.19
          *

  227     KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
  228     HC       2
          *

  229     KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
  230     RD    5500  0.1091     .07           TRAP      6      3
          *

  231     KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
  232     PH       1           0.53   0.96   1.59   1.79   1.94   2.26   2.96   3.66
  233     BA   .3359
  234     LS       0      80
  235     UD    0.26
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  236     KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
  237     HC       2
          *

  238     KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
  239     RD    3000  0.0933     .07          TRAP      6      3
          *

  240     KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
  241     PH       1            0.49    0.89    1.48    1.66    1.80    2.08    2.77    3.46
  242     BA  0.1528
  243     LS       0      78
  244     UD    0.27
          *

  245     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
  246     HC       2
          *

  247     KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
  248     PH       1            0.53    0.96    1.59    1.80    1.96    2.28    3.02    3.75
  249     BA  0.2380
  250     LS       0      80
  251     UD    0.23
          *

  252     KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
  253     RD    3200  0.0750     .07          TRAP      6      3
          *

  254     KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
  255     PH       1            0.49    0.89    1.48    1.68    1.83    2.15    2.85    3.55
  256     BA  0.0956
  257     LS       0      77
  258     UD    0.25
          *

  259     KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
  260     HC       2
          *

  261     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
  262     HC       2
          *

  263     KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
  264     RD    1100   0.055     .07          TRAP      6      3
          *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  265     KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
  266     PH       1            0.47    0.85    1.41    1.59    1.73    2.01    2.69    3.37
  267     BA  0.1147
  268     LS       0      75
  269     UD    0.27
          *

  270     KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
  271     HC       2
          *

  272     KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
  273     RD    1200  0.0580     .07           TRAP       6       3
          *

  274     KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
  275     PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
  276     BA  0.0930
  277     LS       0      79
  278     UD    0.20
          *

  279     KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
  280     PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
  281     BA  0.0384
  282     LS       0      77
  283     UD    0.18
          *

  284     KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
  285     HC       3
          *

  286     KK    D811 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
  287     KM           36"RCP ie 5085 and 8'x7' at 5106
  288     RS       1    STOR      -1
  289     SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
  290     SE    5085    5090    5095    5100    5105    5110    5115    5120
  291     SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
  292     SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
  293     SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
  294     SE    5109    5111    5113    5115    5117    5118    5120
          *

  295     KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
  296     RD    1200     .04     .07           TRAP       6       3
          *

  297     KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
  298     PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
  299     BA  0.1162
  300     LS       0      76
  301     UD     .27
          *
```

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

  302     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
  303     HC       2
          *

  304     KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
  305     KM         10'x6' RCB ie 5020
  306     RS       1    STOR      -1
  307     SA    .270   1.030   1.430   2.340
  308     SE    5020    5025    5030    5035
  309     SQ       0      90     180     270     360     400     540     630     720     810
  310     SQ     900     972
  311     SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
  312     SE  5033.5 5035.00
          *

  313     KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
  314     RD     950     .05     .07           TRAP       6       3
          *

  315     KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
  316     PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
  317     BA  0.0999
  318     LS       0      78
  319     UD     .30
          *

  320     KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
  321     HC       2
          *

  322     KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
  323     PH       1            0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
  324     BA  0.1705
  325     LS       0      78
  326     UD    0.25
          *

  327     KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
  328     HC       2
          *

  329     KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
  330     RD    1500  0.0400     .07           TRAP       6       3
          *

  331     KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
  332     PH       1            0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
  333     BA  0.0809
  334     LS       0      79
  335     UD    0.24
          *
```

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

  336     KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
  337     HC       2
          *

  338     KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
  339     HC       2
          *

  340     KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
  341     RD    3200  0.0500     .07            TRAP       6       2
          *

  342     KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
  343     PH       1            0.45    0.83    1.38    1.56    1.70    1.99    2.69    3.40
  344     BA  0.2191
  345     LS       0      78
  346     UD    0.24
          *

  347     KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  348     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  349     HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    *************
          *
          *

  350     KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
  351     PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
  352     BA   .0726
  353     LS       0      82
  354     UD     .13
          *
          *

  355     KK    DB13 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
  356     KM           10" RCP ie 5066
  357     RS       1    STOR      -1
  358     SA    .238    .367    .519    .703    .919   1.184
  359     SE    5066    5068    5070    5072    5074    5075
  360     SQ       0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0     9.0
  361     SQ    10.0
  362     SE  5066.0  5066.6  5067.1  5067.7  5068.6  5069.9  5071.4  5074.0 5075.02 5075.03
  363     SE  5075.1
          *

  364     KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
  365     RD    2700     .11     .07            TRAP      10       4
          *
```

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

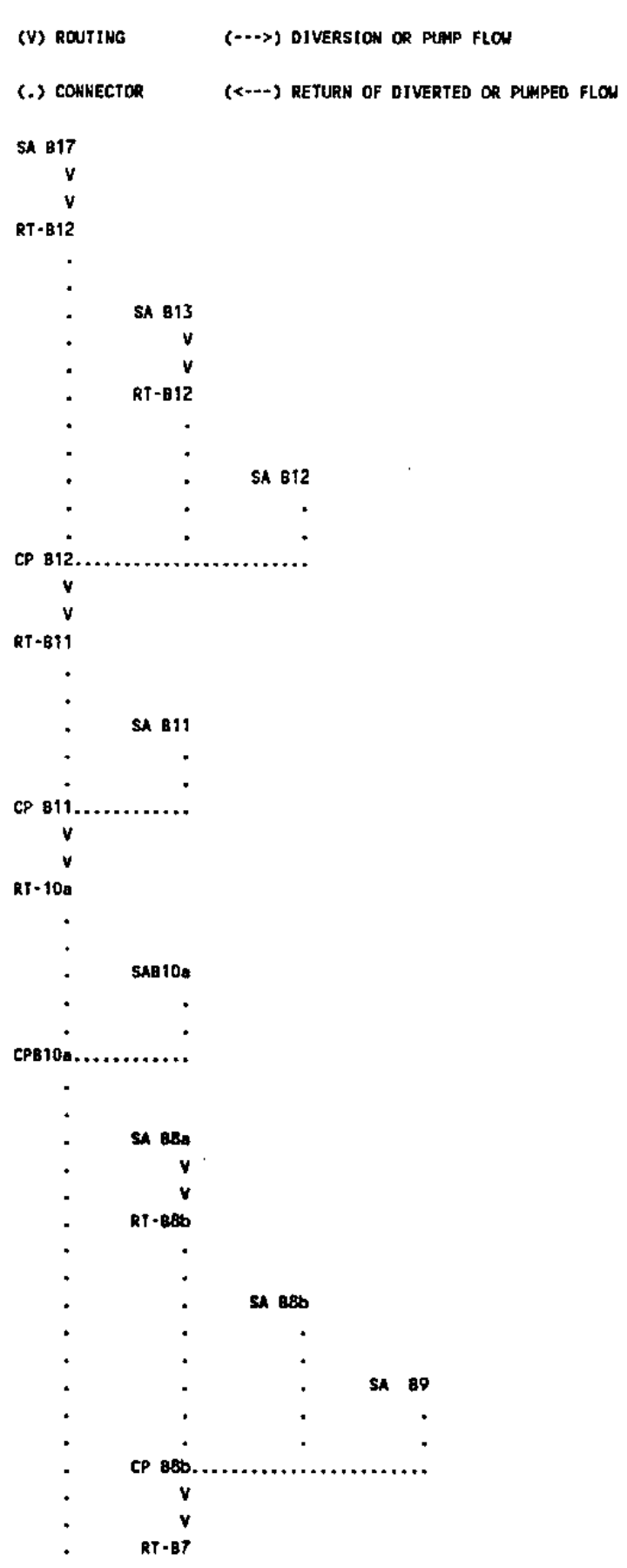
366       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
367       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
368       BA     .11
369       LS       0      79
370       UD     .20
          *

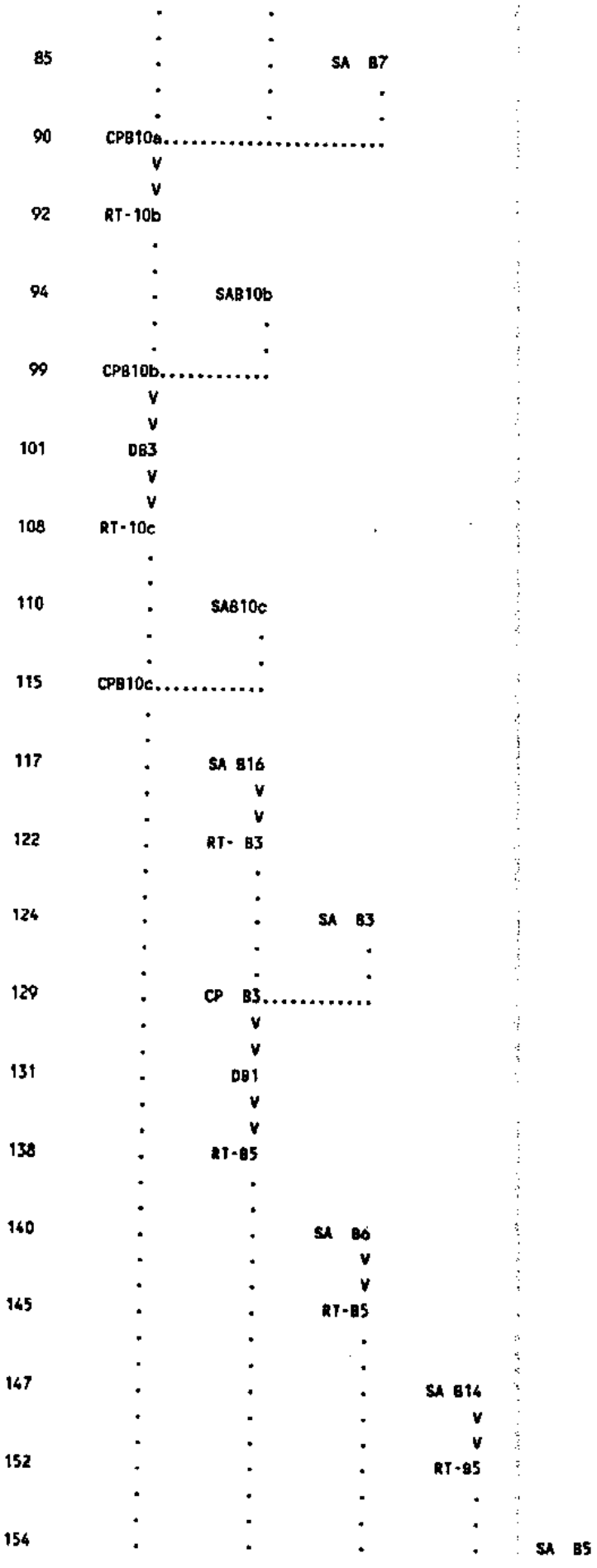
371       KK       F1 Combine Hydrographs at F1
372       HC       2
          *

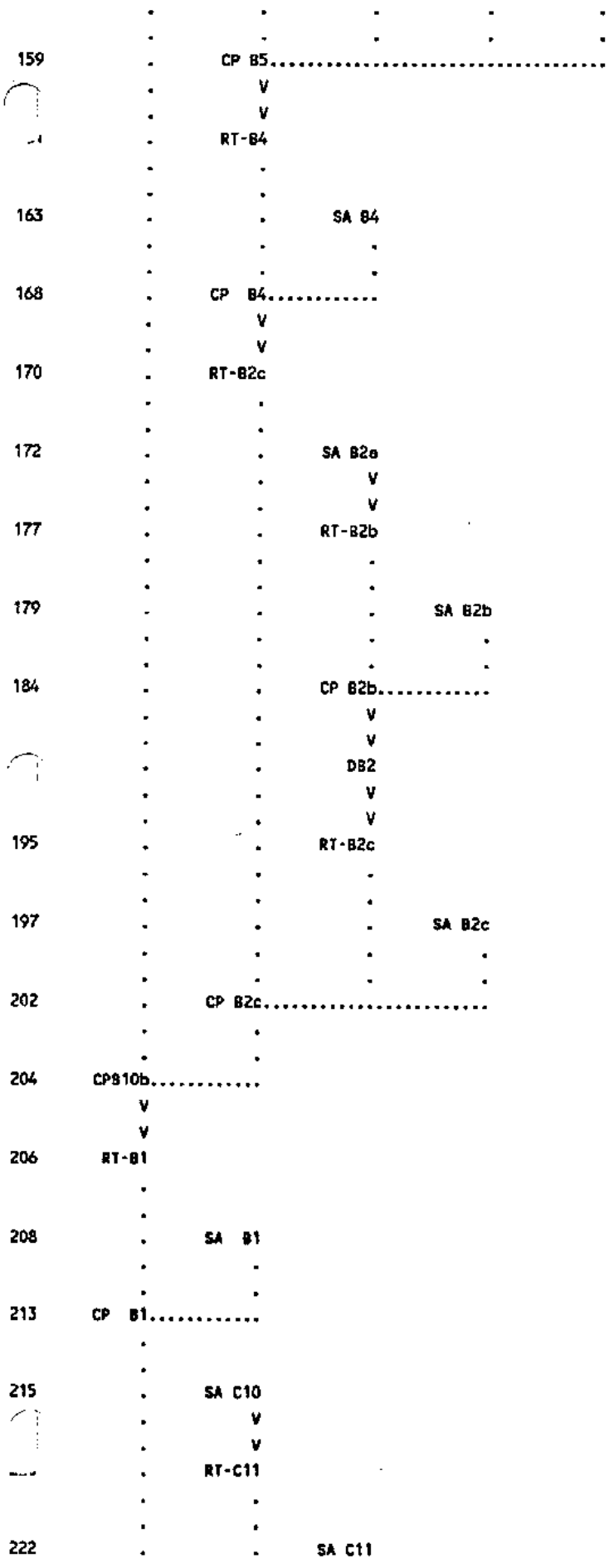
373       KK  SA   F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
374       PH       1            0.48    0.87    1.45    1.64    1.78    2.08    2.80    3.53
375       BA  0.1352
376       LS       0      79
377       UD    0.25
          *

378       KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
379       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
380       HC       2
381       ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK




85
SA B7
90
CPB10a
92
RT-10b
94
SAB10b
99
CPB10b
101
DB3
108
RT-10c
110
SAB10c
115
CPB10c
117
SA B16
122
RT- B3
124
SA B3
129
CP B3
131
DB1
138
RT-B5
140
SA B6
145
RT-B5
147
SA B14
152
RT-B5
154
SA B5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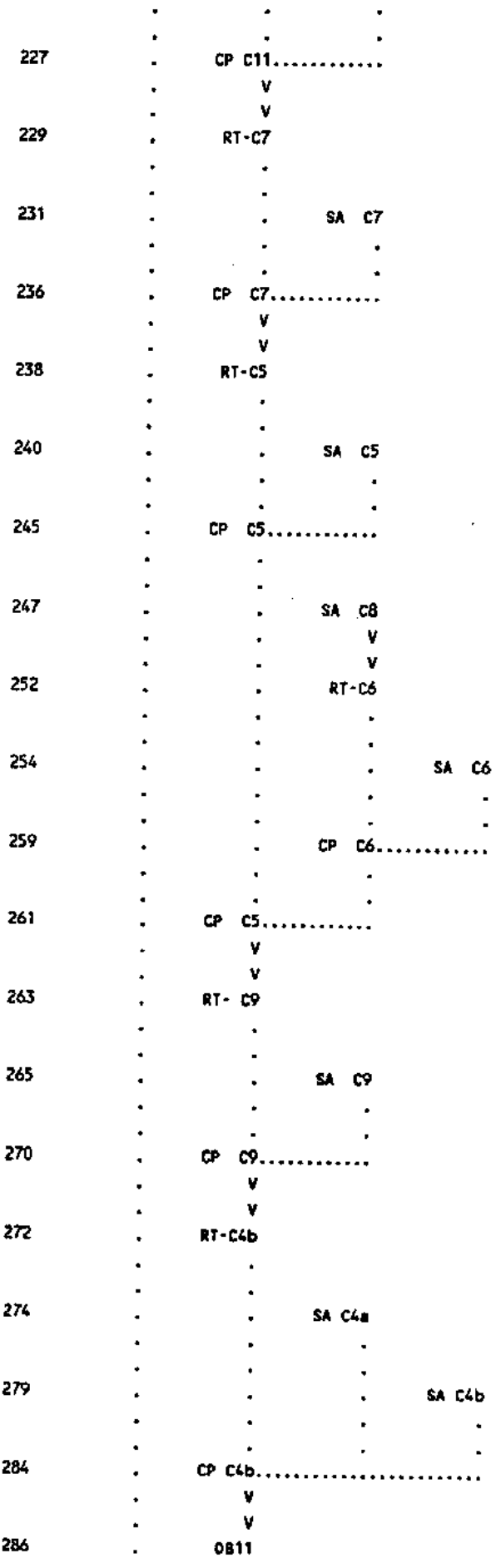
CP B5
RT-B4
163
SA B4
168
CP B4
170
RT-B2c
172
SA B2a
177
RT-B2b
179
SA B2b
184
CP B2b
DB2
195
RT-B2c
197
SA B2c
202
CP B2c
204
CPB10b
206
RT-B1
208
SA B1
213
CP B1
215
SA C10
RT-C11
222
SA C11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CP C11
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RT-C7
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SA C7
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CP C7
238
RT-C5
240
SA C5
245
CP C5
247
SA C8
252
RT-C6
254
SA C6
259
CP C6
261
CP C5
263
RT- C9
265
SA C9
270
CP C9
272
RT-C4b
274
SA C4a
279
SA C4b
284
CP C4b
286
OB11

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                .          V
                .          V
295             .       RT-C3
                .          .
                .          .
                .          .          C3A
                .          .           .
                .          .           .
302             .       CP  C3.............
                .          V
                .          V
304             .        DB4
                .          V
                .          V
313             .       RT-C3B
                .          .
                .          .
315             .          .          C3B
                .          .           .
                .          .           .
320             .       C-C3B.............
                .          .
                .          .
322             .          .       SA  C2
                .          .           .
                .          .           .
327             .       CP  C3.............
                .          V
                .          V
                .       RT-C1
                .          .
                .          .
331             .          .       SA  C1
                .          .           .
                .          .           .
336             .       CP  C1.............
                .          .
                .          .
338         CP CB1.............
                V
                V
340          RT-D1
                .
                .
342             .       SA  D1
                .          .
                .          .
347         MODULE.............
                .
                .
350             .       SA F1A
                .          V
                .          V
355             .        DB15
                .          V
                .          V
                .       RT-F1B
                .          .
                .          .
366             .          .       SA F1B
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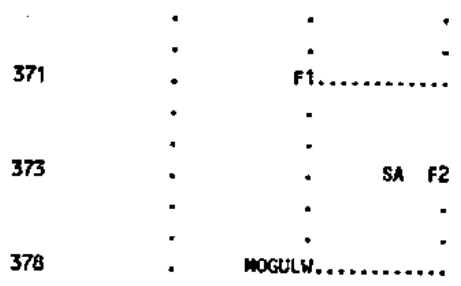

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)     *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
* RUN DATE 05/06/98  TIME  14:36:19     *
*****************************************
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*****************************************
*                                       *
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*       609 SECOND STREET               *
*     DAVIS, CALIFORNIA 95616           *
*       (916) 551-1748                  *
*                                       *
*****************************************
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```
| SOMERSETT PLANNED UNIT DEVELOPEMENT                                  |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                             |
|                    *PHASE I TO II* 100 YEAR MODEL                    |
| DEVELOPED CONDITION WITH DETENTION BASINS                            |
| Washoe County, Nevada                                                |
|                                                                      |
|  100-Year Analysis                                                   |
|    - For offsite areas                                               |
|    - Watersheds measured from USGS 7.5 Minute Quads                  |
|    - Rainfall entered using hypothetical storm option                |
|    - Rainfall data estimated using revised NOAA precipitation data   |
|    - Curve number estimates based on Sage-Grass, as described in TR-55|
|      (SCS, 1986)  or NEH-4 (SCS, 1972)                               |
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
|      as modified for the Washoe County Hydrologic Criteria Manual.   |
|                                                                      |
| File: SSP2-100.DAT                          WRC NEVADA, INC.         |
| APRIL 1998                                  1575 DELUCCHI LN STE.207A|
| Project No.   3011                          Reno, Nevada  89502      |
|                                            (702)332-3737,FAX 332-3740|
```

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24 10        OUTPUT CONTROL VARIABLES
                 IPRNT         5  PRINT CONTROL
                 IPLOT         0  PLOT CONTROL
                 QSCAL        0.  HYDROGRAPH PLOT SCALE

   IT        HYDROGRAPH TIME DATA
                 MMIN          3  MINUTES IN COMPUTATION INTERVAL
                IDATE      1    0  STARTING DATE
                ITIME         0000  STARTING TIME
                   NQ         1441  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      4    0  ENDING DATE
               NDTIME         0000  ENDING TIME
               ICENT           19  CENTURY MARK

             COMPUTATION INTERVAL     0.05 HOURS
                 TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA B17	345.	12.40	60.	20.	7.	0.41		
ROUTED TO	RT-B12	344.	12.55	60.	20.	7.	0.41		
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24		
ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24		
HYDROGRAPH AT	SA B12	303.	12.30	47.	16.	5.	0.35		
3 COMBINED AT	CP B12	710.	12.50	137.	45.	15.	1.00		
ROUTED TO	RT-B11	707.	12.55	137.	45.	15.	1.00		
HYDROGRAPH AT	SA B11	66.	12.30	10.	3.	1.	0.08		
2 COMBINED AT	CP B11	745.	12.50	146.	48.	16.	1.08		
ROUTED TO	RT-10a	748.	12.60	146.	48.	16.	1.08		
HYDROGRAPH AT	SAB10a	112.	12.30	16.	5.	2.	0.11		
2 COMBINED AT	CPB10a	798.	12.55	162.	54.	18.	1.19		
HYDROGRAPH AT	SA B8a	219.	12.30	31.	10.	3.	0.24		
ROUTED TO	RT-B8b	218.	12.30	31.	10.	3.	0.24		
HYDROGRAPH AT	SA B8b	59.	12.20	7.	2.	1.	0.04		
HYDROGRAPH AT	SA B9	54.	12.30	8.	3.	1.	0.06		
3 COMBINED AT	CP B8b	317.	12.30	46.	15.	5.	0.34		
ROUTED TO	RT-B7	319.	12.35	46.	15.	5.	0.34		
HYDROGRAPH AT	SA B7	21.	12.25	3.	1.	0.	0.02		
3 COMBINED AT	CPB10a	1022.	12.55	210.	70.	23.	1.55		
ROUTED TO	RT-10b	1021.	12.55	210.	70.	23.	1.55		
HYDROGRAPH AT	SAB10b	63.	12.10	6.	2.	1.	0.04		
2 COMBINED AT	CPB10b	1032.	12.55	216.	72.	24.	1.59		
ROUTED TO	DB3	914.	12.70	214.	72.	24.	1.59	5024.91	12.70
ROUTED TO	RT-10c	913.	12.70	214.	72.	24.	1.59		
HYDROGRAPH AT	SAB10c	22.	12.10	2.	1.	0.	0.01		

2 COMBINED AT	CPB10c	915.	12.70	216.	73.	24.	1.60		
HYDROGRAPH AT	SA B16	115.	12.30	16.	6.	2.	0.09		
ROUTED TO	RT- B3	115.	12.30	16.	6.	2.	0.09		
HYDROGRAPH AT	SA B3	51.	12.25	7.	2.	1.	0.05		
2 COMBINED AT	CP B3	164.	12.25	23.	8.	3.	0.15		
ROUTED TO	DB1	6.	18.55	6.	5.	3.	0.15	5058.53	18.70
ROUTED TO	RT-B5	6.	18.60	6.	5.	3.	0.15		
HYDROGRAPH AT	SA B6	28.	12.25	4.	1.	0.	0.03		
ROUTED TO	RT-B5	28.	12.35	4.	1.	0.	0.03		
HYDROGRAPH AT	SA B14	85.	12.25	12.	4.	1.	0.09		
ROUTED TO	RT-B5	85.	12.35	12.	4.	1.	0.09		
HYDROGRAPH AT	SA B5	75.	12.25	11.	4.	1.	0.08		
4 COMBINED AT	CP B5	187.	12.35	32.	14.	6.	0.34		
ROUTED TO	RT-B4	186.	12.35	32.	14.	6.	0.34		
HYDROGRAPH AT	SA B4	51.	12.15	6.	2.	1.	0.04		
2 COMBINED AT	CP B4	214.	12.35	38.	16.	6.	0.38		
ROUTED TO	RT-B2c	212.	12.40	38.	16.	6.	0.38		
HYDROGRAPH AT	SA B2a	25.	12.25	3.	1.	0.	0.02		
ROUTED TO	RT-B2b	25.	12.30	3.	1.	0.	0.02		
HYDROGRAPH AT	SA B2b	186.	12.20	21.	7.	2.	0.13		
2 COMBINED AT	CP B2b	202.	12.20	24.	8.	3.	0.15		
ROUTED TO	DB2	122.	12.35	24.	8.	3.	0.15	5055.86	12.35
ROUTED TO	RT-B2c	125.	12.35	24.	8.	3.	0.15		
HYDROGRAPH AT	SA B2c	70.	12.20	9.	3.	1.	0.06		
3 COMBINED AT	CP B2c	387.	12.35	71.	27.	10.	0.59		
2 COMBINED AT	CPB10b	1161.	12.65	286.	100.	34.	2.19		
ROUTED TO	RT-B1	1153.	12.70	286.	100.	34.	2.19		
HYDROGRAPH AT	SA B1	65.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP B1	1163.	12.70	293.	102.	35.	2.24		
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66		

ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66		
HYDROGRAPH AT	SA C11	423.	12.25	53.	17.	6.	0.32		
2 COMBINED AT	CP C11	934.	12.40	166.	55.	18.	0.97		
ROUTED TO	RT-C7	937.	12.45	166.	55.	18.	0.97		
HYDROGRAPH AT	SA C7	335.	12.30	49.	16.	5.	0.34		
2 COMBINED AT	CP C7	1202.	12.45	215.	71.	24.	1.31		
ROUTED TO	RT-C5	1202.	12.50	215.	71.	24.	1.31		
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15		
2 COMBINED AT	CP C5	1301.	12.45	233.	77.	26.	1.46		
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24		
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24		
HYDROGRAPH AT	SA C6	77.	12.30	11.	4.	1.	0.10		
2 COMBINED AT	CP C6	333.	12.35	47.	16.	5.	0.33		
2 COMBINED AT	CP C5	1590.	12.45	280.	92.	31.	1.80		
ROUTED TO	RT- C9	1590.	12.45	280.	92.	31.	1.80		
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11		
2 COMBINED AT	CP C9	1650.	12.45	292.	96.	32.	1.91		
ROUTED TO	RT-C4b	1637.	12.45	292.	96.	32.	1.91		
HYDROGRAPH AT	SA C4a	85.	12.25	11.	4.	1.	0.09		
HYDROGRAPH AT	SA C4b	33.	12.20	4.	1.	0.	0.04		
3 COMBINED AT	CP C4b	1704.	12.45	307.	101.	34.	2.04		
ROUTED TO	DB11	1187.	12.75	302.	101.	34.	2.04	5119.44	12.75
ROUTED TO	RT-C3	1183.	12.75	302.	101.	34.	2.04		
HYDROGRAPH AT	C3A	72.	12.35	11.	4.	1.	0.12		
2 COMBINED AT	CP C3	1210.	12.75	313.	105.	35.	2.16		
ROUTED TO	DB4	971.	13.05	313.	105.	35.	2.16	5034.98	13.05
ROUTED TO	RT-C3B	971.	13.10	313.	105.	35.	2.16		
HYDROGRAPH AT	C3B	66.	12.35	11.	4.	1.	0.10		
2 COMBINED AT	C-C3B	982.	13.10	323.	109.	36.	2.26		
HYDROGRAPH AT	SA C2	118.	12.30	17.	6.	2.	0.17		

2 COMBINED AT	CP C3	996.	13.05	339.	114.	38.	2.43		
ROUTED TO	RT-C1	996.	13.10	339.	114.	38.	2.43		
HYDROGRAPH AT	SA C1	62.	12.30	9.	3.	1.	0.08		
2 COMBINED AT	CP C1	1003.	13.10	348.	118.	39.	2.51		
2 COMBINED AT	CP CB1	2027.	12.75	641.	220.	74.	4.75		
ROUTED TO	RT-D1	2027.	12.80	641.	220.	74.	4.75		
HYDROGRAPH AT	SA D1	169.	12.30	25.	8.	3.	0.22		
2 COMBINED AT	MOGULE	2069.	12.80	665.	228.	77.	4.97		
HYDROGRAPH AT	SA F1A	94.	12.15	10.	3.	1.	0.07		
ROUTED TO	DB13	6.	12.90	6.	3.	1.	0.07	5072.48	12.95
ROUTED TO	RT-F1B	6.	13.05	6.	3.	1.	0.07		
HYDROGRAPH AT	SA F1B	102.	12.25	14.	5.	2.	0.11		
2 COMBINED AT	F1	106.	12.25	19.	8.	3.	0.18		
HYDROGRAPH AT	SA F2	117.	12.30	17.	6.	2.	0.14		
2 COMBINED AT	MOGULW	219.	12.25	37.	14.	5.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-812	MANE	3.00	343.96	753.00	1.76	3.00	343.95	753.00	1.76
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3878E+02 EXCESS=0.0000E+00 OUTFLOW=0.3877E+02 BASIN STORAGE=0.4304E-02 PERCENT ERROR= 0.0									
RT-812	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0									
RT-811	MANE	2.64	707.00	752.94	1.67	3.00	706.59	753.00	1.67
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8943E+02 EXCESS=0.0000E+00 OUTFLOW=0.8943E+02 BASIN STORAGE=0.1231E-02 PERCENT ERROR= 0.0									
RT-10a	MANE	3.00	747.58	756.00	1.66	3.00	747.58	756.00	1.66
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9568E+02 EXCESS=0.0000E+00 OUTFLOW=0.9568E+02 BASIN STORAGE=0.1953E-02 PERCENT ERROR= 0.0									
RT-88b	MANE	2.21	218.68	739.04	1.56	3.00	218.33	738.00	1.56
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2039E+02 EXCESS=0.0000E+00 OUTFLOW=0.2039E+02 BASIN STORAGE=0.7472E-03 PERCENT ERROR= 0.0									
RT-87	MANE	3.00	318.62	741.00	1.65	3.00	318.62	741.00	1.65
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3014E+02 EXCESS=0.0000E+00 OUTFLOW=0.3014E+02 BASIN STORAGE=0.1686E-02 PERCENT ERROR= 0.0									
RT-10b	MANE	0.77	1021.31	753.12	1.68	3.00	1021.13	753.00	1.68
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1386E+03 EXCESS=0.0000E+00 OUTFLOW=0.1386E+03 BASIN STORAGE=0.3239E-03 PERCENT ERROR= 0.0									
RT-10c	MANE	1.21	913.72	761.50	1.69	3.00	912.74	762.00	1.69
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1428E+03 BASIN STORAGE=0.5010E-03 PERCENT ERROR= 0.0									
RT- 83	MANE	0.86	115.38	737.15	2.22	3.00	115.26	738.00	2.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1114E+02 EXCESS=0.0000E+00 OUTFLOW=0.1114E+02 BASIN STORAGE=0.1838E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.87	1128.00	2.02	3.00	5.87	1128.00	2.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1570E+02 EXCESS=0.0000E+00 OUTFLOW=0.1570E+02 BASIN STORAGE=0.3858E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	28.43	741.00	1.62	3.00	28.43	741.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2505E+01 EXCESS=0.0000E+00 OUTFLOW=0.2506E+01 BASIN STORAGE=0.1383E-02 PERCENT ERROR= -0.1

RT-B5	MANE	3.00	85.03	741.00	1.69	3.00	85.03	741.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7902E+01 EXCESS=0.0000E+00 OUTFLOW=0.7904E+01 BASIN STORAGE=0.1597E-02 PERCENT ERROR= 0.0

RT-B4	MANE	2.42	186.59	742.33	1.82	3.00	185.95	741.00	1.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3315E+02 EXCESS=0.0000E+00 OUTFLOW=0.3315E+02 BASIN STORAGE=0.6023E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	2.85	213.08	743.56	1.84	3.00	211.65	744.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3702E+02 EXCESS=0.0000E+00 OUTFLOW=0.3702E+02 BASIN STORAGE=0.7234E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	25.25	738.00	1.69	3.00	25.25	738.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2181E+01 EXCESS=0.0000E+00 OUTFLOW=0.2181E+01 BASIN STORAGE=0.8788E-03 PERCENT ERROR= -0.1

RT-B2c	MANE	3.00	124.64	741.00	2.05	3.00	124.64	741.00	2.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1640E+02 EXCESS=0.0000E+00 OUTFLOW=0.1640E+02 BASIN STORAGE=0.1522E-02 PERCENT ERROR= 0.0

RT-B1	MANE	2.54	1158.02	760.85	1.75	3.00	1152.66	762.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2037E+03 EXCESS=0.0000E+00 OUTFLOW=0.2037E+03 BASIN STORAGE=0.1068E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	677.76	747.00	2.13	3.00	677.76	747.00	2.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7463E+02 EXCESS=0.0000E+00 OUTFLOW=0.7464E+02 BASIN STORAGE=0.2751E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	936.53	747.00	2.10	3.00	936.53	747.00	2.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1090E+03 EXCESS=0.0000E+00 OUTFLOW=0.1090E+03 BASIN STORAGE=0.3500E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	1202.36	750.00	2.01	3.00	1202.36	750.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1406E+03 EXCESS=0.0000E+00 OUTFLOW=0.1406E+03 BASIN STORAGE=0.1623E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	258.93	741.00	1.84	3.00	258.93	741.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT- C9	MANE	1.44	1591.05	746.83	1.91	3.00	1589.84	747.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1834E+03 EXCESS=0.0000E+00 OUTFLOW=0.1834E+03 BASIN STORAGE=0.7932E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	1.53	1641.62	748.28	1.87	3.00	1637.38	747.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1908E+03 EXCESS=0.0000E+00 OUTFLOW=0.1908E+03 BASIN STORAGE=0.7260E-03 PERCENT ERROR= 0.0

RT-C3	MANE	1.91	1184.58	767.36	1.85	3.00	1182.97	765.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2010E+03 EXCESS=0.0000E+00 OUTFLOW=0.2010E+03 BASIN STORAGE=0.8256E-03 PERCENT ERROR= 0.0

RT-C3B	MANE	1.48	970.91	786.19	1.81	3.00	970.90	786.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2084E+03 EXCESS=0.0000E+00 OUTFLOW=0.2084E+03 BASIN STORAGE=0.6612E-03 PERCENT ERROR= 0.0

RT-C1	MANE	2.51	995.76	786.11	1.75	3.00	995.69	786.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2270E+03 EXCESS=0.0000E+00 OUTFLOW=0.2270E+03 BASIN STORAGE=0.1197E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	2027.32	768.00	1.75	3.00	2027.32	768.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4419E+03 EXCESS=0.0000E+00 OUTFLOW=0.4419E+03 BASIN STORAGE=0.2133E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	6.43	789.00	1.75	3.00	6.43	789.00	1.75

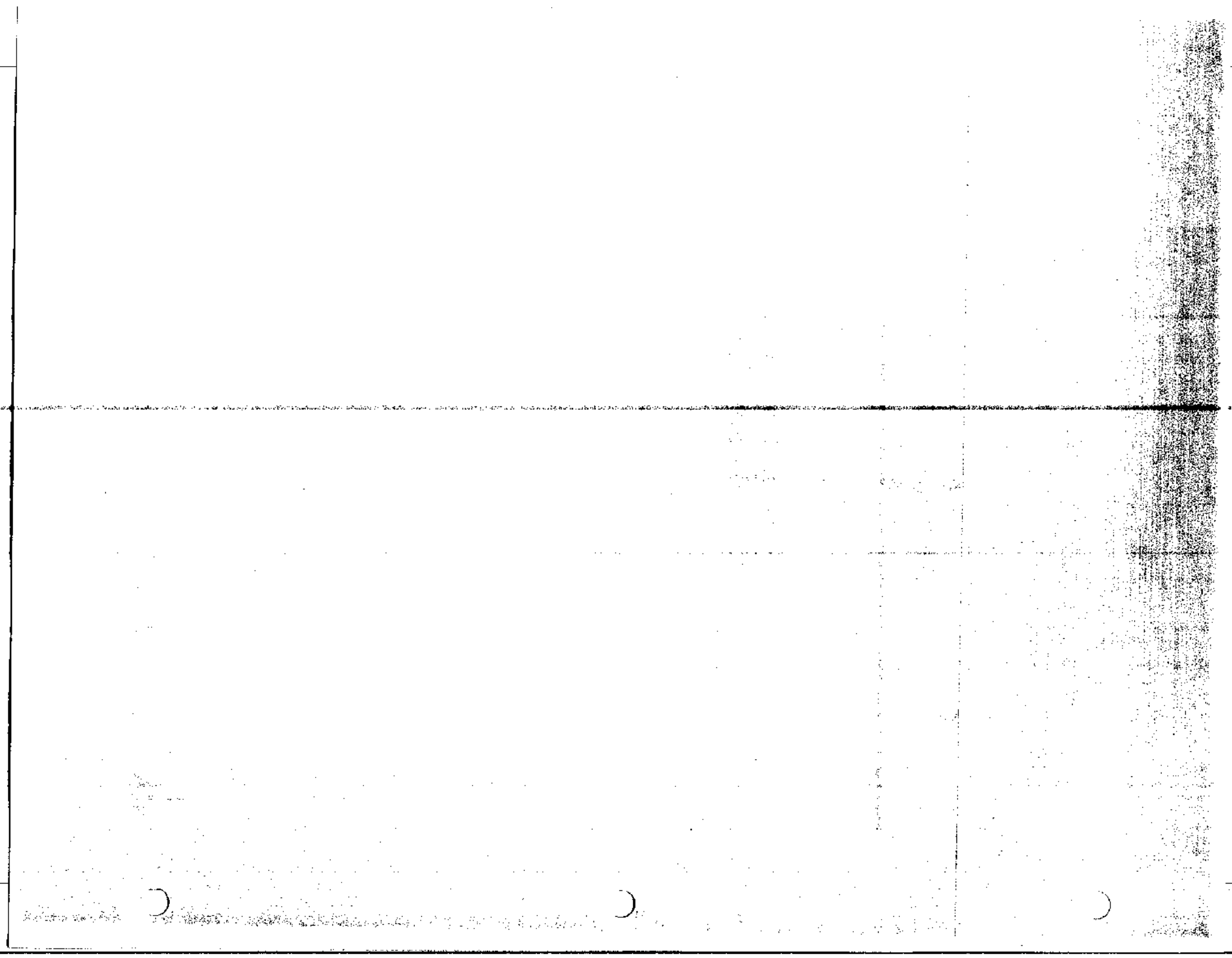
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6774E+01 EXCESS=0.0000E+00 OUTFLOW=0.6774E+01 BASIN STORAGE=0.1469E-02 PERCENT ERROR= 0.0

APPENDIX F - PROJECT PHASING ANALYSIS

HEC-1 Output
5-Year Proposed Condition Analysis
Phase I to III Improvements Only

WRC NEVADA INC.

April 17, 1998



```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:37:50   *
*                                       *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```


```
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

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

          *DIAGRAM
    1     ID   ===========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                     |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                |
    4     ID   |                      "PHASE I TO III" 5 YEAR MODEL                      |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                               |
    6     ID   | Washoe County, Nevada                                                   |
    7     ID   |                                                                         |
    8     ID   |  5-Year Analysis                                                        |
    9     ID   |    - For offsite areas                                                  |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                     |
   11     ID   |    - Rainfall entered using hypothetical storm option                   |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data      |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55  |
   14     ID   |       (SCS, 1986)  or TEN-4 (SCS, 1972)                                |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.      |
   17     ID   |                                                                         |
   18     ID   | File: SSP3-005.DAT                          WRC NEVADA, INC.            |
   19     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A   |
   20     ID   | Project No.   3011                          Reno, Nevada  89502         |
   21     ID   |                                             (702)332-3737,FAX 332-3740  |
   22     ID   ===========================================================================
   23     IT      3       0       0    1441
   24     IO      5       0       0
          *
          *
          * *********   WATERSHED SUBAREA A   ************
          *
          *

   25     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   26     PH       1            0.22    0.41    0.68    0.92    1.11    1.50    2.00    2.51
   27     BA  0.4094
   28     LS       0      73
   29     UD    0.32
          *

   30     KK   RT-A7 ROUTE HOROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   31     RD    5700    0.14    0.07           TRAP       6       3
          *

   32     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   33     PH       1            0.21    0.38    0.63    0.87    1.05    1.43    1.89    2.34
   34     BA  0.3002
   35     LS       0      79
   36     UD    0.31
          *

   37     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   38     HC       2
          *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  39      KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
  40      RD     700   0.140    0.07           TRAP       6       3
          *

  41      KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
  42      PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  43      BA  0.0583
  44      LS       0      78
  45      UD    0.14
          *

  46      KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
  47      HC       2
          *

  48      KK    DB12 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 12
  49      KM         24" RCP ie 5425
  50      KM         4'x4'RCB at 5439
  51      RS       1    STOR      -1
  52      SA    .039    .122    .276    .531    .840   1.162
  53      SE    5425    5430    5435    5440    5445    5450
  54      SQ       0    21.4    30.3    37.1    42.8    47.8    52.4    56.6    87.7   141.0
  55      SQ   208.7   288.2   317.7   598.6
  56      SE    5425    5427    5429    5431    5433    5435    5437    5439    5441    5443
  57      SE    5445    5447    5449    5451
          *

  58      KK  RT-A6b ROUTE HDROGRAPH TO OUTLET OF AREA A6b
  59      RD    2400   0.069    0.07           TRAP       6       3
          *

  60      KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
  61      PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  62      BA  0.0508
  63      LS       0      81
  64      UD    0.15
          *

  65      KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
  66      HC       2
          *

  67      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  68      RD    1100   0.055    0.07           TRAP       6       3
          *

  69      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  70      PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
  71      BA  0.1196
  72      LS       0      88
  73      UD    0.14
          *
```

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

 74       KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
 75       HC       2
          *

 76       KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
 77       RD    2900   0.055     .07          TRAP       6       3
          *

 78       KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
 79       PH       1             0.18   0.33   0.56   0.76   0.92   1.25   1.68   2.11
 80       BA  0.1329
 81       LS       0      80
 82       UD    0.19
          *

 83       KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
 84       PH       1             0.19   0.34   0.57   0.78   0.94   1.27   1.72   2.16
 85       BA  0.0428
 86       LS       0      61
 87       UD    0.20
          *

 88       KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
 89       HC       3
          *

 90       KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
 91       PH       1             0.22   0.39   0.65   0.89   1.06   1.43   1.90   2.37
 92       BA  0.2819
 93       LS       0      79
 94       UD    0.30
          *
          * *****NOT INCLUDED BECAUSE SA A10 IS IN EXISTING CONDITIONS********
          *
          * KK  DB10 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 10
          * KM       24"RCP ie 5375
          * RS     1    STOR      -1
          * SA   .04     .11     .26     .296    .396    .508    .628    .754   1.23
          * SE  5375    5380    5385    5390    5392    5394    5396    5398   5400
          * SQ     0    12.0    24.0    36.0    48.0    60.0    72.0
          * SE  5375 5376.75 5378.47 5381.39 5385.47 5391.99 5406.13
          *

 95       KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
 96       PH       1             0.22   0.41   0.68   0.92   1.10   1.48   2.00   2.51
 97       BA  0.1563
 98       LS       0      78
 99       UD    0.29
          *
```

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

  100     KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
  101     RD    6800   0.165     .08           TRAP       6       3
          *

  102     KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
  103     PH       1            0.22    0.39    0.65    0.89    1.07    1.44    1.91    2.38
  104     BA  0.3636
  105     LS       0      78
  106     UD    0.33
          *

  107     KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
  108     HC       2
          *
          * *****NOT INCLUDED BECAUSE SA A9 IS IN EXISTING CONDITIONS*****
          *
          * KK   DB9 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 9
          * KM        2-54"RCP ie 5382
          * KS     1    STOR      -1
          * SA 0.168   0.213   0.262   0.314
          * SE  5384    5386    5388    5390
          * SQ  0.00      35      70     105     140     175     200     245     280     3
          * SQ   350
          * SE  5382 5383.17 5384.03 5384.72 5385.31 5385.86 5386.26 5387.05 5387.75 5388.
          * SE5389.4
          *

  109     KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
  110     HC       2
          *

  111     KK   RT-A8 ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8
  112     RD    4800   0.050     .07           TRAP       6       3
          *

  113     KK  SA A8 GENERATE HYDOGRAPH FOR SUB-AREA A8
  114     PH       1            0.20    0.36    0.60    0.82    0.98    1.33    1.78    2.23
  115     BA  0.1393
  116     LS       0      75
  117     UD    0.33
          *

  118     KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
  119     HC       2
          *

  120     KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
  121     PH       1            0.21    0.38    0.64    0.86    1.03    1.38    1.85    2.32
  122     BA  0.1961
  123     LS       0      78
  124     UD    0.28
          *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

125       KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
126       PH       1            0.21    0.38    0.63    0.85    1.01    1.37    1.83    2.30
127       BA  0.0544
128       LS       0      78
129       UD    0.22
          *

130       KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
131       HC       2
          *
          * ************NOT INCLUDED, SA A13 IS IN EXISTING CONDITIONS**********
          * KK   DB6 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 6
          * KM          18" RCP ie 5184 and 6'X8' at 5191
          * RS      1    STOR      -1
          * SA 0.036   0.091   0.153   0.224   0.302   0.391
          * SE  5186    5188    5190    5192    5194    5196
          * SQ   8.5    12.0    14.7    17.0    19.0    20.8    22.5    40.9    73.0    114
          * SQ 162.6   189.2   249.1
          * SE  5185    5186    5187    5188    5189    5190    5191    5192    5193    51
          * SE  5195  5195.5    5196
          *

132       KK  RT-A11 ROUTE COMBINED HYDROGRAPH A12&13 TO OUTLET OF A11
133       RD    2400  0.0147    0.07          TRAP       6       3
          *

134       KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
135       PH       1            0.20    0.37    0.61    0.82    0.97    1.30    1.75    2.20
136       BA  0.1278
137       LS       0      73
138       UD    0.33
          *

139       KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A11, A8
140       HC       4
          *

141       KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
142       RD    4400  0.0386     .07          TRAP       6       3
          *

143       KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
144       PH       1            0.18    0.33    0.56    0.76    0.91    1.24    1.67    2.11
145       BA  0.2264
146       LS       0      78
147       UD    0.28
          *

148       KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
149       HC       2
          *
```

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

150       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
151       RD    1500    0.07    0.07           TRAP       6       3
          *

152       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
153       RD    2400  0.0125   0.040           TRAP      15       3
          *

154       KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
155       PH       1            0.18    0.33    0.54    0.74    0.89    1.20    1.61    2.02
156       BA  0.1127
157       LS       0      76
158       UD    0.33
          *
          *
          * ************   WATERSHED SUBAREA E ******************
          *
          *

159       KK  SA  E6 GENERATE HYDROGRAPH FOR SUB AREA E6
160       PH       1            0.20    0.37    0.61    0.82    0.97    1.30    1.76    2.23
161       BA  0.0448
162       LS       0      65
163       UD    0.22
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIIONS ***********
          * KK   DB5 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 5
          * KM       12"RCP ie 5114
          * RS     1    STOR      -1
          * SA  .119    .172    .231    .296    .366     0.5
          * SE  5114    5116    5118    5120    5122    5124
          * SQ     0       1       2       3       4       5       6       7       8
          * SE  5114 5114.59 5114.91 5115.24 5115.68 5116.26 5117.50 5119.38 5121.55 5124.
          *

164       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
165       RD    1900  0.0658    0.07           trap       6       3
          *

166       KK  SA  E5 GENERATE HYDOGRAPH FOR SUB-AREA E5
167       PH       1            0.20    0.37    0.61    0.83    0.99    1.34    1.81    2.28
168       BA   .1241
169       LS       0      77
170       UD     .27
          *

171       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
172       RD    2500   .0360     .07           TRAP       6       3
          *
```

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

 173      KK  CP E56 COMBINE HYDROGRAPHS FOR E5 AND E6
 174      HC       2
          *

 175      KK   RT-E4 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
 176      RD    4500   .0310     .07          TRAP       6       3
          *

 177      KK      E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
 178      PH       1            0.19   0.35   0.58   0.79   0.94   1.26   1.72   2.18
 179      BA   .4231
 180      LS       0      76
 181      UD     .36
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ********
          * KK   D88 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 8
          * KM       24"RCP ie 5122
          * RS     1   STOR      -1
          * SA  .085    .134    .198   .273   .356   .445   .540
          * SE  5122    5124    5126   5128   5130   5132   5134
          * SQ     0       5      10     15     20     25     30     35
          * SE  5122 5123.03 5123.63 5124.18 5124.86 5125.76 5126.87 5128.19
          *

 182      KK    C-E4 COMBINE HYDROGRAPHS FROM E5 E4 AND E6
 183      HC       2
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ***********
          * KK  0814 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 14
          * KM       12"RCP ie 5060
          * RS     1    STOR      -1
          * SA  .341    .475    .631   .811  1.025  1.274   1.50
          * SE  5060    5062    5064   5066   5068   5070   5072
          * SQ     0       2       4      6      8     10     12     14
          * SE  5060 5060.88 5061.65 5062.95 5064.75 5067.38 5071.49 5071.98
          *

 184      KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
 185      RD    3500  0.0429    0.07          TRAP       6       3
          *

 186      KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
 187      PH       1            0.19   0.34   0.57   0.76   0.90   1.20   1.63   2.06
 188      BA  0.1191
 189      LS       0      75
 190      UD    0.27
          *

 191      KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
 192      HC       2
          *
```

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

193       KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
194       RD     500  0.0125     .04           TRAP      15       3
          *

195       KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
196       PH       1            0.19    0.34    0.57    0.77    0.92    1.24    1.68    2.12
197       BA  0.1653
198       LS       0      62
199       UD    0.38
          *

200       KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
201       RD    3200  0.0375     .07           TRAP       6       3
          *

202       KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
203       PH       1            0.18    0.33    0.56    0.75    0.89    1.20    1.62    2.04
204       BA  0.1156
205       LS       0      76
206       UD    0.31
          *

207       KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
208       HC       2
          *

209       KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
210       RD    1200  0.0125     .04           TRAP      15       3
          *

211       KK    I-80
212       KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
213       HC       4
          *
          *
          *
          * *********   WATERSHED SUBAREA B    **************
          *
          *
          *

214       KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
215       PH       1            0.22    0.40    0.67    0.91    1.10    1.50    1.96    2.43
216       BA  0.4136
217       LS       0      74
218       UD    0.32
          *

219       KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
220       RD    3900  0.0133     .07           TRAP       6       3
          *
```

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

  221     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  222     PH       1            0.22   0.40   0.67   0.91   1.10   1.48   1.98   2.48
  223     BA  0.2400
  224     LS       0      70
  225     UD    0.33
          *

  226     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  227     RD    4500  0.1510     .08          TRAP      6      3
          *

  228     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  229     PH       1            0.20   0.37   0.61   0.85   1.03   1.40   1.85   2.30
  230     BA  0.3484
  231     LS       0      75
  232     UD    0.26
          *

  233     KK  CP B12 CONBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  234     HC       3
          *

  235     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  236     RD    2000  0.1000     .07          TRAP      6      3
          *

  237     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  238     PH       1            0.19   0.35   0.58   0.79   0.95   1.27   1.70   2.12
  239     BA  0.0777
  240     LS       0      76
  241     UD    0.24
          *

  242     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  243     HC       2
          *

  244     KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  245     RD    3100  0.0710     .07          TRAP      6      3
          *

  246     KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  247     PH       1            0.18   0.32   0.53   0.73   0.88   1.20   1.60   2.01
  248     BA  0.1056
  249     LS       0      84
  250     UD    0.24
          *

  251     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  252     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

253       KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
254       PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
255       BA  0.2445
256       LS       0      76
257       UD    0.23
          *

258       KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
259       RD    1100  0.0770     .07           TRAP       6       3
          *

260       KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
261       PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
262       BA  0.0382
263       LS       0      84
264       UD    0.16
          *

265       KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
266       PH       1            0.19    0.34    0.57    0.78    0.93    1.26    1.69    2.11
267       BA  0.0591
268       LS       0      79
269       UD    0.26
          *

270       KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
271       HC       3
          *

272       KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
273       RD    2200  0.0680     .07           TRAP       6       3
          *

274       KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
275       PH       1            0.18    0.32    0.53    0.73    0.89    1.21    1.62    2.04
276       BA  0.0240
277       LS       0      78
278       UD    0.21
          *

279       KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
280       HC       3
          *

281       KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
282       RD     500  0.0500     .07           TRAP       6       3
          *

283       KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
284       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
285       BA  0.0360
286       LS       0      87
287       UD    0.10
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

288       KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
289       HC       2
          *

290       KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
291       KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
292       RS       1    STOR      -1
293       SA     .34    .490    .660    .840   1.04    1.26    1.67
294       SE    5010    5012    5014    5016    5018    5020    5025
295       SQ       0    65.5    92.7   167.8   284.6   428.7   594.9   780.5  1073.4
296       SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *

297       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
298       RD     800  0.0563     .07            TRAP       6       3
          *

299       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
300       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
301       BA  0.0126
302       LS       0      87
303       UD    0.10
          *

304       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
305       HC       2
          *

306       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
307       PH       1            0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
308       BA    .094
309       LS       0      86
310       UD    0.24
          *

311       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
312       RD     400  0.0533     .05            TRAP       6       3
          *

313       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
314       PH       1            0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
315       BA    .046
316       LS       0      84
317       UD    0.17
          *

318       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
319       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

320       KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
321       KM        12"RCP ie 5050
322       RS       1    STOR      -1
323       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
324       SE    5050    5051    5052    5054    5056    5058    5060
325       SQ       0       1       2       3       4       5       6       7       8
326       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *

327       KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
328       RD     700  0.0500     .06            TRAP       6       3
          *

329       KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
330       PH       1             0.18    0.33    0.56    0.77    0.93    1.27    1.69    2.11
331       BA    .029
332       LS       0      78
333       UD     .20
          *

334       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
335       RD    2100     .05     .07            TRAP       5       2
          *

336       KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
337       PH       1             0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
338       BA  0.0877
339       LS       0      78
340       UD    0.22
          *

341       KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
342       RD    2325  0.0538    .070            TRAP       5       2
          *

343       KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
344       PH       1             0.18    0.33    0.56    0.76    0.92    1.25    1.65    2.06
345       BA    .078
346       LS       0      80
347       UD    0.23
          *

348       KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
349       HC       4
          *

350       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
351       RD     900  0.0390     .07            TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

352       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
353       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
354       BA  0.0360
355       LS       0      85
356       UD    0.14
          *

357       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
358       HC       2
          *

359       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
360       RD     950  0.0260     .07            TRAP       6       3
          *

361       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
362       PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
363       BA  0.0523
364       LS       0      86
365       UD    0.14
          *

366       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
367       RD    1800  0.0890     .07            TRAP       6       3
          *

368       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
369       PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
370       BA  0.1255
371       LS       0      86
372       UD    0.15
          *

373       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
374       HC       2
          *

375       KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
376       KM        36" RCP ie 5045
377       RS       1    STOR      -1
378       SA    .027    .149    .360    .658
379       SE    5045    5050    5055    5060
380       SQ       0      10      20      30      40      50      60      70      80      90
381       SQ     120   128.4
382       SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
383       SE  5054.8    5060
          *

384       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
385       RD    2100  0.0430     .07            TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

386       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
387       PH       1            0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
388       BA  0.0592
389       LS       0      84
390       UD    0.19
          *

391       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
392       HC       3
          *

393       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
394       HC       2
          *

395       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
396       RD    1400  0.0286     .07          TRAP       6       3
          *

397       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
398       PH       1            0.17   0.31   0.52   0.71   0.86   1.17   1.57   1.97
399       BA  0.0527
400       LS       0      83
401       UD    0.15
          *

402       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
403       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C   ************
          *
          *
          *

404       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
405       PH       1            0.23   0.42   0.71   0.95   1.14   1.53   2.03   2.53
406       BA  0.6580
407       LS       0      77
408       UD    0.33
          *

409       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
410       RD    4800  0.1583     .07          TRAP       6       3
          *

411       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
412       PH       1            0.22   0.39   0.65   0.89   1.06   1.43   1.87   2.30
413       BA   .3156
414       LS       0      80
415       UD    0.19
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  416     KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
  417     HC       2
          *

  418     KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
  419     RD    5500  0.1091     .07           TRAP       6       3
          *

  420     KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
  421     PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.71    2.11
  422     BA   .3359
  423     LS       0      80
  424     UD    0.26
          *

  425     KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
  426     HC       2
          *

  427     KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
  428     RD    3000  0.0933     .07           TRAP       6       3
          *

  429     KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
  430     PH       1            0.18    0.33    0.56    0.75    0.89    1.20    1.60    2.00
  431     BA  0.1528
  432     LS       0      78
  433     UD    0.27
          *

  434     KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
  435     HC       2
          *

  436     KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
  437     PH       1            0.20    0.36    0.60    0.81    0.97    1.31    1.74    2.16
  438     BA  0.2380
  439     LS       0      80
  440     UD    0.23
          *

  441     KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
  442     RD    3200  0.0750     .07           TRAP       6       3
          *

  443     KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
  444     PH       1            0.18    0.33    0.56    0.76    0.91    1.24    1.64    2.05
  445     BA  0.0956
  446     LS       0      77
  447     UD    0.25
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

448       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
449       HC       2
          *

450       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
451       HC       2
          *

452       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
453       RD    1100   0.055     .07          TRAP       6       3
          *

454       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
455       PH       1             0.18   0.32   0.53   0.72   0.86   1.16   1.55   1.95
456       BA  0.1147
457       LS       0      75
458       UD    0.27
          *

459       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
460       HC       2
          *

461       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
462       RD    1200  0.0580     .07          TRAP       6       3
          *

463       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
464       PH       1             0.18   0.32   0.53   0.72   0.87   1.17   1.56   1.96
465       BA  0.0930
466       LS       0      79
467       UD    0.20
          *

468       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
469       PH       1             0.18   0.32   0.53   0.72   0.87   1.17   1.56   1.96
470       BA  0.0384
471       LS       0      77
472       UD    0.18
          *

473       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
474       HC       3
          *

475       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
476       KM           36"RCP ie 5085 and 8'x7' at 5106
477       RS       1    STOR      -1
478       SA     .02    0.14    0.32    0.61   1.020   1.48    2.14    2.92
479       SE    5085    5090    5095    5100   5105    5110    5115    5120
480       SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
481       SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
482       SE    5085    5088    5091    5094   5097    5099    5101    5103    5105    5107
483       SE    5109    5111    5113    5115   5117    5118    5120
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

484       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
485       RD    1200     .04     .07          TRAP       6       3
          *

486       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
487       PH       1            0.17   0.31    0.52    0.70    0.83    1.12    1.50    1.88
488       BA     .12
489       LS       0      76
490       UD     .27

491       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
492       HC       2
          *

493       KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
494       KM         10'x6' RCB ie 5020
495       RS       1    STOR      -1
496       SA    .270   1.030   1.430   2.340
497       SE    5020    5025    5030    5035
498       SQ       0      90     180     270     360     400     540     630     720     810
499       SQ     900     972
500       SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
501       SE  5033.5 5035.00
          *

502       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
503       RD     950     .05     .07          TRAP       6       3
          *

504       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
505       PH       1            0.17   0.31    0.52    0.70    0.83    1.12    1.50    1.88
506       BA      .1
507       LS       0      78
508       UD     .30
          *

509       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
510       HC       2
          *

511       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
512       PH       1            0.17   0.30    0.50    0.67    0.80    1.07    1.45    1.84
513       BA  0.1705
514       LS       0      78
515       UD    0.25
          *

516       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
517       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  518     KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
  519     RD    1500  0.0400     .07           TRAP       6       3
          *

  520     KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
  521     PH       1           0.17    0.30    0.50    0.69    0.83    1.13    1.53    1.92
  522     BA  0.0809
  523     LS       0      79
  524     UD    0.24
          *

  525     KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
  526     HC       2
          *

  527     KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
  528     HC       2
          *

  529     KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
  530     RD    3200  0.0500     .07           TRAP       6       2
          *

  531     KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
  532     PH       1           0.17    0.31    0.52    0.70    0.85    1.14    1.55    1.96
  533     BA  0.2191
  534     LS       0      78
  535     UD    0.24
          *

  536     KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  537     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  538     HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    ************
          *
          *

  539     KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
  540     PH       1           0.16    0.32    0.53    0.72    0.87    1.17    1.58    2.00
  541     BA   .0726
  542     LS       0      82
  543     UD     .13
          *

  544     KK   0813 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
  545     KM          10" RCP ie 5066
  546     RS       1    STOR      -1
  547     SA    .238    .367    .519    .703    .919   1.184
  548     SE    5066    5068    5070    5072    5074    5075
  549     SQ       0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0     9.0
  550     SQ    10.0
```

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

551       SE  5066.0  5066.6  5067.1  5067.7  5068.6  5069.9  5071.4  5074.0 5075.02 5075.03
552       SE  5075.1
          *

553       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
554       RD    2700     .11     .07           TRAP      10       4
          *

555       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
556       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
557       BA     .11
558       LS       0      79
559       UD     .20
          *

560       KK      F1 Combine Hydrographs at F1
561       HC       2
          *

562       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
563       PH       1            0.18    0.33    0.54    0.74    0.89    1.20    1.62    2.04
564       BA  0.1352
565       LS       0      79
566       UD    0.25
          *

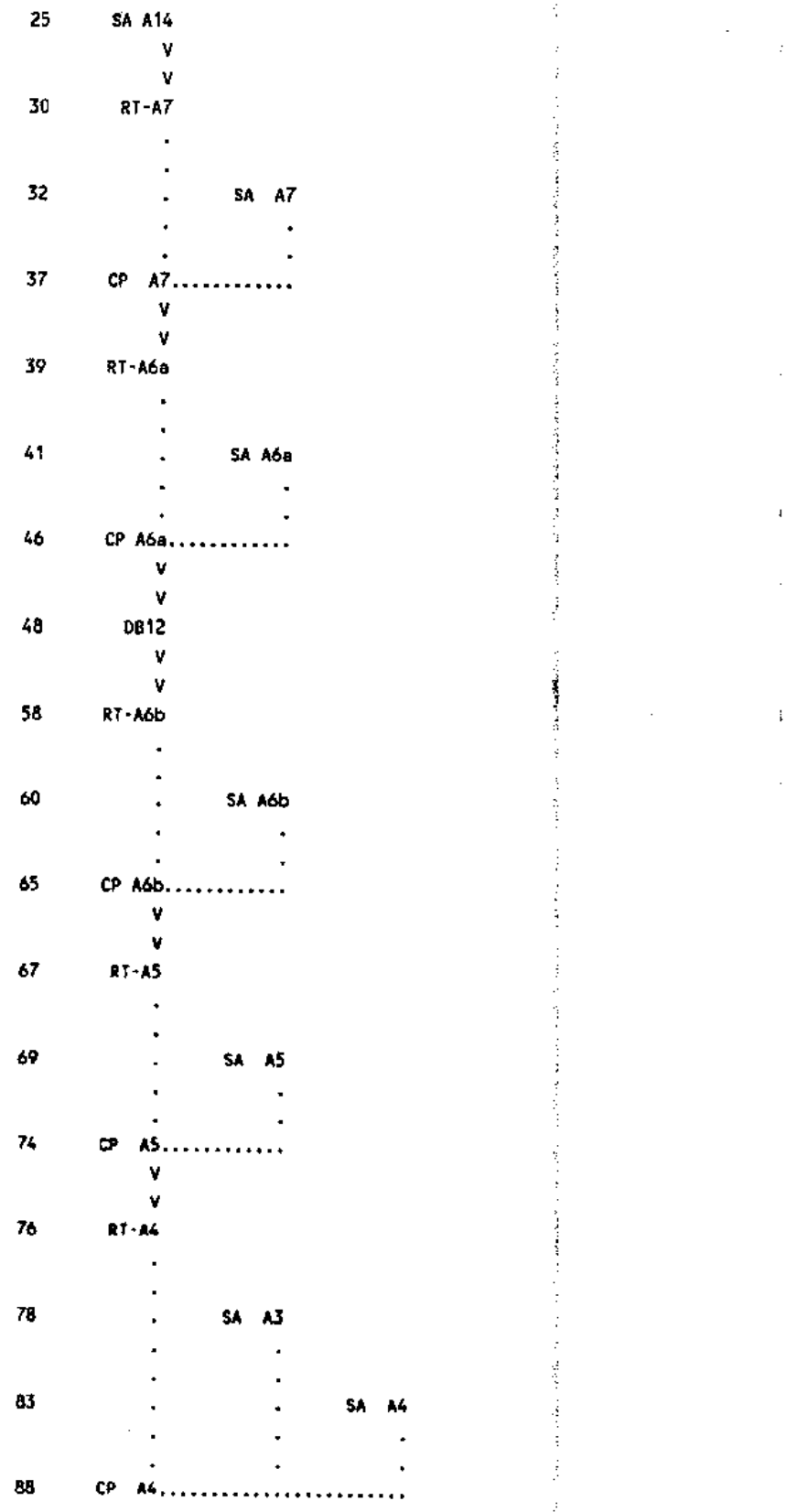
567       KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
568       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
569       HC       2
570       ZZ
```

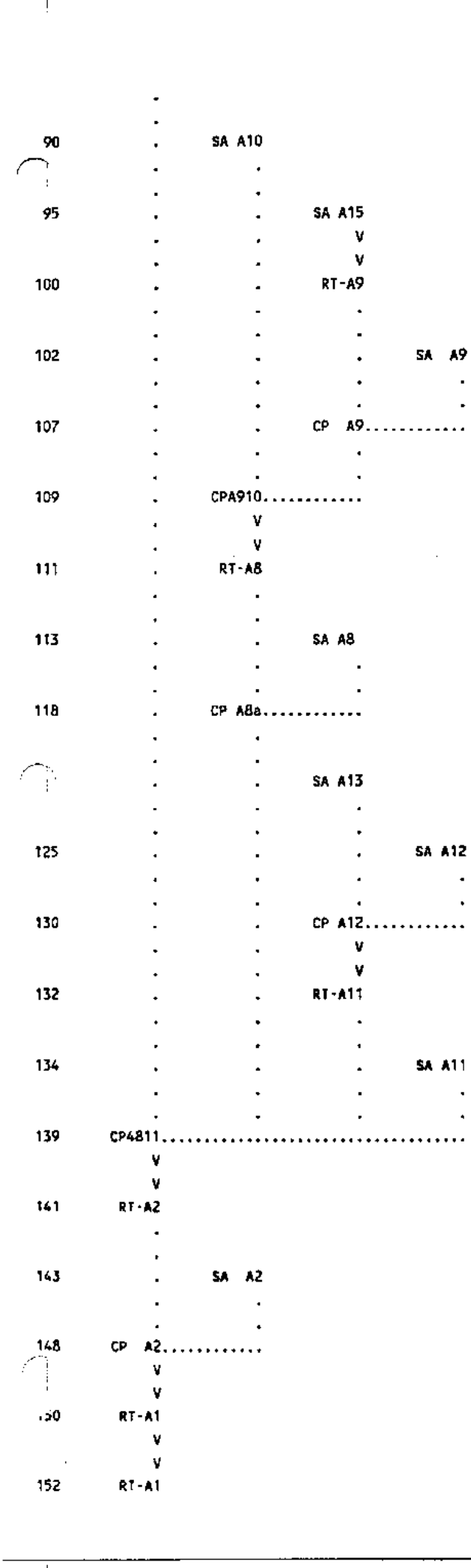
SCHEMATIC DIAGRAM OF STREAM NETWORK

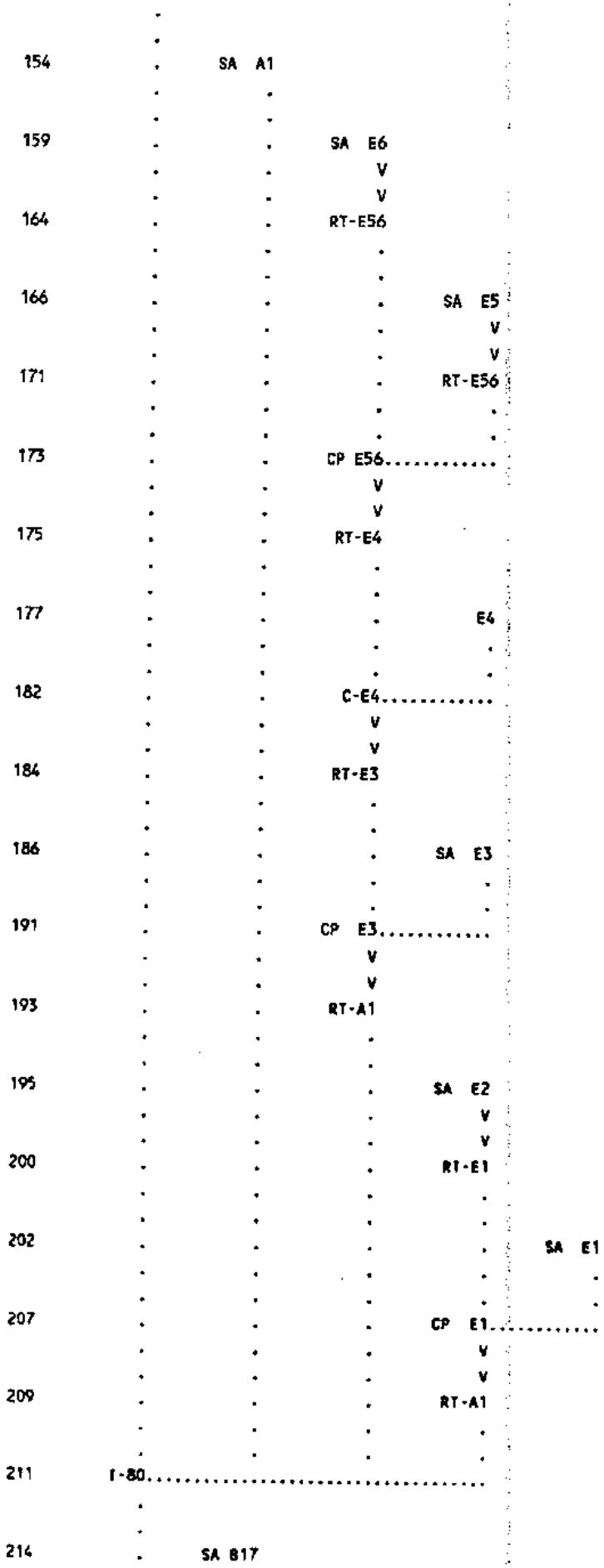
INPUT LINE NO.

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

(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW




90 SA A10
95 SA A15
100 RT-A9
102 SA A9
107 CP A9
109 CPA910
111 RT-A8
113 SA A8
118 CP A8a
125 SA A12
130 CP A12
132 RT-A11
134 SA A11
139 CP4811
141 RT-A2
143 SA A2
148 CP A2
150 RT-A1
152 RT-A1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SA E6
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RT-E56
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SA E5
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RT-E56
173
CP E56
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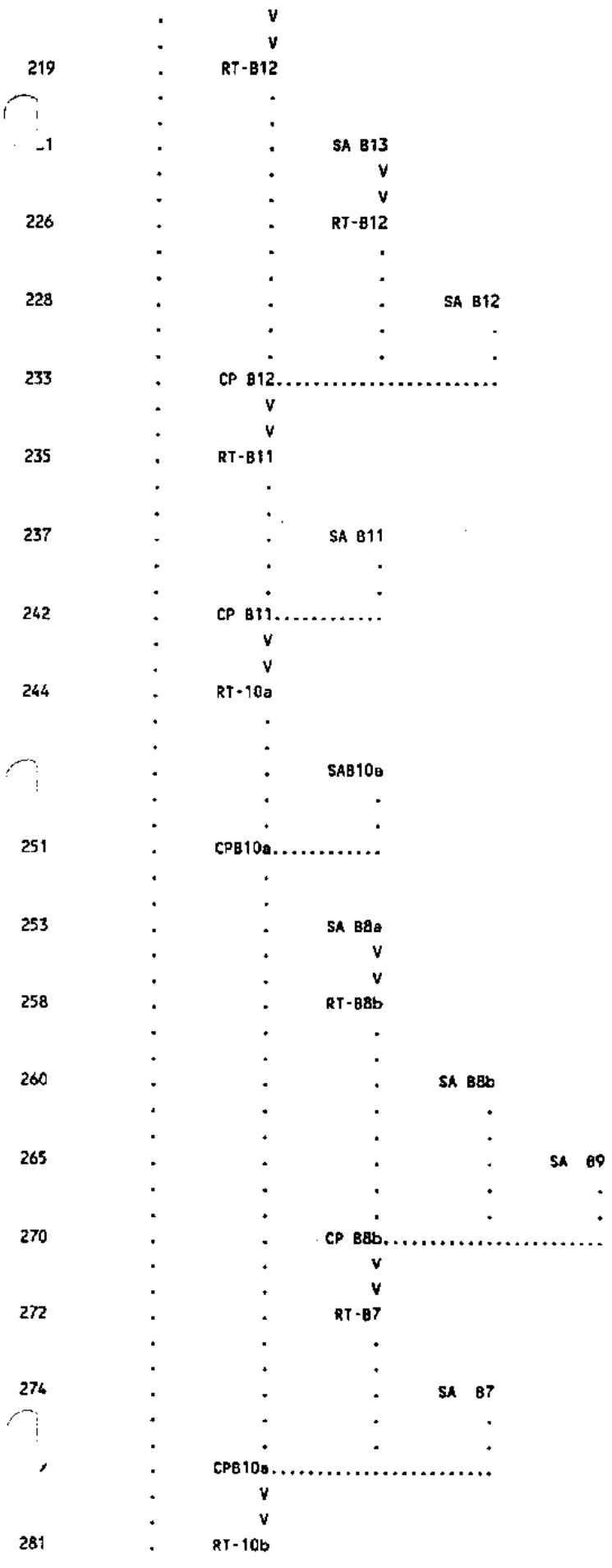
RT-E4
177
E4
182
C-E4
184
RT-E3
186
SA E3
191
CP E3
193
RT-A1
195
SA E2
200
RT-E1
202
SA E1
207
CP E1
209
RT-A1
211
I-80
214
SA B17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CP B12
RT-B11
SA B11
CP B11
RT-10a
SAB10a
CPB10a
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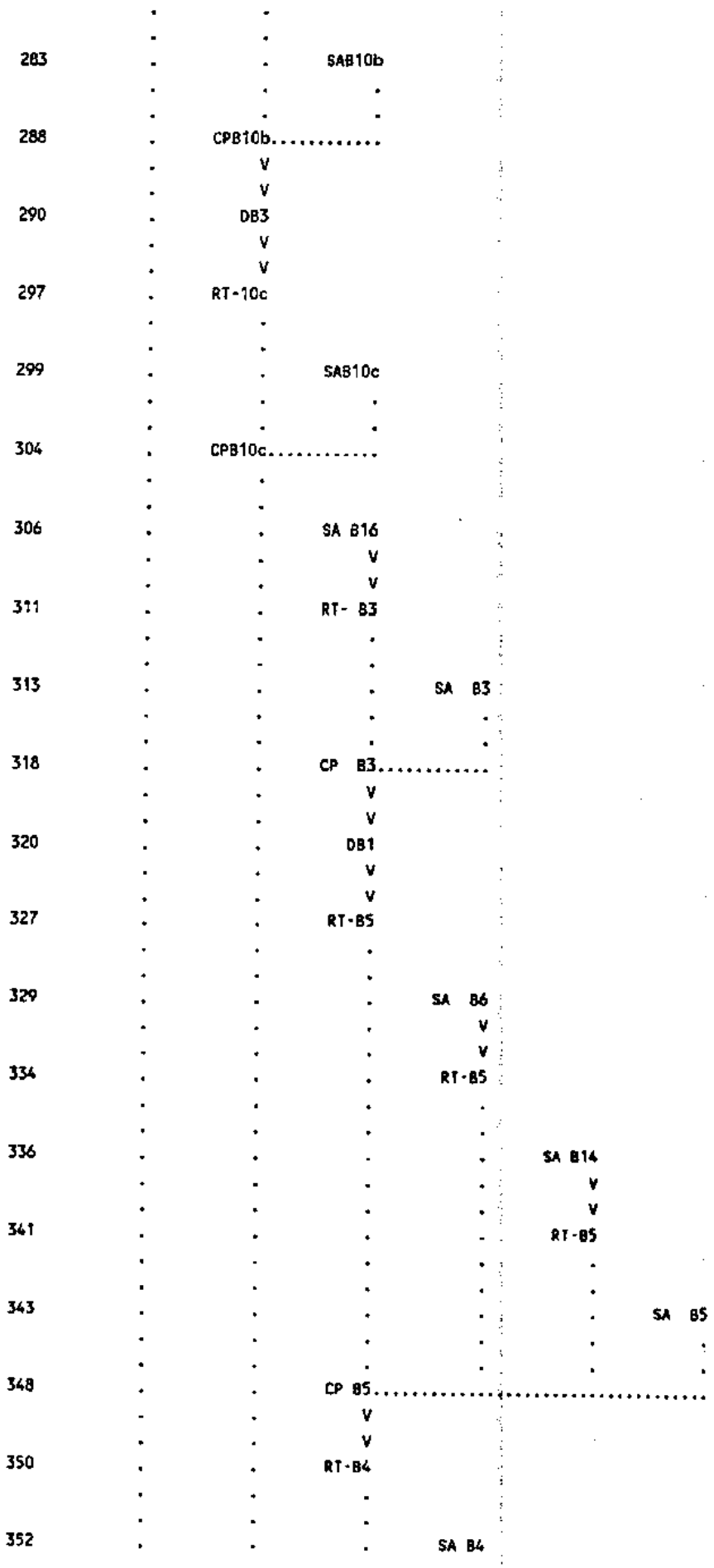
RT-B8b
SA B8b
SA B9
CP B8b
RT-B7
SA B7
CPB10a
RT-10b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SAB10b
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CPB10b
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DB3
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RT-10c
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SAB10c
304
CPB10c
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SA B16
311
RT- B3
313
SA B3
318
CP B3
320
DB1
327
RT-B5
329
SA B6
334
RT-B5
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SA B14
341
RT-B5
343
SA B5
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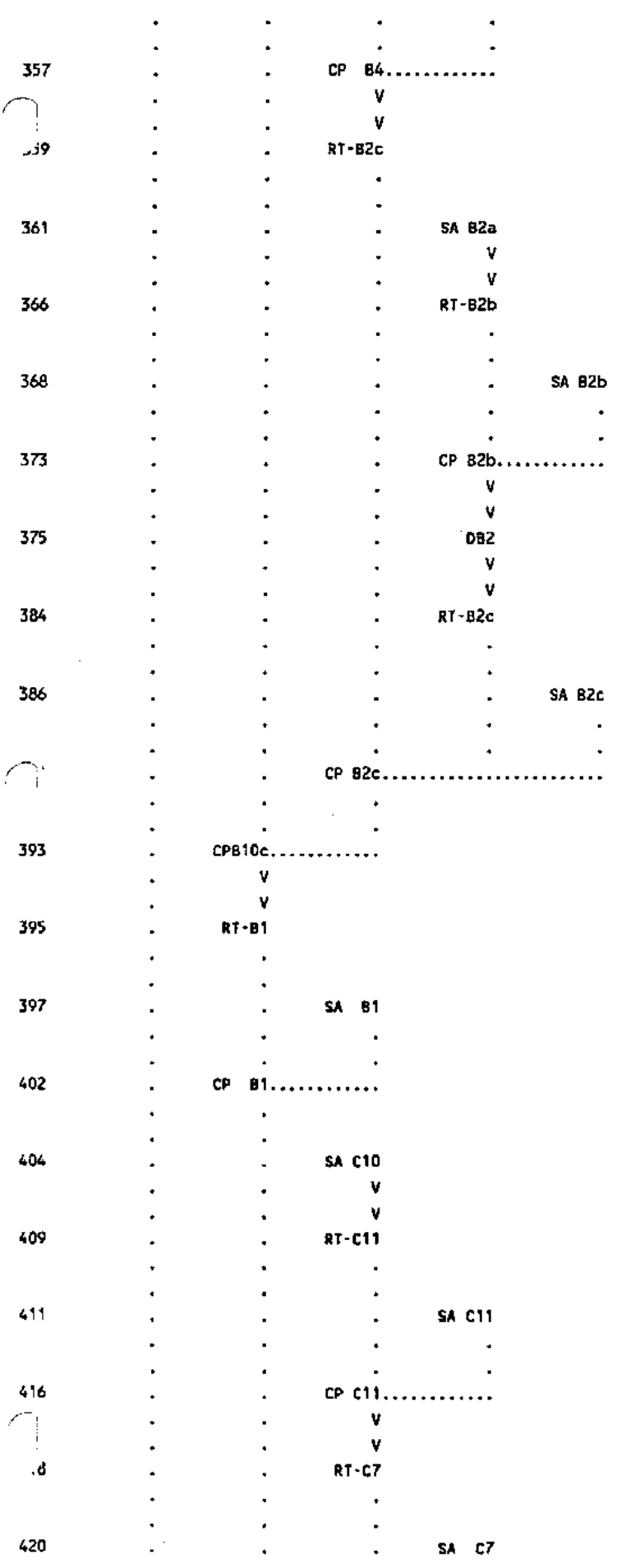
CP B5
350
RT-B4
352
SA B4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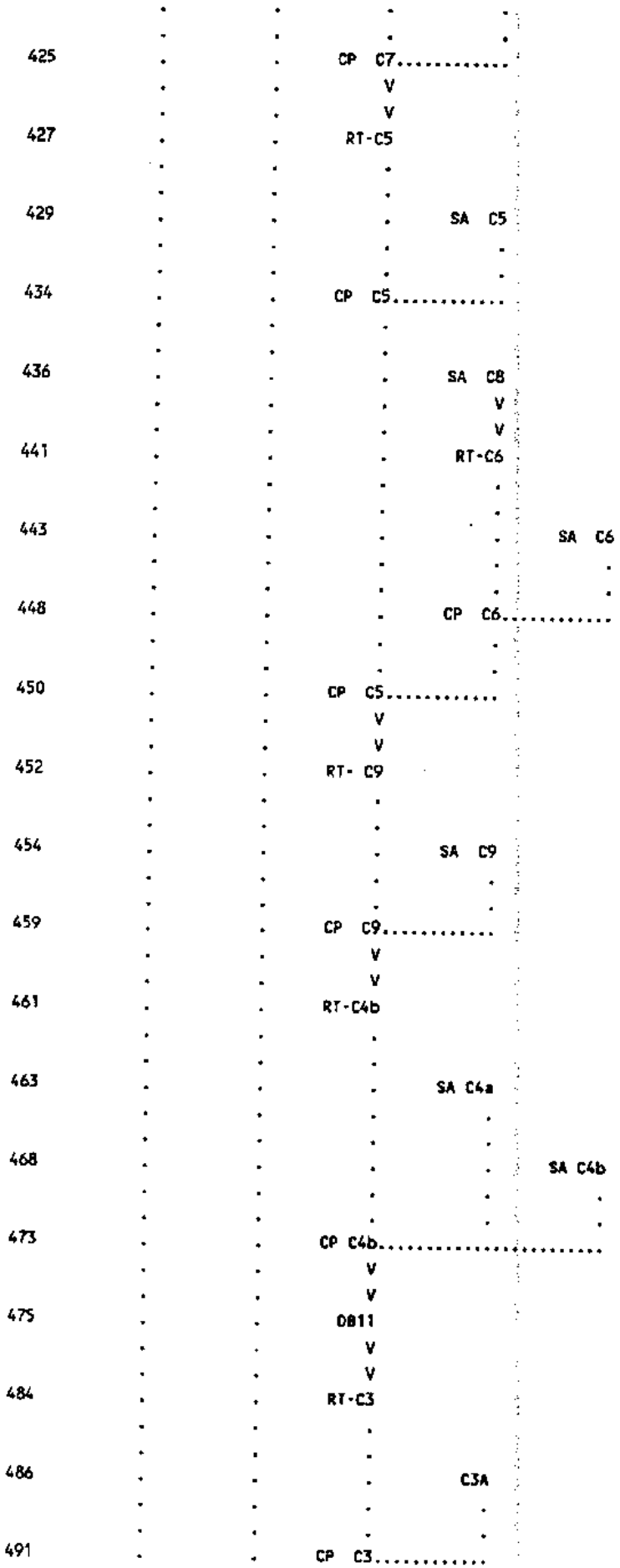
RT-B2c
361 SA B2a
366 RT-B2b
368 SA B2b
373 CP B2b
375 DB2
384 RT-B2c
386 SA B2c
CP B2c
393 CPB10c
395 RT-B1
397 SA B1
402 CP B1
404 SA C10
409 RT-C11
411 SA C11
416 CP C11
RT-C7
420 SA C7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SA C5
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CP C5
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SA C8
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RT-C6
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SA C6
448
CP C6
450
CP C5
452
RT- C9
454
SA C9
459
CP C9
461
RT-C4b
463
SA C4a
468
SA C4b
473
CP C4b
475
DB11
484
RT-C3
486
C3A
491
CP C3

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                    V
                    V
493                DB4
                    V
                    V
502             RT-C3B
                    .
                    .
504                 .          C3B
                    .           .
                    .           .
509             C-C3B............
                    .
                    .
511                 .       SA  C2
                    .           .
                    .           .
516             CP  C3...........
                    V
                    V
518             RT-C1
                    .
                    .
520                 .       SA  C1
                    .           .
                    .           .
525             CP  C1...........
                    .
                    .
            CP C81...........
                V
                V
529         RT-D1
                .
                .
531             .       SA  D1
                .           .
                .           .
536         MOGULE...........
                .
                .
539             .       SA F1A
                    V
                    V
544             .      DB13
                    V
                    V
553             .      RT-F1B
                    .
                    .
555             .           .   SA F18
                    .           .
                    .           .
560             .          F1...........
                    .
                    .
582             .           .   SA  F2
                    .           .
                    .           .
567             .       MOGULW...........
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*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              MAY  1991                *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:37:50   *
*                                       *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
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| SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
|                    "PHASE I TO III" 5 YEAR MODEL                       |
| DEVELOPED CONDITION WITH DETENTION BASINS                              |
| Washoe County, Nevada                                                  |
|                                                                        |
| 5-Year Analysis                                                        |
|   - For offsite areas                                                  |
|   - Watersheds measured from USGS 7.5 Minute Quads                     |
|   - Rainfall entered using hypothetical storm option                   |
|   - Rainfall data estimated using revised NOAA precipitation data      |
|   - Curve number estimates based on Sage-Grass, as described in TR-55  |
|     (SCS, 1986)  or NEH-4 (SCS, 1972)                                  |
|   - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
|     as modified for the Washoe County Hydrologic Criteria Manual.      |
|                                                                        |
| File: SSP3-005.DAT                          WRC NEVADA, INC.           |
| APRIL 1998                                  1575 DELUCCHI LN STE.207A  |
| Project No.   3011                          Reno, Nevada  89502        |
|                                            (702)332-3737,FAX 332-3740  |
```

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24 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      1441  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE    4   0  ENDING DATE
                 NDTIME     0000  ENDING TIME
                 ICENT        19  CENTURY MARK

           COMPUTATION INTERVAL     0.05 HOURS
               TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	62.	12.40	18.	6.	2.	0.41		
ROUTED TO	RT-A7	63.	12.55	18.	6.	2.	0.41		
HYDROGRAPH AT	SA A7	66.	12.35	17.	6.	2.	0.30		
2 COMBINED AT	CP A7	116.	12.50	35.	12.	4.	0.71		
ROUTED TO	RT-A6a	116.	12.50	35.	12.	4.	0.71		
HYDROGRAPH AT	SA A6a	14.	12.20	3.	1.	0.	0.06		
2 COMBINED AT	CP A6a	120.	12.50	38.	13.	4.	0.77		
ROUTED TO	DB12	63.	13.00	38.	13.	4.	0.77	5439.42	13.00
ROUTED TO	RT-A6b	63.	13.15	38.	13.	4.	0.77		
HYDROGRAPH AT	SA A6b	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP A6b	66.	13.05	40.	14.	5.	0.82		
ROUTED TO	RT-A5	67.	13.10	40.	14.	5.	0.82		
HYDROGRAPH AT	SA A5	61.	12.15	10.	4.	1.	0.12		
2 COMBINED AT	CP A5	90.	12.20	50.	18.	6.	0.94		
ROUTED TO	RT-A4	91.	12.30	50.	18.	6.	0.94		
HYDROGRAPH AT	SA A3	31.	12.25	6.	2.	1.	0.13		
HYDROGRAPH AT	SA A4	0.	15.30	0.	0.	0.	0.04		
3 COMBINED AT	CP A4	120.	12.30	56.	20.	7.	1.11		
HYDROGRAPH AT	SA A10	66.	12.35	17.	6.	2.	0.28		
HYDROGRAPH AT	SA A15	39.	12.35	10.	3.	1.	0.16		
ROUTED TO	RT-A9	39.	12.60	10.	3.	1.	0.16		
HYDROGRAPH AT	SA A9	75.	12.40	20.	7.	2.	0.36		
2 COMBINED AT	CP A9	102.	12.50	30.	10.	3.	0.52		
2 COMBINED AT	CPA910	157.	12.50	46.	16.	5.	0.80		
ROUTED TO	RT-A8	155.	12.65	46.	16.	5.	0.80		
HYDROGRAPH AT	SA A8	18.	12.40	5.	2.	1.	0.14		

2 COMBINED AT	CP A8a	168.	12.65	52.	18.	6.	0.94
HYDROGRAPH AT	SA A13	42.	12.35	10.	4.	1.	0.20
HYDROGRAPH AT	SA A12	13.	12.25	3.	1.	0.	0.05
2 COMBINED AT	CP A12	54.	12.30	13.	5.	2.	0.25
ROUTED TO	RT-A11	54.	12.50	13.	5.	2.	0.25
HYDROGRAPH AT	SA A11	13.	12.40	4.	1.	0.	0.13
4 COMBINED AT	CP4811	315.	12.50	125.	44.	15.	2.43
ROUTED TO	RT-A2	318.	12.65	125.	44.	15.	2.43
HYDROGRAPH AT	SA A2	36.	12.35	10.	3.	1.	0.23
2 COMBINED AT	CP A2	338.	12.65	134.	47.	16.	2.66
ROUTED TO	RT-A1	337.	12.65	135.	47.	16.	2.66
ROUTED TO	RT-A1	338.	12.75	135.	47.	16.	2.66
HYDROGRAPH AT	SA A1	12.	12.40	4.	1.	0.	0.11
HYDROGRAPH AT	SA E6	1.	12.40	1.	0.	0.	0.04
ROUTED TO	RT-E56	1.	12.60	1.	0.	0.	0.04
HYDROGRAPH AT	SA E5	23.	12.30	6.	2.	1.	0.12
ROUTED TO	RT-E56	23.	12.50	6.	2.	1.	0.12
2 COMBINED AT	CP E56	24.	12.55	6.	2.	1.	0.17
ROUTED TO	RT-E4	27.	12.80	6.	2.	1.	0.17
HYDROGRAPH AT	E4	53.	12.45	16.	6.	2.	0.42
2 COMBINED AT	C-E4	59.	12.80	23.	8.	3.	0.59
ROUTED TO	RT-E3	58.	13.05	23.	8.	3.	0.59
HYDROGRAPH AT	SA E3	14.	12.35	4.	1.	0.	0.12
2 COMBINED AT	CP E3	63.	12.60	26.	9.	3.	0.71
ROUTED TO	RT-A1	63.	13.05	26.	9.	3.	0.71
HYDROGRAPH AT	SA E2	1.	15.60	1.	1.	0.	0.17
ROUTED TO	RT-E1	1.	16.10	1.	1.	0.	0.17
HYDROGRAPH AT	SA E1	13.	12.40	4.	1.	0.	0.12
2 COMBINED AT	CP E1	13.	12.40	5.	2.	1.	0.28
ROUTED TO	RT-A1	13.	12.50	5.	2.	1.	0.28

4 COMBINED AT	I-80	412.	12.75	169.	60.	20.	3.76		
HYDROGRAPH AT	SA B17	64.	12.40	19.	6.	2.	0.41		
ROUTED TO	RT-B12	63.	12.70	19.	6.	2.	0.41		
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24		
ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24		
HYDROGRAPH AT	SA B12	55.	12.30	15.	5.	2.	0.35		
3 COMBINED AT	CP B12	116.	12.60	41.	14.	5.	1.00		
ROUTED TO	RT-B11	117.	12.70	41.	14.	5.	1.00		
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP B11	122.	12.70	44.	15.	5.	1.08		
ROUTED TO	RT-10a	124.	12.80	44.	15.	5.	1.08		
HYDROGRAPH AT	SAB10a	28.	12.30	6.	2.	1.	0.11		
2 COMBINED AT	CPB10a	133.	12.80	49.	17.	6.	1.19		
HYDROGRAPH AT	SA B8a	41.	12.30	10.	3.	1.	0.24		
ROUTED TO	RT-B8b	41.	12.35	10.	3.	1.	0.24		
HYDROGRAPH AT	SA B8b	15.	12.20	3.	1.	0.	0.04		
HYDROGRAPH AT	SA B9	11.	12.30	3.	1.	0.	0.06		
3 COMBINED AT	CP B8b	63.	12.30	15.	5.	2.	0.34		
ROUTED TO	RT-B7	63.	12.40	15.	5.	2.	0.34		
HYDROGRAPH AT	SA B7	4.	12.25	1.	0.	0.	0.02		
3 COMBINED AT	CPB10a	163.	12.80	65.	23.	8.	1.55		
ROUTED TO	RT-10b	162.	12.80	65.	23.	8.	1.55		
HYDROGRAPH AT	SAB10b	17.	12.10	3.	1.	0.	0.04		
2 COMBINED AT	CPB10b	165.	12.80	67.	24.	8.	1.59		
ROUTED TO	DB3	143.	12.95	67.	24.	8.	1.59	5015.33	12.95
ROUTED TO	RT-10c	143.	13.00	67.	24.	8.	1.59		
HYDROGRAPH AT	SA810c	6.	12.10	1.	0.	0.	0.01		
2 COMBINED AT	CPB10c	144.	13.00	68.	24.	8.	1.60		
HYDROGRAPH AT	SA B16	31.	12.30	7.	2.	1.	0.09		
ROUTED TO	RT- B3	31.	12.30	7.	2.	1.	0.09		

HYDROGRAPH AT	SA B3	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B3	45.	12.25	10.	3.	1.	0.14		
ROUTED TO	DB1	4.	17.10	4.	3.	1.	0.14	5054.01	17.45
ROUTED TO	RT-B5	4.	17.55	4.	3.	1.	0.14		
HYDROGRAPH AT	SA B6	6.	12.25	1.	0.	0.	0.03		
ROUTED TO	RT-B5	6.	12.40	1.	0.	0.	0.03		
HYDROGRAPH AT	SA B14	17.	12.25	4.	1.	0.	0.09		
ROUTED TO	RT-B5	17.	12.40	4.	1.	0.	0.09		
HYDROGRAPH AT	SA B5	16.	12.30	4.	1.	0.	0.08		
4 COMBINED AT	CP B5	39.	12.40	13.	6.	2.	0.33		
ROUTED TO	RT-B4	40.	12.45	13.	6.	2.	0.33		
HYDROGRAPH AT	SA B4	13.	12.15	2.	1.	0.	0.04		
2 COMBINED AT	CP B4	45.	12.40	15.	7.	2.	0.37		
ROUTED TO	RT-B2c	45.	12.50	15.	7.	2.	0.37		
HYDROGRAPH AT	SA B2a	21.	12.15	4.	1.	0.	0.05		
ROUTED TO	RT-B2b	22.	12.25	4.	1.	0.	0.05		
HYDROGRAPH AT	SA B2b	50.	12.20	8.	3.	1.	0.13		
2 COMBINED AT	CP B2b	68.	12.20	12.	4.	1.	0.18		
ROUTED TO	DB2	58.	12.30	12.	4.	1.	0.18	5049.59	12.30
ROUTED TO	RT-B2c	58.	12.40	12.	4.	1.	0.18		
HYDROGRAPH AT	SA B2c	18.	12.25	4.	1.	0.	0.06		
3 COMBINED AT	CP B2c	110.	12.45	30.	13.	4.	0.61		
2 COMBINED AT	CPB10c	192.	12.50	97.	37.	12.	2.21		
ROUTED TO	RT-B1	192.	12.55	97.	37.	12.	2.21		
HYDROGRAPH AT	SA B1	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B1	196.	12.55	100.	38.	13.	2.26		
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66		
ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66		
HYDROGRAPH AT	SA C11	97.	12.25	19.	6.	2.	0.32		
2 COMBINED AT	CP C11	198.	12.45	58.	20.	7.	0.97		

ROUTED TO	RT-C7	198.	12.55	58.	20.	7.	0.97		
HYDROGRAPH AT	SA C7	73.	12.30	17.	6.	2.	0.34		
2 COMBINED AT	CP C7	243.	12.55	75.	25.	8.	1.31		
ROUTED TO	RT-C5	243.	12.60	75.	25.	8.	1.31		
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15		
2 COMBINED AT	CP C5	257.	12.60	81.	27.	9.	1.46		
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24		
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24		
HYDROGRAPH AT	SA C6	14.	12.30	4.	1.	0.	0.10		
2 COMBINED AT	CP C6	70.	12.40	16.	5.	2.	0.33		
2 COMBINED AT	CP C5	306.	12.50	97.	33.	11.	1.80		
ROUTED TO	RT- C9	305.	12.55	97.	33.	11.	1.80		
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11		
2 COMBINED AT	CP C9	313.	12.50	100.	34.	11.	1.91		
ROUTED TO	RT-C4b	313.	12.60	100.	34.	11.	1.91		
HYDROGRAPH AT	SA C4a	17.	12.25	4.	1.	0.	0.09		
HYDROGRAPH AT	SA C4b	6.	12.25	1.	0.	0.	0.04		
3 COMBINED AT	CP C4b	322.	12.55	104.	36.	12.	2.04		
ROUTED TO	DB11	179.	13.15	104.	36.	12.	2.04	5105.92	13.15
ROUTED TO	RT-C3	179.	13.20	104.	36.	12.	2.04		
HYDROGRAPH AT	C3A	11.	12.35	3.	1.	0.	0.12		
2 COMBINED AT	CP C3	183.	13.20	108.	37.	12.	2.16		
ROUTED TO	DB4	180.	13.30	107.	37.	12.	2.16	5023.39	13.30
ROUTED TO	RT-C3B	180.	13.35	107.	37.	12.	2.16		
HYDROGRAPH AT	C3B	12.	12.35	3.	1.	0.	0.10		
2 COMBINED AT	C-C3B	184.	13.35	111.	38.	13.	2.26		
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17		
2 COMBINED AT	CP C3	190.	13.35	116.	40.	13.	2.43		
ROUTED TO	RT-C1	190.	13.40	116.	40.	13.	2.43		
HYDROGRAPH AT	SA C1	12.	12.30	3.	1.	0.	0.08		

2 COMBINED AT	CP C1	193.	13.40	118.	41.	14.	2.51		
2 COMBINED AT	CP CB1	364.	13.20	218.	78.	26.	4.77		
ROUTED TO	RT-D1	364.	13.30	218.	78.	26.	4.77		
HYDROGRAPH AT	SA D1	31.	12.30	8.	3.	1.	0.22		
2 COMBINED AT	MOGULE	372.	13.30	225.	81.	27.	4.99		
HYDROGRAPH AT	SA F1A	22.	12.15	4.	1.	0.	0.07		
ROUTED TO	DB13	4.	13.40	3.	1.	0.	0.07	5068.24	13.45
ROUTED TO	RT-F1B	4.	13.60	3.	1.	0.	0.07		
HYDROGRAPH AT	SA F1B	20.	12.25	4.	2.	1.	0.11		
2 COMBINED AT	F1	21.	12.25	7.	3.	1.	0.18		
HYDROGRAPH AT	SA F2	24.	12.30	6.	2.	1.	0.14		
2 COMBINED AT	MOGULW	44.	12.25	13.	5.	2.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	62.58	753.00	0.57	3.00	62.58	753.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1250E+02 EXCESS=0.0000E+00 OUTFLOW=0.1250E+02 BASIN STORAGE=0.2748E-02 PERCENT ERROR= -0.1

RT-A6a	MANE	1.35	115.89	749.79	0.64	3.00	115.80	750.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2421E+02 EXCESS=0.0000E+00 OUTFLOW=0.2421E+02 BASIN STORAGE=0.3375E-03 PERCENT ERROR= 0.0

RT-A6b	MANE	3.00	63.09	789.00	0.64	3.00	63.09	789.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2604E+02 EXCESS=0.0000E+00 OUTFLOW=0.2604E+02 BASIN STORAGE=0.1315E-02 PERCENT ERROR= 0.0

RT-A5	MANE	3.00	66.58	786.00	0.64	3.00	66.58	786.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2800E+02 EXCESS=0.0000E+00 OUTFLOW=0.2800E+02 BASIN STORAGE=0.6379E-03 PERCENT ERROR= 0.0

RT-A4	MANE	3.00	91.43	738.00	0.70	3.00	91.43	738.00	0.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3509E+02 EXCESS=0.0000E+00 OUTFLOW=0.3509E+02 BASIN STORAGE=0.2028E-02 PERCENT ERROR= 0.0

RT-A9	MANE	3.00	39.25	756.00	0.79	3.00	39.25	756.00	0.79

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6619E+01 EXCESS=0.0000E+00 OUTFLOW=0.6622E+01 BASIN STORAGE=0.3590E-02 PERCENT ERROR= -0.1

RT-A8	MANE	3.00	155.28	759.00	0.74	3.00	155.28	759.00	0.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3169E+02 EXCESS=0.0000E+00 OUTFLOW=0.3170E+02 BASIN STORAGE=0.3494E-02 PERCENT ERROR= 0.0

RT-A11	MANE	3.00	54.00	750.00	0.67	3.00	54.00	750.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8961E+01 EXCESS=0.0000E+00 OUTFLOW=0.8961E+01 BASIN STORAGE=0.2332E-02 PERCENT ERROR= 0.0

RT-A2	MANE	3.00	318.03	759.00	0.67	3.00	318.03	759.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8698E+02 EXCESS=0.0000E+00 OUTFLOW=0.8699E+02 BASIN STORAGE=0.3093E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.77	338.25	761.39	0.66	3.00	336.61	759.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9360E+02 EXCESS=0.0000E+00 OUTFLOW=0.9360E+02 BASIN STORAGE=0.9559E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	337.79	765.00	0.66	3.00	337.79	765.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9362E+02 EXCESS=0.0000E+00 OUTFLOW=0.9362E+02 BASIN STORAGE=0.2700E-02 PERCENT ERROR= 0.0

RT-E56	MANE	1.35	1.28	756.00	0.20	3.00	1.28	756.00	0.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4858E+00 EXCESS=0.0000E+00 OUTFLOW=0.4864E+00 BASIN STORAGE=0.1125E-02 PERCENT ERROR= -0.4

RT-E56	MANE	3.00	23.33	750.00	0.61	3.00	23.33	750.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4011E+01 EXCESS=0.0000E+00 OUTFLOW=0.4012E+01 BASIN STORAGE=0.1771E-02 PERCENT ERROR= -0.1

RT-E4	MANE	3.00	27.49	768.00	0.50	3.00	27.49	768.00	0.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4499E+01 EXCESS=0.0000E+00 OUTFLOW=0.4504E+01 BASIN STORAGE=0.4016E-02 PERCENT ERROR= -0.2

RT-E3	MANE	3.00	57.68	783.00	0.51	3.00	57.68	783.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1598E+02 EXCESS=0.0000E+00 OUTFLOW=0.1599E+02 BASIN STORAGE=0.2251E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.04	62.94	783.18	0.49	3.00	62.71	783.00	0.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1859E+02 EXCESS=0.0000E+00 OUTFLOW=0.1859E+02 BASIN STORAGE=0.5213E-03 PERCENT ERROR= 0.0

RT-E1	MANE	3.00	1.28	972.00	0.11	3.00	1.28	972.00	0.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1003E+01 EXCESS=0.0000E+00 OUTFLOW=0.1003E+01 BASIN STORAGE=0.2248E-02 PERCENT ERROR= -0.3

RT-A1	MANE	3.00	13.22	750.00	0.25	3.00	13.22	750.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3681E+01 EXCESS=0.0000E+00 OUTFLOW=0.3681E+01 BASIN STORAGE=0.1370E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	63.43	762.00	0.57	3.00	63.43	762.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8464E+00 EXCESS=0.0000E+00 OUTFLOW=0.8468E+00 BASIN STORAGE=0.1350E-02 PERCENT ERROR= -0.2

RT-B5	MANE	3.00	17.17	744.00	0.58	3.00	17.17	744.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2697E+01 EXCESS=0.0000E+00 OUTFLOW=0.2697E+01 BASIN STORAGE=0.1645E-02 PERCENT ERROR= -0.1

RT-B4	MANE	3.00	39.71	747.00	0.71	3.00	39.71	747.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1262E+02 EXCESS=0.0000E+00 OUTFLOW=0.1262E+02 BASIN STORAGE=0.6230E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	45.11	750.00	0.72	3.00	45.10	750.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1416E+02 EXCESS=0.0000E+00 OUTFLOW=0.1416E+02 BASIN STORAGE=0.7656E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	21.95	735.00	0.88	3.00	21.95	735.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2453E+01 EXCESS=0.0000E+00 OUTFLOW=0.2453E+01 BASIN STORAGE=0.9424E-03 PERCENT ERROR= -0.1

RT-B2c	MANE	3.00	58.24	744.00	0.88	3.00	58.24	744.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8337E+01 EXCESS=0.0000E+00 OUTFLOW=0.8338E+01 BASIN STORAGE=0.1469E-02 PERCENT ERROR= 0.0

RT-B1	MANE	3.00	191.66	753.00	0.62	3.00	191.66	753.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7265E+02 EXCESS=0.0000E+00 OUTFLOW=0.7265E+02 BASIN STORAGE=0.1112E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	198.11	753.00	0.76	3.00	198.11	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3927E+02 EXCESS=0.0000E+00 OUTFLOW=0.3927E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	243.33	756.00	0.72	3.00	243.33	756.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5056E+02 EXCESS=0.0000E+00 OUTFLOW=0.5056E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT- C9	MANE	2.28	306.83	751.45	0.68	3.00	305.11	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6534E+02 EXCESS=0.0000E+00 OUTFLOW=0.6534E+02 BASIN STORAGE=0.7993E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	2.42	313.20	753.57	0.66	3.00	312.74	756.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6752E+02 EXCESS=0.0000E+00 OUTFLOW=0.6752E+02 BASIN STORAGE=0.6963E-03 PERCENT ERROR= 0.0

RT-C3	MANE	3.00	179.06	792.00	0.65	3.00	179.06	792.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7087E+02 EXCESS=0.0000E+00 OUTFLOW=0.7087E+02 BASIN STORAGE=0.1068E-02 PERCENT ERROR= 0.0

RT-C3B	MANE	2.36	180.41	801.57	0.63	3.00	180.35	801.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7314E+02 EXCESS=0.0000E+00 OUTFLOW=0.7314E+02 BASIN STORAGE=0.5891E-03 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	189.77	804.00	0.61	3.00	189.77	804.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7898E+02 EXCESS=0.0000E+00 OUTFLOW=0.7898E+02 BASIN STORAGE=0.1193E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	363.64	798.00	0.61	3.00	363.64	798.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1556E+03 EXCESS=0.0000E+00 OUTFLOW=0.1556E+03 BASIN STORAGE=0.2097E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	3.60	822.00	0.65	3.00	3.60	822.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2511E+01 EXCESS=0.0000E+00 OUTFLOW=0.2511E+01 BASIN STORAGE=0.1447E-02 PERCENT ERROR= -0.1

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

Appendix F - Project Phasing Analysis

HEC-1 Output
100-Year Proposed Condition Analysis
Phase I to III Improvements Only

WRC NEVADA, INC.

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
*  RUN DATE  05/06/98  TIME  14:39:04   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ================================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                          |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                     |
    4     ID   |                        "PHASE I TO III" 100 YEAR MODEL                       |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                                    |
    6     ID   | Washoe County, Nevada                                                        |
    7     ID   |                                                                              |
    8     ID   |  100-Year Analysis                                                           |
    9     ID   |    - For offsite areas                                                       |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                          |
   11     ID   |    - Rainfall entered using hypothetical storm option                        |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data          |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55      |
   14     ID   |       (SCS, 1986)  or NEH-4 (SCS, 1972)                                     |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)   |
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.           |
   17     ID   |                                                                              |
   18     ID   | File: SSP3-100.DAT                              WRC NEVADA, INC.             |
   19     ID   | APRIL 1998                                      1575 DELUCCHI LN STE.207A    |
   20     ID   | Project No.   3011                              Reno, Nevada  89502          |
   21     ID   |                                               (702)332-3737,FAX 332-3740     |
   22     ID   ================================================================================
   23     IT       3       0       0    1441
   24     IO       5       0       0
          *
          *
          * *********    WATERSHED SUBAREA A    *************
          *
          *

   25     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   26     PH       1             0.60    1.09    1.81    2.05    2.23    2.60    3.48    4.35
   27     BA  0.4094
   28     LS       0      73
   29     UD    0.32
          *

   30     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   31     RD    5700    0.14    0.07           TRAP       6       3
          *

   32     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   33     PH       1             0.55    1.00    1.67    1.91    2.10    2.49    3.27    4.06
   34     BA  0.3002
   35     LS       0      79
   36     UD    0.31
          *

   37     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   38     HC       2
          *
```

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

  39      KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
  40      RD     700   0.140    0.07            TRAP       6       3
          *

  41      KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
  42      PH       1            0.55    1.00    1.67    1.88    2.04    2.37    3.18    4.00
  43      BA  0.0583
  44      LS       0      78
  45      UD    0.14
          *

  46      KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
  47      HC       2
          *

  48      KK    DB12 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 12
  49      KM         24" RCP ie 5425
  50      KM         4'x4'RCB at 5439
  51      RS       1    STOR      -1
  52      SA    .039    .122    .276    .531    .840   1.162
  53      SE    5425    5430    5435    5440    5445    5450
  54      SQ       0    21.4    30.3    37.1    42.8    47.8    52.4    56.6    87.7   141.0
  55      SQ   208.7   288.2   317.7   598.6
  56      SE    5425    5427    5429    5431    5433    5435    5437    5439    5441    5443
  57      SE    5445    5447    5449    5451
          *

  58      KK  RT-A6b ROUTE HOROGRAPH TO OUTLET OF AREA A6b
  59      RD    2400   0.069    0.07            TRAP       6       3
          *

  60      KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
  61      PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
  62      BA  0.0508
  63      LS       0      81
  64      UD    0.15
          *

  65      KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
  66      HC       2
          *

  67      KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
  68      RD    1100   0.055    0.07            TRAP       6       3
          *

  69      KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
  70      PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.02    3.77
  71      BA  0.1196
  72      LS       0      88
  73      UD    0.14
          *
```

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

  74      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  75      HC       2
          *

  76      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  77      RD    2900   0.055     .07          TRAP       6       3
          *

  78      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  79      PH       1            0.49   0.89   1.48   1.69   1.84   2.17   2.92   3.66
  80      BA  0.1329
  81      LS       0      80
  82      UD    0.19
          *

  83      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  84      PH       1            0.50   0.91   1.52   1.73   1.89   2.21   2.98   3.75
  85      BA  0.0428
  86      LS       0      61
  87      UD    0.20
          *

  88      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  89      HC       3
          *

  90      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  91      PH       1            0.57   1.04   1.74   1.96   2.13   2.49   3.30   4.11
  92      BA  0.2852
  93      LS       0      79
  94      UD    0.30
          *
          * ************* NOT INCLUDED BECAUSE SA A10 IS IN EXISTING CONDITIONS *******
          *
          * KK  DB10 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 10
          * KM       24"RCP ie 5375
          * RS     1    STOR      -1
          * SA   .04     .11     .26    .294    .396    .508    .628    .754    1.23
          * SE  5375    5380    5385    5390    5392    5394    5396    5398    5400
          * SQ     0    12.0    24.0    36.0    48.0    60.0    72.0
          * SE  5375 5376.75 5378.47 5381.39 5385.47 5391.99 5406.13
          *

  95      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
  96      PH       1            0.60   1.09   1.81   2.04   2.21   2.58   3.46   4.35
  97      BA  0.1563
  98      LS       0      78
  99      UD    0.29
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

100       KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
101       RD    6800   0.165     .08           TRAP       6       3
          *

102       KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
103       PH       1            0.57    1.04    1.74    1.97    2.14    2.51    3.32    4.13
104       BA  0.3677
105       LS       0      78
106       UD    0.33
          *

107       KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
108       HC       2
          *

109       KK     D89 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 9
110       KM          2-60"RCP ie 5382
111       RS       1    STOR      -1
112       SA   0.168   0.213   0.262   0.314
113       SE    5384    5386    5388    5390
114       SQ    0.00      60     120     180     240     300     360     420     480     524
115       SE    5382 5383.63 5384.76 5385.64 5386.46 5387.32 5388.31 5389.48 5390.86 5392.00
          *

116       KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
117       HC       2
          *

118       KK   RT-A8 ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8
119       RD    4800   0.050     .07           TRAP       6       3
          *

120       KK   SA A8 GENERATE HYDOGRAPH FOR SUB-AREA A8
121       PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
122       BA  0.1393
123       LS       0      75
124       UD    0.33
          *

125       KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
126       HC       2
          *

127       KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
128       PH       1            0.56    1.02    1.70    1.91    2.07     2.4    3.21    4.02
129       BA  0.1961
130       LS              78
131       UD    0.28
          *
```

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

  132     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  133     PH       1            0.55   1.00   1.67   1.88   2.04   2.37   3.18   4.00
  134     BA  0.0544
  135     LS       0      78
  136     UD    0.22
          *

  137     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  138     HC       2
          *

  139     KK     DB6 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 6
  140     KM          18" RCP ie 5184 and 6'X8' at 5191
  141     RS       1    STOR      -1
  142     SA   0.036   0.091   0.153  0.224  0.302  0.391  0.450
  143     SE    5186    5188    5190   5192   5194   5196   5198
  144     SQ     8.5    12.0    14.7   17.0   19.0   20.8   22.5   40.9   73.0  114.2
  145     SQ   162.6   189.2   249.1
  146     SE    5185    5186    5187   5188   5189   5190   5191   5192   5193   5194
  147     SE    5195  5195.5    5196
          *

  148     KK  RT-A11 ROUTE COMBINED HYDROGRAPH A12&13 TO OUTLET OF A11
  149     RD    2400  0.0147    0.07          TRAP      6      3
          *

  150     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  151     PH       1            0.54   0.98   1.63   1.82   1.96   2.26   3.04   3.82
  152     BA  0.1178
  153     LS       0      73
  154     UD    0.33
          *

  155     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A3, A4, A8 AND A11
  156     HC       4
          *

  157     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  158     RD    4400  0.0386     .07          TRAP      6      3
          *

  159     KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
  160     PH       1            0.49   0.89   1.48   1.68   1.83   2.15   2.91   3.66
  161     BA  0.2264
  162     LS       0      78
  163     UD    0.28
          *

  164     KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
  165     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

166       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
167       RD    1500    0.07    0.07           TRAP       6       3
          *

168       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
169       RD    2400  0.0125   0.040           TRAP      15       3
          *

170       KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
171       PH       1            0.48    0.87    1.45    1.64    1.78    2.08    2.79    3.51
172       BA  0.1127
173       LS       0      76
174       UD    0.33
          *
          *
          * *********   WATERSHED SUBAREA E    *************
          *
          *

175       KK  SA  E6 GENERATE HYDROGRAPH FOR SUB AREA E6
176       PH       1            0.54    0.98    1.63    1.82    1.96    2.26    3.06    3.86
177       BA  0.0448
178       LS       0      65
179       UD    0.22
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIIONS ***********
          * KK   DB5 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 5
          * KM       12"RCP ie 5114
          * RS     1    STOR      -1
          * SA  .119    .172    .231    .296    .366     0.5
          * SE  5114    5116    5118    5120    5122    5124
          * SQ     0       1       2       3       4       5       6       7       8
          * SE  5114 5114.59 5114.91 5115.24 5115.68 5116.26  5117.5 5119.38 5121.55    51
          *

180       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
181       RD    1900  0.0658    0.07           trap       6       3
          *

182       KK  SA  E5 GENERATE HYDOGRAPH FOR SUB-AREA E5
183       PH       1            0.54    0.98    1.63    1.84    2.00    2.33    3.14    3.95
184       BA   .1241
185       LS       0      77
186       UD     .27
          *

187       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
188       RD    2500   .0360     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

189       KK  CP E56 COMBINE HYDROGRAPHS FOR E5 AND E6
190       HC       2
          *

191       KK   RT-E4 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
192       RD    4500   .0310     .07          TRAP       6       3
          *

193       KK      E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
194       PH       1           0.51   0.93    1.56    1.75    1.89    2.19    2.98    3.77
195       BA   .4231
196       LS       0      76
197       UD     .36
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ********
          *
          * KK   DB8 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 8
          * KM       24"RCP ie 5122
          * RS     1    STOR      -1
          * SA  .085    .134    .198   .273    .356    .445    .540    .635
          * SE  5122    5124    5126   5128    5130    5132    5134    5136
          * SQ     0       5      10     15      20      25      30      35      40
          * SQ    50    53.4
          * SE  5122 5123.03 5123.63 5124.18 5124.86 5125.76 5126.87 5128.19 5129.70 5131.
          * SE5133.4 5135.00
          *

198       KK    C-E4 COMBINE HYDROGRAPHS FROM E5 E4 AND E6
199       HC       2
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ***********
          * KK  DB14 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 14
          * KM       12"RCP ie 5060
          * RS     1    STOR      -1
          * SA  .341    .475    .631   .811   1.025   1.274    1.50
          * SE  5060    5062    5064   5066    5068    5070    5072
          * SQ     0     2.0     4.0    6.0     8.0    10.0      12      14
          * SE5060.0  5060.9  5061.7  5063.0  5064.8  5067.4  5071.5  5072.0
          *

200       KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
201       RD    3500  0.0429     .07          TRAP       6       3
          *

202       KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
203       PH       1           0.50   0.91    1.52    1.69    1.81    2.08    2.83    3.57
204       BA  0.1191
205       LS       0      75
206       UD    0.27
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 207      KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
 208      HC       2
          *

 209      KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
 210      RD     500  0.0125     .04           TRAP      15       3
          *

 211      KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
 212      PH       1            .050    0.91    1.52    1.71    1.85    2.15    2.92    3.69
 213      BA  0.1653
 214      LS       0      62
 215      UD    0.38
          *

 216      KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
 217      RD    3200  0.0375     .07           TRAP       6       3
          *

 218      KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
 219      PH       1            0.49    0.89    1.48    1.66    1.80    2.08    2.80    3.53
 220      BA  0.1156
 221      LS       0      76
 222      UD    0.31
          *

 223      KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
 224      HC       2
          *

 225      KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
 226      RD    1200  0.0125     .04           TRAP      15       3
          *

 227      KK    I-80
 228      KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
 229      HC       4
          *
          *
          *
          * *********   WATERSHED SUBAREA B    ************
          *
          *
          *

 230      KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
 231      PH       1            0.59    1.06    1.77    2.02    2.21    2.60    3.41    4.22
 232      BA  0.4136
 233      LS       0      74
 234      UD    0.32
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  235     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
  236     RD    3900  0.0133     .07          TRAP       6       3
          *

  237     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  238     PH       1            0.59   1.06   1.77   2.01    2.2   2.58   3.44   4.31
  239     BA  0.2400
  240     LS       0      70
  241     UD    0.33
          *

  242     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  243     RD    4500  0.1510     .08          TRAP       6       3
          *

  244     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  245     PH       1            0.54   0.98   1.63   1.87   2.06   2.44   3.22   4.00
  246     BA  0.3484
  247     LS       0      75
  248     UD    0.26
          *

  249     KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  250     HC       3
          *

  251     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  252     RD    2000  0.1000     .07          TRAP       6       3
          *

  253     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  254     PH       1            0.51   0.93   1.56   1.75    1.9   2.21   2.95   3.69
  255     BA  0.0777
  256     LS       0      76
  257     UD    0.24
          *

  258     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  259     HC       2
          *

  260     KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  261     RD    3100  0.0710     .07          TRAP       6       3
          *

  262     KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
  263     PH       1            0.47   0.85   1.41   1.61   1.76   2.08   2.78   3.49
  264     BA  0.1056
  265     LS       0      84
  266     UD    0.24
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  267     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
  268     HC       2
          *

  269     KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
  270     PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  271     BA  0.2445
  272     LS       0      76
  273     UD    0.23
          *

  274     KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
  275     RD    1100  0.0770     .07           TRAP       6       3
          *

  276     KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
  277     PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
  278     BA  0.0382
  279     LS       0      84
  280     UD    0.16
          *

  281     KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
  282     PH       1            0.50    0.91    1.52    1.72    1.87    2.19    2.93    3.66
  283     BA  0.0591
  284     LS       0      79
  285     UD    0.26
          *

  286     KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
  287     HC       3
          *

  288     KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
  289     RD    2200  0.0680     .07           TRAP       6       3
          *

  290     KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
  291     PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
  292     BA  0.0240
  293     LS       0      78
  294     UD    0.21
          *

  295     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  296     HC       3
          *

  297     KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  298     RD     500  0.0500     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

299       KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
300       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
301       BA  0.0360
302       LS       0      87
303       UD    0.10
          *

304       KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10a
305       HC       2
          *

306       KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
307       KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
308       RS       1    STOR      -1
309       SA     .34    .490    .660    .840    1.04    1.26    1.67
310       SE    5010    5012    5014    5016    5018    5020    5025
311       SQ       0    65.5    92.7   167.8   284.6   428.7   594.9   780.5  1073.4
312       SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *

313       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
314       RD     800  0.0563     .07            TRAP       6       3
          *

315       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
316       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
317       BA  0.0126
318       LS       0      87
319       UD    0.10
          *

320       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
321       HC       2
          *

322       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
323       PH       1            0.49    0.89    1.48    1.70    1.86    2.19    2.92    3.64
324       BA    .094
325       LS       0      86
326       UD    0.24
          *

327       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
328       RD     400  0.0533     .05            TRAP       6       3
          *

329       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
330       PH       1            0.48    0.87    1.45    1.66    1.82    2.15    2.87    3.60
331       BA    .046
332       LS       0      84
333       UD    0.17
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  334     KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
  335     HC       2
          *

  336     KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
  337     KM        12"RCP ie 5050
  338     RS       1    STOR      -1
  339     SA    .063    .101   1.151   1.283   1.425   1.571   1.901
  340     SE    5050    5051    5052    5054    5056    5058    5060
  341     SQ       0       1       2       3       4       5       6       7       8
  342     SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *

  343     KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
  344     RD     700  0.0500     .06            TRAP       6       3
          *

  345     KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
  346     PH       1            0.49    0.89    1.48     1.7    1.87    2.21    2.94    3.66
  347     BA    .029
  348     LS       0      78
  349     UD     .20
          *

  350     KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
  351     RD    2100     .05     .07            TRAP       5       2
          *

  352     KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
  353     PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
  354     BA  0.0877
  355     LS       0      78
  356     UD    0.22
          *

  357     KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
  358     RD    2325  0.0538    .070            TRAP       5       2
          *

  359     KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
  360     PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
  361     BA    .078
  362     LS       0      80
  363     UD    0.23
          *

  364     KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
  365     HC       4
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

366       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
367       RD     900  0.0390     .07          TRAP       6       3
          *

368       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
369       PH       1             0.47   0.85   1.41   1.61   1.76   2.08   2.78   3.49
370       BA  0.0360
371       LS       0      85
372       UD    0.14
          *

373       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
374       HC       2
          *

375       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
376       RD     950  0.0260     .07          TRAP       6       3
          *

377       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
378       PH       1             0.50   0.91   1.52   1.73   1.89   2.21   2.98   3.75
379       BA  0.0523
380       LS       0      86
381       UD    0.12
          *

382       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
383       RD    1800  0.0890     .07          TRAP       6       3
          *

384       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
385       PH       1             0.48   0.87   1.45   1.64   1.79   2.10   2.82   3.53
386       BA  0.1255
387       LS       0      86
388       UD    0.15
          *

389       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
390       HC       2
          *

391       KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
392       KM        36" RCP ie 5045
393       RS       1    STOR      -1
394       SA    .027    .149    .360    .658
395       SE    5045    5050    5055    5060
396       SQ       0      10      20      30      40      50      60      70      80      90
397       SQ     120   128.4
398       SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
399       SE  5054.8    5060
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

400       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
401       RD    2100  0.0430     .07           TRAP       6       3
          *

402       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
403       PH       1           0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
404       BA  0.0592
405       LS       0      84
406       UD    0.19
          *

407       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
408       HC       3
          *

409       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
410       HC       2
          *

411       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
412       RD    1400  0.0286     .07           TRAP       6       3
          *

413       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
414       PH       1           0.45    0.83    1.38    1.57    1.72    2.03    2.73    3.42
415       BA  0.0527
416       LS       0      83
417       UD    0.15
          *

418       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
419       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    *************
          *
          *
          *

420       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
421       PH       1           0.62    1.13    1.88    2.12    2.29    2.67    3.53    4.40
422       BA  0.6580
423       LS       0      77
424       UD    0.33
          *

425       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
426       RD    4800  0.1583     .07           TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

427       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
428       PH       1            0.57   1.04   1.74   1.96   2.13   2.49   3.24   4.00
429       BA   .3156
430       LS       0      80
431       UD    0.19
          *

432       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
433       HC       2
          *

434       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
435       RD    5500  0.1091     .07          TRAP       6       3
          *

436       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
437       PH       1            0.53   0.96   1.59   1.79   1.94   2.26   2.96   3.66
438       BA   .3359
439       LS       0      80
440       UD    0.26
          *

441       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
442       HC       2
          *

443       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
444       RD    3000  0.0933     .07          TRAP       6       3
          *

445       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
446       PH       1            0.49   0.89   1.48   1.66   1.80   2.08   2.77   3.46
447       BA  0.1528
448       LS       0      78
449       UD    0.27
          *

450       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
451       HC       2
          *

452       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
453       PH       1            0.53   0.96   1.59   1.80   1.96   2.28   3.02   3.75
454       BA  0.2380
455       LS       0      80
456       UD    0.23
          *

457       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
458       RD    3200  0.0750     .07          TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

459       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
460       PH       1            0.49    0.89    1.48    1.68    1.83    2.15    2.85    3.55
461       BA  0.0956
462       LS       0      77
463       UD    0.25
          *

464       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
465       HC       2
          *

466       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
467       HC       2
          *

468       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
469       RD    1100   0.055     .07           TRAP       6       3
          *

470       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
471       PH       1            0.47    0.85    1.41    1.59    1.73    2.01    2.69    3.37
472       BA  0.1147
473       LS       0      75
474       UD    0.27
          *

475       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
476       HC       2
          *

477       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
478       RD    1200  0.0580     .07           TRAP       6       3
          *

479       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
480       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
481       BA  0.0930
482       LS       0      79
483       UD    0.20
          *

484       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
485       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
486       BA  0.0384
487       LS       0      77
488       UD    0.18
          *

489       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
490       HC       3
          *
```

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

491       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
492       KM          36"RCP ie 5085 and 8'x7' at 5106
493       RS      1   STOR     -1
494       SA    .02   0.14   0.32   0.61   1.020   1.48   2.14   2.92
495       SE   5085   5090   5095   5100   5105   5110   5115   5120
496       SQ      0   59.0   83.4  102.1  117.9  127.3  136.1  144.4  152.2  210.6
497       SQ  310.7  438.1  587.4  755.6  940.8 1039.2 1245.7
498       SE   5085   5088   5091   5094   5097   5099   5101   5103   5105   5107
499       SE   5109   5111   5113   5115   5117   5118   5120
          *

500       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
501       RD   1200    .04    .07          TRAP      6      3
          *

502       KK    C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
503       PH      1          0.45   0.83   1.38   1.55   1.67   1.94   2.60   3.26
504       BA    .12
505       LS      0     76
506       UD    .27
          *

507       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
508       HC      2
          *

509       KK    DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
510       KM        10'x6' RCB ie 5020
511       RS      1   STOR     -1
512       SA   .270  1.030  1.430  2.340
513       SE  5020   5025   5030   5035
514       SQ     0     90    180    270    360    400    540    630    720    810
515       SQ   900    972
516       SE  5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
517       SE 5033.5 5035.00
          *

518       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
519       RD   950    .05    .07          TRAP      6      3
          *

520       KK    C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
521       PH      1          0.45   0.83   1.38   1.55   1.67   1.94   2.60   3.26
522       BA     .1
523       LS      0     78
524       UD    .30
          *

525       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
526       HC      2
          *
```

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

527       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
528       PH       1            0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
529       BA  0.1705
530       LS       0      78
531       UD    0.25
          *

532       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
533       HC       2
          *

534       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
535       RD    1500  0.0400     .07           TRAP       6       3
          *

536       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
537       PH       1            0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
538       BA  0.0809
539       LS       0      79
540       UD    0.24
          *

541       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
542       HC       2
          *

543       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
544       HC       2
          *

545       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
546       RD    3200  0.0500     .07           TRAP       6       2
          *

547       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
548       PH       1            0.45    0.83    1.38    1.56    1.70    1.99    2.69    3.40
549       BA  0.2191
550       LS       0      78
551       UD    0.24
          *

552       KK  MOGUL COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
553       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
554       HC       2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    **************
          *
          *
```

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

555       KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
556       PH       1            0.47   0.85   1.41   1.60   1.74   2.03   2.75   3.46
557       BA   .0726
558       LS       0      82
559       UD     .13
          *

560       KK    DB13 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
561       KM          10" RCP ie 5066
562       RS       1    STOR      -1
563       SA    .238    .367    .519   .703   .919  1.184
564       SE    5066    5068    5070   5072   5074   5075
565       SQ       0     1.0     2.0    3.0    4.0    5.0    6.0    7.0    8.0    9.0
566       SQ    10.0
567       SE  5066.0  5066.6  5067.1 5067.7 5068.6 5069.9 5071.4 5074.0 5075.02 5075.03
568       SE  5075.1
          *

569       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
570       RD    2700     .11     .07          TRAP     10      4
          *

571       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
572       PH       1            0.47   0.85   1.41   1.60   1.74   2.03   2.75   3.46
573       BA     .11
574       LS       0      79
575       UD     .20
          *

576       KK      F1 Combine Hydrographs at F1
577       HC       2
          *

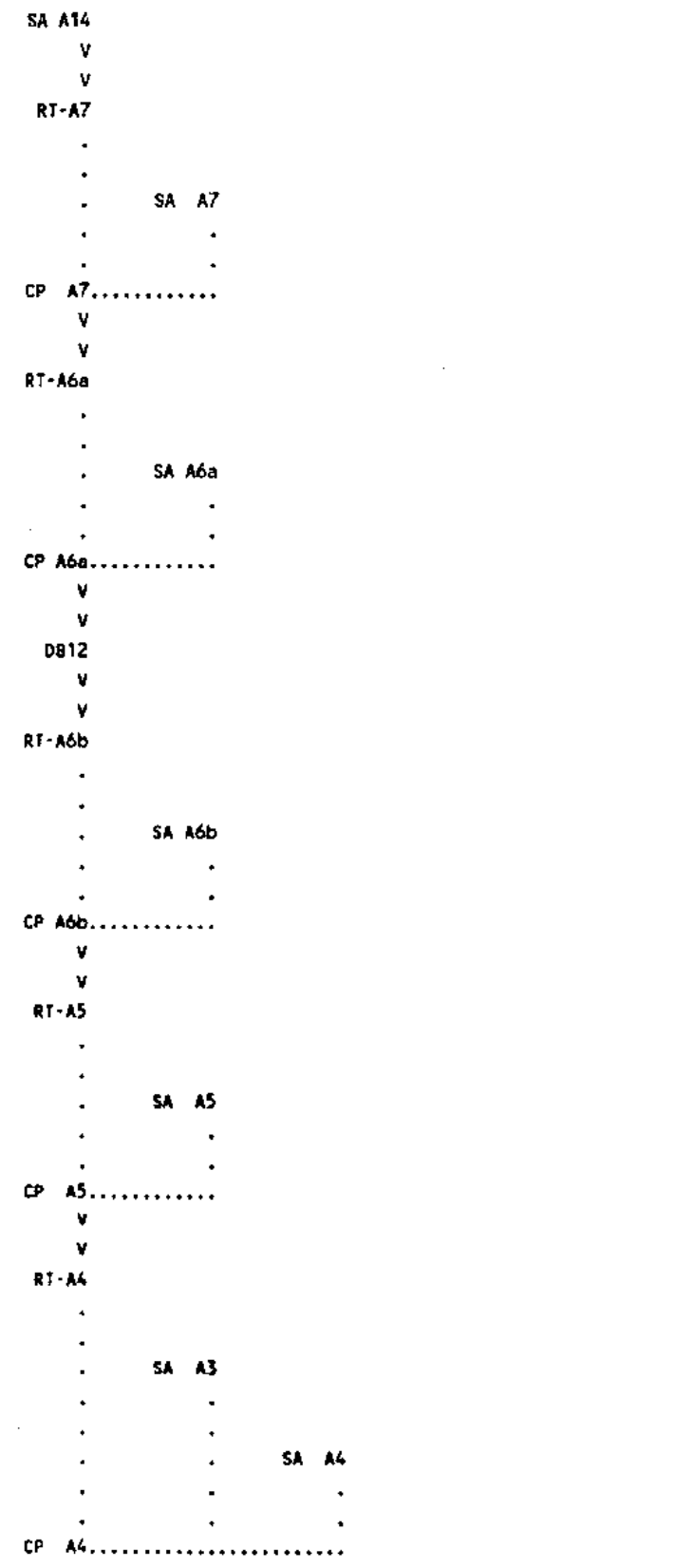
578       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
579       PH       1            0.48   0.87   1.45   1.64   1.78   2.08   2.80   3.53
580       BA  0.1352
581       LS       0      79
582       UD    0.25
          *

583       KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
584       KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
585       HC       2
586       ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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



```
                .
                .
90              .       SA A10
                .         .
                .         .
95              .         .       SA A15
                .         .         V
                .         .         V
100             .         .       RT-A9
                .         .         .
                .         .         .
102             .         .         .       SA  A9
                .         .         .         .
                .         .         .         .
107             .         .       CP  A9.............
                .         .         V
                .         .         V
109             .         .       DB9
                .         .         .
                .         .         .
116             .       CPA910.............
                .         V
                .         V
118             .       RT-A8
                .         .
                .         .
120             .         .       SA AB
                .         .         .
                .         .         .
125             .       CP A8a.............
                .         .
                .         .
127             .         .       SA A13
                .         .         .
                .         .         .
132             .         .         .       SA A12
                .         .         .         .
                .         .         .         .
137             .         .       CP A12.............
                .         .         V
                .         .         V
139             .         .       DB6
                .         .         V
                .         .         V
148             .         .       RT-A11
                .         .         .
                .         .         .
150             .         .         .       SA A11
                .         .         .         .
                .         .         .         .
155     CP4811.....................................
            V
            V
157     RT-A2
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159             .       SA  A2
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164     CP  A2.............
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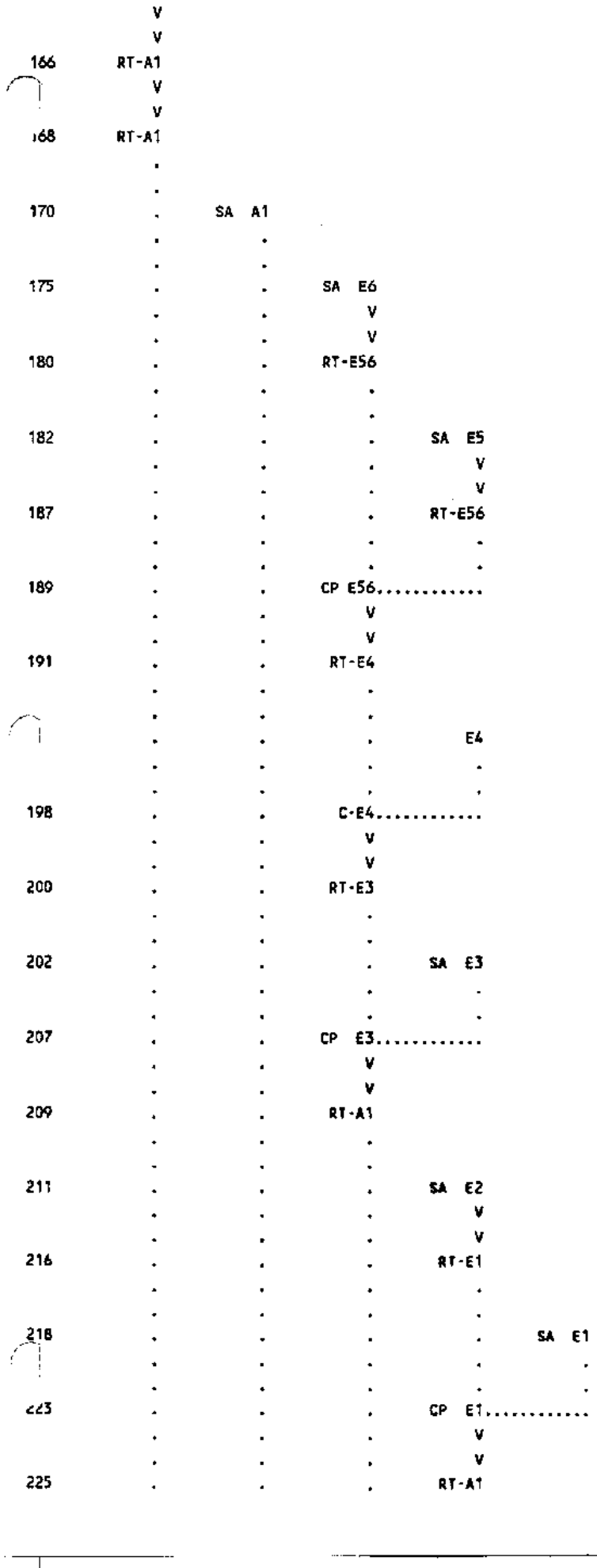
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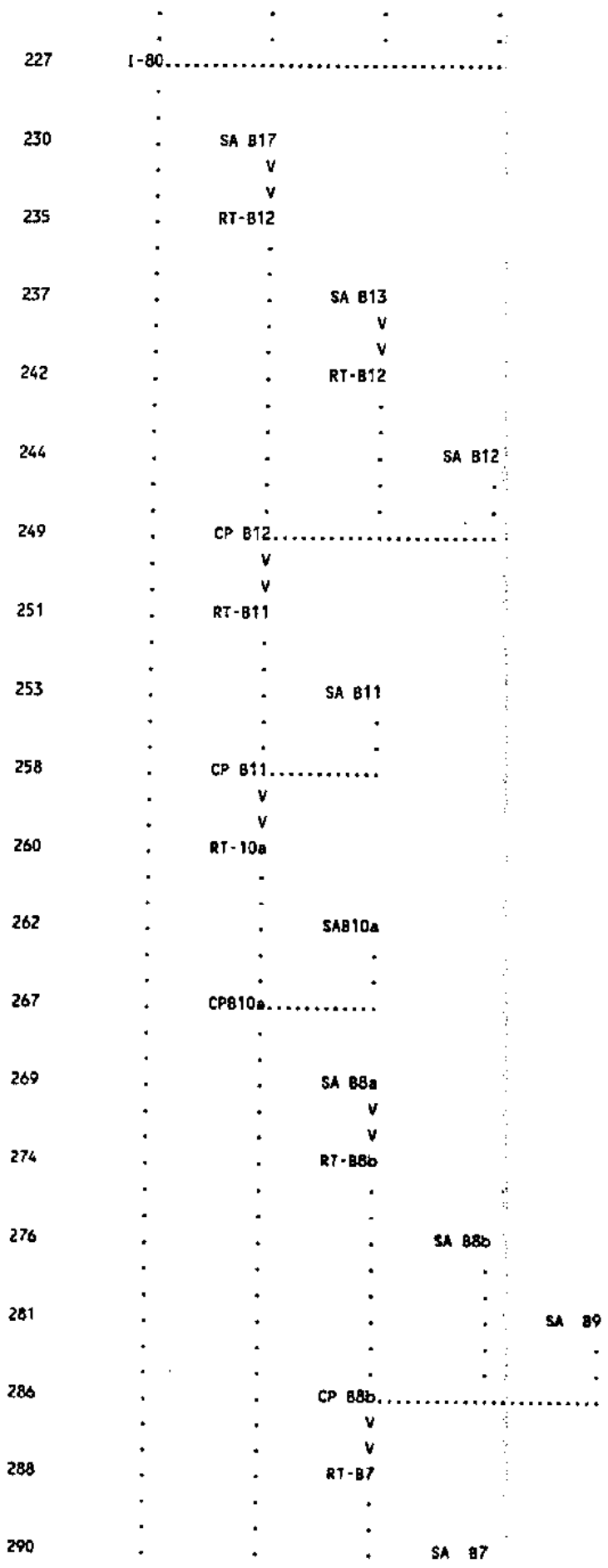
170 SA A1
175 SA E6
180 RT-E56
182 SA E5
187 RT-E56
189 CP E56
191 RT-E4
198 C-E4
200 RT-E3
202 SA E3
207 CP E3
209 RT-A1
211 SA E2
216 RT-E1
218 SA E1
223 CP E1
225 RT-A1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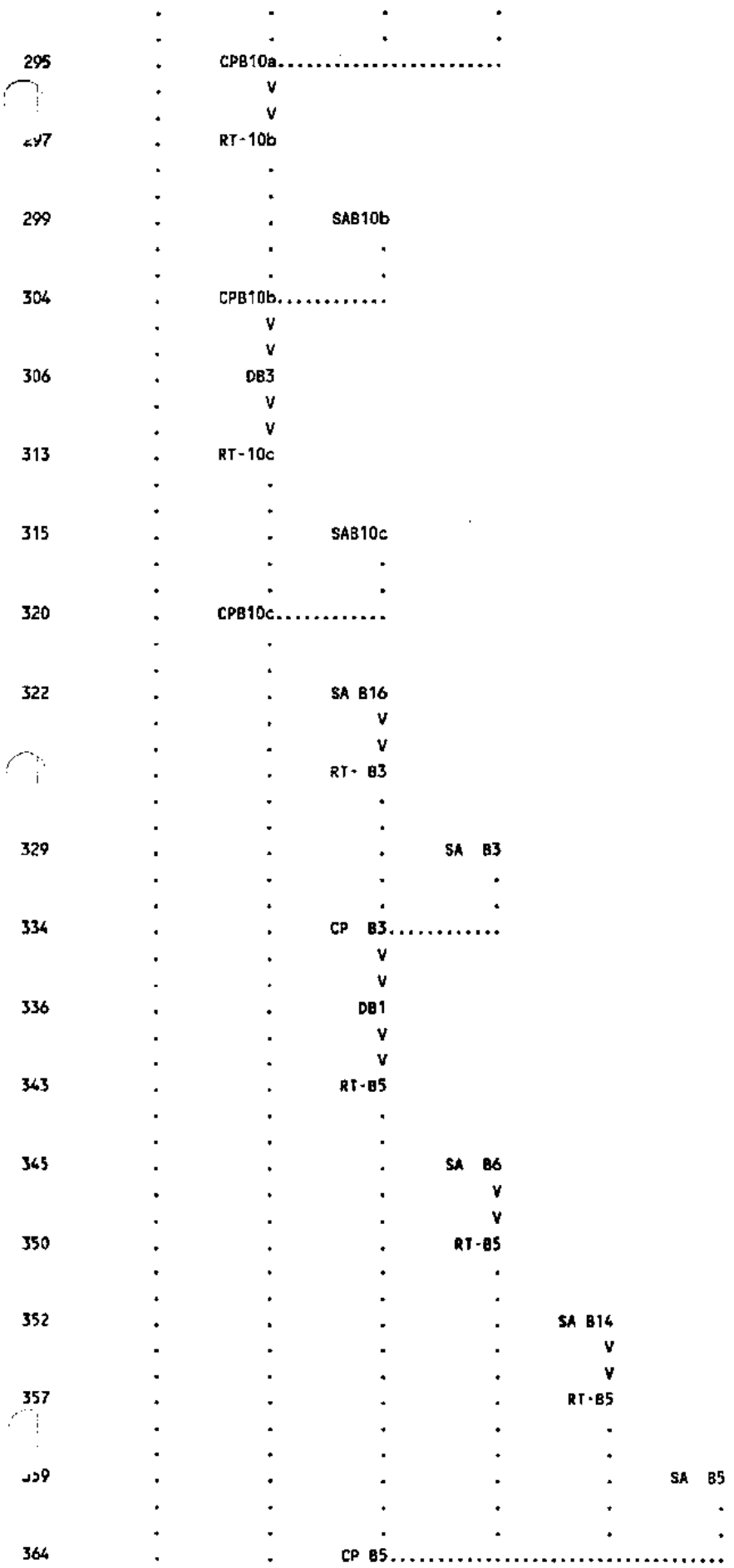
I-80
230
SA B17
235
RT-B12
237
SA B13
242
RT-B12
244
SA B12
249
CP B12
251
RT-B11
253
SA B11
258
CP B11
260
RT-10a
262
SAB10a
267
CPB10a
269
SA B8a
274
RT-B8b
276
SA B8b
281
SA B9
286
CP B8b
288
RT-B7
290
SA B7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CPB10a
V
V
297
RT-10b
299
SAB10b
304
CPB10b
V
V
306
DB3
V
V
313
RT-10c
315
SAB10c
320
CPB10c
322
SA B16
V
V
RT- B3
329
SA B3
334
CP B3
V
V
336
DB1
V
V
343
RT-B5
345
SA B6
V
V
350
RT-B5
352
SA B14
V
V
357
RT-B5
359
SA B5
364
CP B5

```
                                V
                                V
366                          RT-B4
                                .
                                .
368                                SA B4
                                .    .
                                .    .
373                          CP  B4.....
                                V
                                V
375                          RT-B2c
                                .
                                .
377                                SA B2a
                                .    V
                                .    V
382                                RT-B2b
                                .    .
                                .    .
384                                .    .    SA B2b
                                .    .      .
                                .    .      .
389                                CP B2b.....
                                .    V
                                .    V
391                                DB2
                                .    V
                                .    V
400                                RT-B2c
                                .    .
                                .    .
402                                .    .    SA B2c
                                .    .      .
                                .    .      .
407                          CP B2c.....................
                                .
                                .
409                       CPB10c.....
                             V
                             V
411                       RT-B1
                                .
                                .
413                          SA  B1
                                .
                                .
418                       CP  B1.....
                                .
                                .
420                          SA C10
                                V
                                V
425                          RT-C11
                                .
                                .
427                                SA C11
                                .    .
                                .    .
432                          CP C11.....
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```
                .       .         V
                .       .         V
434             .       .      RT-C7
                .       .         .
                .       .         .
436             .       .         .      SA  C7
                .       .         .         .
                .       .         .         .
441             .       .      CP  C7.............
                .       .         V
                .       .         V
443             .       .      RT-C5
                .       .         .
                .       .         .
445             .       .         .      SA  C5
                .       .         .         .
                .       .         .         .
450             .       .      CP  C5.............
                .       .         .
                .       .         .
452             .       .         .      SA  C8
                .       .         .         V
                .       .         .         V
457             .       .         .      RT-C6
                .       .         .         .
                .       .         .         .
459             .       .         .         .      SA  C6
                .       .         .         .         .
                .       .         .         .         .
                .       .         .      CP  C6.............
                .       .         .         .
                .       .         .         .
466             .       .      CP  C5.............
                .       .         V
                .       .         V
468             .       .      RT- C9
                .       .         .
                .       .         .
470             .       .         .      SA  C9
                .       .         .         .
                .       .         .         .
475             .       .      CP  C9.............
                .       .         V
                .       .         V
477             .       .      RT-C4b
                .       .         .
                .       .         .
479             .       .         .      SA C4a
                .       .         .         .
                .       .         .         .
484             .       .         .         .      SA C4b
                .       .         .         .         .
                .       .         .         .         .
489             .       .      CP C4b.........................
                .       .         V
                .       .         V
491             .       .       DB11
                .       .         V
                .       .         V
500             .       .      RT-C3
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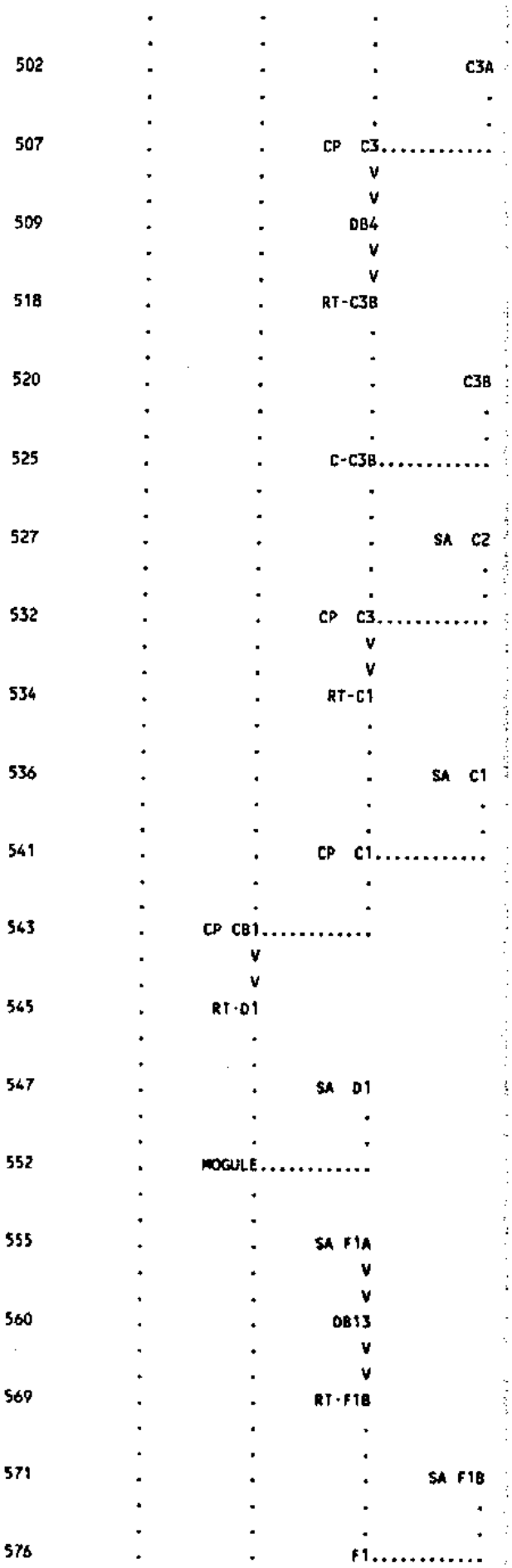
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507 CP C3
509 DB4
518 RT-C3B
520 C3B
525 C-C3B
527 SA C2
532 CP C3
534 RT-C1
536 SA C1
541 CP C1
543 CP CB1
545 RT-D1
547 SA D1
552 MODULE
555 SA F1A
560 DB13
569 RT-F1B
571 SA F1B
576 F1

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             MAY  1991                 *
*          VERSION 4.0.1E               *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:39:04   *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 551-1748               *
*                                       *
*****************************************
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```
| SOMERSETT PLANNED UNIT DEVELOPEMENT
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
|                      "PHASE I TO III" 100 YEAR MODEL
| DEVELOPED CONDITION WITH DETENTION BASINS
| Washoe County, Nevada
|
|  100-Year Analysis
|    - For offsite areas
|    - Watersheds measured from USGS 7.5 Minute Quads
|    - Rainfall entered using hypothetical storm option
|    - Rainfall data estimated using revised NOAA precipitation data
|    - Curve number estimates based on Sage-Grass, as described in TR-55
|      (SCS, 1986)  or NEH-4 (SCS, 1972)
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)
|      as modified for the Washoe County Hydrologic Criteria Manual.
|
| File: SSP3-100.DAT                          WRC NEVADA, INC.
| APRIL 1998                                  1575 DELUCCHI LN STE.207A
| Project No.   3011                          Reno, Nevada  89502
|                                            (702)332-3737,FAX 332-3740
```

```
24 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       1441  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     4  0  ENDING DATE
                NDTIME      0000  ENDING TIME
                 ICENT        19  CENTURY MARK

           COMPUTATION INTERVAL     0.05 HOURS
                TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	343.	12.40	59.	20.	7.	0.41		
ROUTED TO	RT-A7	345.	12.50	59.	20.	7.	0.41		
HYDROGRAPH AT	SA A7	293.	12.35	49.	16.	5.	0.30		
2 COMBINED AT	CP A7	612.	12.45	108.	36.	12.	0.71		
ROUTED TO	RT-A6a	610.	12.45	108.	36.	12.	0.71		
HYDROGRAPH AT	SA A6a	79.	12.15	9.	3.	1.	0.06		
2 COMBINED AT	CP A6a	639.	12.45	117.	39.	13.	0.77		
ROUTED TO	DB12	515.	12.60	114.	39.	13.	0.77	5450.40	12.60
ROUTED TO	RT-A6b	527.	12.65	114.	39.	13.	0.77		
HYDROGRAPH AT	SA A6b	72.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP A6b	540.	12.65	122.	42.	14.	0.82		
ROUTED TO	RT-A5	530.	12.70	122.	42.	14.	0.82		
HYDROGRAPH AT	SA A5	211.	12.15	23.	8.	3.	0.12		
2 COMBINED AT	CP A5	558.	12.70	144.	50.	17.	0.94		
ROUTED TO	RT-A4	567.	12.75	144.	50.	17.	0.94		
HYDROGRAPH AT	SA A3	144.	12.25	19.	6.	2.	0.13		
HYDROGRAPH AT	SA A4	13.	12.30	2.	1.	0.	0.04		
3 COMBINED AT	CP A4	599.	12.75	165.	57.	19.	1.11		
HYDROGRAPH AT	SA A10	297.	12.35	47.	16.	5.	0.29		
HYDROGRAPH AT	SA A15	173.	12.35	27.	9.	3.	0.16		
ROUTED TO	RT-A9	174.	12.50	27.	9.	3.	0.16		
HYDROGRAPH AT	SA A9	348.	12.40	59.	20.	7.	0.37		
2 COMBINED AT	CP A9	504.	12.45	86.	29.	10.	0.52		
ROUTED TO	DB9	476.	12.50	87.	29.	10.	0.52	5390.77	12.50
2 COMBINED AT	CPA910	731.	12.45	134.	45.	15.	0.81		
ROUTED TO	RT-A8	731.	12.55	134.	45.	15.	0.81		

HYDROGRAPH AT	SA A8	100.	12.40	18.	6.	2.	0.14		
2 COMBINED AT	CP A8a	813.	12.55	152.	50.	17.	0.95		
HYDROGRAPH AT	SA A13	195.	12.35	30.	10.	3.	0.20		
HYDROGRAPH AT	SA A12	61.	12.25	8.	3.	1.	0.05		
2 COMBINED AT	CP A12	254.	12.30	38.	13.	4.	0.25		
ROUTED TO	DB6	247.	12.35	38.	13.	4.	0.25	5195.98	12.35
ROUTED TO	RT-A11	247.	12.50	38.	13.	4.	0.25		
HYDROGRAPH AT	SA A11	77.	12.40	13.	4.	1.	0.12		
4 COMBINED AT	CP4811	1532.	12.55	368.	124.	41.	2.43		
ROUTED TO	RT-A2	1536.	12.65	368.	124.	41.	2.43		
HYDROGRAPH AT	SA A2	183.	12.35	29.	10.	3.	0.23		
2 COMBINED AT	CP A2	1629.	12.65	397.	134.	45.	2.66		
ROUTED TO	RT-A1	1618.	12.65	397.	134.	45.	2.66		
ROUTED TO	RT-A1	1615.	12.75	397.	134.	45.	2.66		
HYDROGRAPH AT	SA A1	71.	12.40	12.	4.	1.	0.11		
HYDROGRAPH AT	SA E6	22.	12.30	3.	1.	0.	0.04		
ROUTED TO	RT-E56	22.	12.40	3.	1.	0.	0.04		
HYDROGRAPH AT	SA E5	115.	12.30	18.	6.	2.	0.12		
ROUTED TO	RT-E56	114.	12.40	18.	6.	2.	0.12		
2 COMBINED AT	CP E56	137.	12.40	21.	7.	2.	0.17		
ROUTED TO	RT-E4	142.	12.60	21.	7.	2.	0.17		
HYDROGRAPH AT	E4	289.	12.40	53.	18.	6.	0.42		
2 COMBINED AT	C-E4	388.	12.55	74.	25.	8.	0.59		
ROUTED TO	RT-E3	387.	12.70	74.	25.	8.	0.59		
HYDROGRAPH AT	SA E3	84.	12.30	13.	4.	1.	0.12		
2 COMBINED AT	CP E3	423.	12.70	86.	29.	10.	0.71		
ROUTED TO	RT-A1	421.	12.70	86.	29.	10.	0.71		
HYDROGRAPH AT	SA E2	39.	12.50	9.	3.	1.	0.17		
ROUTED TO	RT-E1	39.	12.70	9.	3.	1.	0.17		
HYDROGRAPH AT	SA E1	77.	12.35	13.	4.	1.	0.12		

2 COMBINED AT	CP E1	90.	12.55	21.	7.	2.	0.28		
ROUTED TO	RT-A1	91.	12.60	21.	7.	2.	0.28		
4 COMBINED AT	I-80	2160.	12.70	516.	175.	58.	3.76		
HYDROGRAPH AT	SA B17	345.	12.40	60.	20.	7.	0.41		
ROUTED TO	RT-B12	344.	12.55	60.	20.	7.	0.41		
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24		
ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24		
HYDROGRAPH AT	SA B12	303.	12.30	47.	16.	5.	0.35		
3 COMBINED AT	CP B12	710.	12.50	137.	45.	15.	1.00		
ROUTED TO	RT-B11	707.	12.55	137.	45.	15.	1.00		
HYDROGRAPH AT	SA B11	66.	12.30	10.	3.	1.	0.08		
2 COMBINED AT	CP B11	745.	12.50	146.	48.	16.	1.08		
ROUTED TO	RT-10a	748.	12.60	146.	48.	16.	1.08		
HYDROGRAPH AT	SAB10a	112.	12.30	16.	5.	2.	0.11		
2 COMBINED AT	CPB10a	798.	12.55	162.	54.	18.	1.19		
HYDROGRAPH AT	SA B8a	219.	12.30	31.	10.	3.	0.24		
ROUTED TO	RT-B8b	218.	12.30	31.	10.	3.	0.24		
HYDROGRAPH AT	SA B8b	59.	12.20	7.	2.	1.	0.04		
HYDROGRAPH AT	SA B9	54.	12.30	8.	3.	1.	0.06		
3 COMBINED AT	CP B8b	317.	12.30	46.	15.	5.	0.34		
ROUTED TO	RT-B7	319.	12.35	46.	15.	5.	0.34		
HYDROGRAPH AT	SA B7	21.	12.25	3.	1.	0.	0.02		
3 COMBINED AT	CPB10a	1022.	12.55	210.	70.	23.	1.55		
ROUTED TO	RT-10b	1021.	12.55	210.	70.	23.	1.55		
HYDROGRAPH AT	SAB10b	63.	12.10	6.	2.	1.	0.04		
2 COMBINED AT	CPB10b	1032.	12.55	216.	72.	24.	1.59		
ROUTED TO	OB3	914.	12.70	214.	72.	24.	1.59	5024.91	12.70
ROUTED TO	RT-10c	913.	12.70	214.	72.	24.	1.59		
HYDROGRAPH AT	SAB10c	22.	12.10	2.	1.	0.	0.01		
2 COMBINED AT	CPB10c	915.	12.70	216.	73.	24.	1.60		

HYDROGRAPH AT	SA B16	115.	12.30	16.	6.	2.	0.09		
ROUTED TO	RT- B3	115.	12.30	16.	6.	2.	0.09		
HYDROGRAPH AT	SA B3	61.	12.20	7.	3.	1.	0.05		
2 COMBINED AT	CP B3	170.	12.25	24.	8.	3.	0.14		
ROUTED TO	DB1	6.	18.50	6.	5.	3.	0.14	5058.71	18.60
ROUTED TO	RT-B5	6.	18.45	6.	5.	3.	0.14		
HYDROGRAPH AT	SA B6	28.	12.25	4.	1.	0.	0.03		
ROUTED TO	RT-B5	28.	12.35	4.	1.	0.	0.03		
HYDROGRAPH AT	SA B14	85.	12.25	12.	4.	1.	0.09		
ROUTED TO	RT-B5	85.	12.35	12.	4.	1.	0.09		
HYDROGRAPH AT	SA B5	75.	12.25	11.	4.	1.	0.08		
4 COMBINED AT	CP B5	187.	12.35	32.	14.	6.	0.33		
ROUTED TO	RT-B4	186.	12.35	32.	14.	6.	0.33		
HYDROGRAPH AT	SA B4	51.	12.15	6.	2.	1.	0.04		
2 COMBINED AT	CP B4	213.	12.35	38.	16.	6.	0.37		
ROUTED TO	RT-B2c	212.	12.40	38.	16.	6.	0.37		
HYDROGRAPH AT	SA B2a	93.	12.15	9.	3.	1.	0.05		
ROUTED TO	RT-B2b	94.	12.20	9.	3.	1.	0.05		
HYDROGRAPH AT	SA B2b	186.	12.20	21.	7.	2.	0.13		
2 COMBINED AT	CP B2b	280.	12.20	30.	10.	3.	0.18		
ROUTED TO	DB2	126.	12.40	30.	10.	3.	0.18	5058.54	12.40
ROUTED TO	RT-B2c	128.	12.45	30.	10.	3.	0.18		
HYDROGRAPH AT	SA B2c	70.	12.20	9.	3.	1.	0.06		
3 COMBINED AT	CP B2c	388.	12.35	77.	29.	11.	0.61		
2 COMBINED AT	CPB10c	1169.	12.65	292.	102.	35.	2.21		
ROUTED TO	RT-B1	1167.	12.70	292.	102.	35.	2.21		
HYDROGRAPH AT	SA B1	65.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP B1	1178.	12.70	299.	104.	36.	2.26		
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66		
ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66		

HYDROGRAPH AT	SA C11	423.	12.25	53.	17.	6.	0.32		
2 COMBINED AT	CP C11	934.	12.40	166.	55.	18.	0.97		
ROUTED TO	RT-C7	937.	12.45	166.	55.	18.	0.97		
HYDROGRAPH AT	SA C7	335.	12.30	49.	16.	5.	0.34		
2 COMBINED AT	CP C7	1202.	12.45	215.	71.	24.	1.31		
ROUTED TO	RT-C5	1202.	12.50	215.	71.	24.	1.31		
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15		
2 COMBINED AT	CP C5	1301.	12.45	233.	77.	26.	1.46		
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24		
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24		
HYDROGRAPH AT	SA C6	77.	12.30	11.	4.	1.	0.10		
2 COMBINED AT	CP C6	333.	12.35	47.	16.	5.	0.33		
2 COMBINED AT	CP C5	1590.	12.45	280.	92.	31.	1.80		
ROUTED TO	RT- C9	1590.	12.45	280.	92.	31.	1.80		
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11		
2 COMBINED AT	CP C9	1650.	12.45	292.	96.	32.	1.91		
ROUTED TO	RT-C4b	1637.	12.45	292.	96.	32.	1.91		
HYDROGRAPH AT	SA C4a	85.	12.25	11.	4.	1.	0.09		
HYDROGRAPH AT	SA C4b	33.	12.20	4.	1.	0.	0.04		
3 COMBINED AT	CP C4b	1704.	12.45	307.	101.	34.	2.04		
ROUTED TO	D811	1187.	12.75	302.	101.	34.	2.04	5119.44	12.75
ROUTED TO	RT-C3	1183.	12.75	302.	101.	34.	2.04		
HYDROGRAPH AT	C3A	74.	12.35	12.	4.	1.	0.12		
2 COMBINED AT	CP C3	1210.	12.75	313.	105.	35.	2.16		
ROUTED TO	D84	972.	13.05	313.	105.	35.	2.16	5034.99	13.05
ROUTED TO	RT-C3B	972.	13.10	313.	105.	35.	2.16		
HYDROGRAPH AT	C3B	66.	12.35	11.	4.	1.	0.10		
2 COMBINED AT	C-C3B	982.	13.10	323.	109.	36.	2.26		
HYDROGRAPH AT	SA C2	118.	12.30	17.	6.	2.	0.17		
2 COMBINED AT	CP C3	997.	13.05	340.	115.	38.	2.43		

ROUTED TO	RT-C1	997.	13.10	340.	115.	38.	2.43		
HYDROGRAPH AT	SA C1	62.	12.30	9.	3.	1.	0.08		
2 COMBINED AT	CP C1	1004.	13.10	348.	118.	39.	2.51		
2 COMBINED AT	CP CB1	2052.	12.75	647.	222.	75.	4.77		
ROUTED TO	RT-D1	2052.	12.80	647.	222.	75.	4.77		
HYDROGRAPH AT	SA D1	169.	12.30	25.	8.	3.	0.22		
2 COMBINED AT	MOGULE	2094.	12.80	671.	230.	78.	4.99		
HYDROGRAPH AT	SA F1A	94.	12.15	10.	3.	1.	0.07		
ROUTED TO	DB13	6.	12.90	6.	3.	1.	0.07	5072.48	12.95
ROUTED TO	RT-F1B	6.	13.05	6.	3.	1.	0.07		
HYDROGRAPH AT	SA F1B	102.	12.25	14.	5.	2.	0.11		
2 COMBINED AT	F1	106.	12.25	19.	8.	3.	0.18		
HYDROGRAPH AT	SA F2	117.	12.30	17.	6.	2.	0.14		
2 COMBINED AT	MOGULW	219.	12.25	37.	14.	5.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	345.18	750.00	1.78	3.00	345.18	750.00	1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3890E+02 EXCESS=0.0000E+00 OUTFLOW=0.3891E+02 BASIN STORAGE=0.2877E-02 PERCENT ERROR= 0.0

RT-A6a	MANE	0.85	611.44	747.45	1.88	3.00	609.91	747.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7110E+02 EXCESS=0.0000E+00 OUTFLOW=0.7110E+02 BASIN STORAGE=0.3138E-03 PERCENT ERROR= 0.0

RT-A6b	MANE	3.00	526.73	759.00	1.88	3.00	526.73	759.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7698E+02 EXCESS=0.0000E+00 OUTFLOW=0.7698E+02 BASIN STORAGE=0.1656E-02 PERCENT ERROR= 0.0

RT-A5	MANE	1.95	533.33	760.62	1.89	3.00	530.25	762.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8241E+02 EXCESS=0.0000E+00 OUTFLOW=0.8241E+02 BASIN STORAGE=0.8122E-03 PERCENT ERROR= 0.0

RT-A4	MANE	3.00	566.96	765.00	1.97	3.00	566.96	765.00	1.97

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9846E+02 EXCESS=0.0000E+00 OUTFLOW=0.9847E+02 BASIN STORAGE=0.2206E-02 PERCENT ERROR= 0.0

RT-A9	MANE	3.00	174.29	750.00	2.17	3.00	174.29	750.00	2.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1808E+02 EXCESS=0.0000E+00 OUTFLOW=0.1809E+02 BASIN STORAGE=0.3192E-02 PERCENT ERROR= -0.1

RT-A8	MANE	3.00	730.97	753.00	2.05	3.00	730.97	753.00	2.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8831E+02 EXCESS=0.0000E+00 OUTFLOW=0.8832E+02 BASIN STORAGE=0.3340E-02 PERCENT ERROR= 0.0

RT-A11	MANE	3.00	247.17	750.00	1.90	3.00	247.17	750.00	1.90

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2540E+02 EXCESS=0.0000E+00 OUTFLOW=0.2540E+02 BASIN STORAGE=0.2622E-02 PERCENT ERROR= 0.0

RT-A2	MANE	3.00	1536.22	759.00	1.90	3.00	1536.22	759.00	1.90

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2467E+03 EXCESS=0.0000E+00 OUTFLOW=0.2467E+03 BASIN STORAGE=0.3613E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.79	1625.45	760.78	1.88	3.00	1617.90	759.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2662E+03 EXCESS=0.0000E+00 OUTFLOW=0.2662E+03 BASIN STORAGE=0.9643E-03 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	1615.05	765.00	1.88	3.00	1615.05	765.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2662E+03 EXCESS=0.0000E+00 OUTFLOW=0.2662E+03 BASIN STORAGE=0.2552E-02 PERCENT ERROR= 0.0

RT-E56	MANE	3.00	22.28	744.00	0.95	3.00	22.28	744.00	0.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2266E+01 EXCESS=0.0000E+00 OUTFLOW=0.2267E+01 BASIN STORAGE=0.1067E-02 PERCENT ERROR= -0.1

RT-E56	MANE	3.00	114.33	744.00	1.77	3.00	114.33	744.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1173E+02 EXCESS=0.0000E+00 OUTFLOW=0.1173E+02 BASIN STORAGE=0.1736E-02 PERCENT ERROR= 0.0

RT-E4	MANE	3.00	141.68	756.00	1.56	3.00	141.68	756.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1400E+02 EXCESS=0.0000E+00 OUTFLOW=0.1401E+02 BASIN STORAGE=0.4201E-02 PERCENT ERROR= -0.1

RT-E3	MANE	3.00	386.79	762.00	1.56	3.00	386.79	762.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4928E+02 EXCESS=0.0000E+00 OUTFLOW=0.4928E+02 BASIN STORAGE=0.2757E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.13	421.35	761.88	1.53	3.00	421.11	762.00	1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5786E+02 EXCESS=0.0000E+00 OUTFLOW=0.5786E+02 BASIN STORAGE=0.5893E-03 PERCENT ERROR= 0.0

RT-E1	MANE	2.40	39.31	763.20	0.71	3.00	39.27	762.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6226E+01 EXCESS=0.0000E+00 OUTFLOW=0.6231E+01 BASIN STORAGE=0.2529E-02 PERCENT ERROR= -0.1

RT-A1	MANE	3.00	90.83	756.00	0.99	3.00	90.83	756.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1478E+02 EXCESS=0.0000E+00 OUTFLOW=0.1478E+02 BASIN STORAGE=0.1225E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	343.96	753.00	1.76	3.00	343.95	753.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3878E+02 EXCESS=0.0000E+00 OUTFLOW=0.3877E+02 BASIN STORAGE=0.4304E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0

RT-B11	MANE	2.64	707.00	752.94	1.67	3.00	706.59	753.00	1.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8943E+02 EXCESS=0.0000E+00 OUTFLOW=0.8943E+02 BASIN STORAGE=0.1231E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	747.58	756.00	1.66	3.00	747.58	756.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9568E+02 EXCESS=0.0000E+00 OUTFLOW=0.9568E+02 BASIN STORAGE=0.1953E-02 PERCENT ERROR= 0.0

RT-88b	MANE	2.21	218.68	739.04	1.56	3.00	218.33	738.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2039E+02 EXCESS=0.0000E+00 OUTFLOW=0.2039E+02 BASIN STORAGE=0.7472E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	318.62	741.00	1.65	3.00	318.62	741.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3014E+02 EXCESS=0.0000E+00 OUTFLOW=0.3014E+02 BASIN STORAGE=0.1686E-02 PERCENT ERROR= 0.0

RT-10b	MANE	0.77	1021.31	753.12	1.68	3.00	1021.13	753.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1386E+03 EXCESS=0.0000E+00 OUTFLOW=0.1386E+03 BASIN STORAGE=0.3239E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.21	913.72	761.50	1.69	3.00	912.74	762.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1428E+03 BASIN STORAGE=0.5010E-03 PERCENT ERROR= 0.0

RT- 83	MANE	0.86	115.38	737.15	2.22	3.00	115.26	738.00	2.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1114E+02 EXCESS=0.0000E+00 OUTFLOW=0.1114E+02 BASIN STORAGE=0.1838E-03 PERCENT ERROR= 0.0

RT-85	MANE	3.00	5.94	1122.00	2.16	3.00	5.94	1122.00	2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1610E+02 EXCESS=0.0000E+00 OUTFLOW=0.1610E+02 BASIN STORAGE=0.3742E-03 PERCENT ERROR= 0.0

RT-85	MANE	3.00	28.43	741.00	1.62	3.00	28.43	741.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT- C9	MANE	1.44	1591.05	746.83	1.91	3.00	1589.84	747.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1834E+03 EXCESS=0.0000E+00 OUTFLOW=0.1834E+03 BASIN STORAGE=0.7932E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	1.53	1641.62	748.28	1.87	3.00	1637.38	747.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1908E+03 EXCESS=0.0000E+00 OUTFLOW=0.1908E+03 BASIN STORAGE=0.7260E-03 PERCENT ERROR= 0.0

RT-C3	MANE	1.91	1184.58	767.36	1.85	3.00	1182.97	765.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2010E+03 EXCESS=0.0000E+00 OUTFLOW=0.2010E+03 BASIN STORAGE=0.8256E-03 PERCENT ERROR= 0.0

RT-C3B	MANE	1.48	971.63	786.05	1.81	3.00	971.61	786.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2087E+03 EXCESS=0.0000E+00 OUTFLOW=0.2087E+03 BASIN STORAGE=0.5700E-03 PERCENT ERROR= 0.0

RT-C1	MANE	2.51	996.58	785.96	1.75	3.00	996.55	786.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2273E+03 EXCESS=0.0000E+00 OUTFLOW=0.2273E+03 BASIN STORAGE=0.1241E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	2052.46	768.00	1.76	3.00	2052.46	768.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4469E+03 EXCESS=0.0000E+00 OUTFLOW=0.4469E+03 BASIN STORAGE=0.2006E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	6.43	789.00	1.75	3.00	6.43	789.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6774E+01 EXCESS=0.0000E+00 OUTFLOW=0.6774E+01 BASIN STORAGE=0.1469E-02 PERCENT ERROR= 0.0

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

APPENDIX F - PROJECT PHASING ANALYSIS

HEC-1 Output
5-Year Proposed Condition Analysis
Phase I to IV Improvements Only

WRC NEVADA INC.

April 17, 1998

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*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
* RUN DATE  05/06/98  TIME  14:39:46    *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX  XXXXX          XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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

          *DIAGRAM
    1     ID   ==========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                    |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                               |
    4     ID   |                        "PHASE I TO IV" 5 YEAR MODEL                    |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                              |
    6     ID   | Washoe County, Nevada                                                  |
    7     ID   |                                                                        |
    8     ID   |  5-Year Analysis                                                       |
    9     ID   |    - For offsite areas                                                 |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                    |
   11     ID   |    - Rainfall entered using hypothetical storm option                  |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data     |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55 |
   14     ID   |       (SCS, 1986)  or NEH-4 (SCS, 1972)                                |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.     |
   17     ID   |                                                                        |
   18     ID   | File: SSP4-005.DAT                          WRC NEVADA, INC.           |
   19     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A  |
   20     ID   | Project No.   3011                          Reno, Nevada  89502        |
   21     ID   |                                             (702)332-3737,FAX 332-3740 |
   22     ID   ==========================================================================
   23     IT       3       0       0    1441
   24     IO       5       0       0
          *
          *
          * *********   WATERSHED SUBAREA A   *************
          *
          *

   25     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   26     PH       1            0.22    0.41    0.68    0.92    1.11    1.50    2.00    2.51
   27     BA  0.4094
   28     LS       0      73
   29     UD    0.32
          *

   30     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   31     RD    5700    0.14    0.07            TRAP       6       3
          *

   32     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   33     PH       1            0.21    0.38    0.63    0.87    1.05    1.43    1.89    2.34
   34     BA  0.3002
   35     LS       0      79
   36     UD    0.31
          *

   37     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   38     HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 39       KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
 40       RD     700   0.140    0.07           TRAP       6       3
          *

 41       KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
 42       PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
 43       BA  0.0583
 44       LS       0      78
 45       UD    0.14
          *

 46       KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
 47       HC       2
          *

 48       KK    DB12 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 12
 49       KM         24" RCP to 5425
 50       KM         4'x4'RCB at 5439
 51       RS       1    STOR      -1
 52       SA    .039    .122    .276    .531    .840   1.162
 53       SE    5425    5430    5435    5440    5445    5450
 54       SQ       0    21.4    30.3    37.1    42.8    47.8    52.4    56.6    87.7   141.0
 55       SQ   208.7   288.2   317.7   598.6
 56       SE    5425    5427    5429    5431    5433    5435    5437    5439    5441    5443
 57       SE    5445    5447    5449    5451
          *

 58       KK  RT-A6b ROUTE HDROGRAPH TO OUTLET OF AREA A6b
 59       RD    2400   0.069    0.07           TRAP       6       3
          *

 60       KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
 61       PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
 62       BA  0.0508
 63       LS       0      81
 64       UD    0.15
          *

 65       KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
 66       HC       2
          *

 67       KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
 68       RD    1100   0.055    0.07           TRAP       6       3
          *

 69       KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
 70       PH       1            0.19    0.34    0.57    0.79    0.95    1.30    1.74    2.18
 71       BA  0.1291
 72       LS       0      87
 73       UD    0.18
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  74      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  75      HC       2
          *

  76      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  77      RD    2900   0.055     .07          TRAP       6       3
          *

  78      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  79      PH       1             0.18   0.33   0.56   0.76   0.92   1.25   1.68   2.11
  80      BA  0.1329
  81      LS       0      80
  82      UD    0.19
          *

  83      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  84      PH       1             0.19   0.34   0.57   0.78   0.94   1.27   1.72   2.16
  85      BA  0.0405
  86      LS       0      66
  87      UD    0.20
          *

  88      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  89      HC       3
          *

  90      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  91      PH       1             0.22   0.39   0.65   0.89   1.06   1.43   1.90   2.37
  92      BA  0.2819
  93      LS       0      79
  94      UD    0.30
          *

  95      KK    DB10 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 10
  96      KM         24"RCP ie 5375
  97      RS       1    STOR      -1
  98      SA     .04     .11     .26     .294    .396    .508    .628    .754   1.23
  99      SE    5375    5380    5385    5390    5392    5394    5396    5398   5400
 100      SQ       0    12.0    24.0    36.0    48.0    60.0    72.0
 101      SE    5375 5376.75 5378.47 5381.39 5385.47 5391.99 5406.13
          *

 102      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
 103      PH       1             0.22   0.41   0.68   0.92   1.10   1.48   2.00   2.51
 104      BA  0.1563
 105      LS       0      78
 106      UD    0.29
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

107       KK  RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
108       RD   6800  0.165    .08          TRAP      6      3
          *

109       KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
110       PH      1          0.22   0.39   0.65   0.89   1.07   1.44   1.91   2.38
111       BA 0.3636
112       LS      0     78
113       UD   0.33
          *

114       KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
115       HC      2
          *

116       KK    DB9 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 9
117       KM        2-60"RCP ie 5382
118       RS      1   STOR     -1
119       SA  0.168  0.213  0.262  0.314
120       SE   5384   5386   5388   5390
121       SQ   0.00     60    120    180    240    300    360    420    480    524
122       SE   5382 5383.63 5384.76 5385.64 5386.46 5387.32 5388.31 5389.48 5390.86 5392.00
          *

123       KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
124       HC      2
          *

125       KK  RT-A8A ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8A
126       RD   1500  0.060    .07          TRAP      6      3
          *

127       KK  SA A8A GENERATE HYDOGRAPH FOR SUB-AREA A8A
128       PH      1          0.20   0.36   0.60   0.82   0.98   1.33   1.78   2.23
129       BA 0.0548
130       LS      0     79
131       UD   0.19
          *

132       KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
133       HC      2
          *

134       KK  RT-A8b ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8b
135       RD   3400    .05    .07          TRAP      6      3
          *

136       KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
137       PH      1          0.21   0.38   0.64   0.86   1.03   1.38   1.85   2.32
138       BA 0.1912
139       LS            78
140       UD   0.28
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  141     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  142     PH       1            0.21    0.38    0.63    0.85    1.01    1.37    1.83    2.30
  143     BA  0.0564
  144     LS       0      78
  145     UD    0.22
          *

  146     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  147     HC       2
          *

  148     KK     D86 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 6
  149     KM           18" RCP ie 5184 and 6'X8' at 5191
  150     RS       1    STOR      -1
  151     SA   0.036   0.091   0.153   0.224   0.302   0.391   0.450
  152     SE    5186    5188    5190    5192    5194    5196    5198
  153     SQ     8.5    12.0    14.7    17.0    19.0    20.8    22.5    40.9    73.0   114.2
  154     SQ   162.6   189.2   249.1
  155     SE    5185    5186    5187    5188    5189    5190    5191    5192    5193    5194
  156     SE    5195  5195.5    5196
          *

  157     KK  RT-A8B ROUTE COMBINED HYDROGRAPH A9&10 TO OUTLET OF A8B
  158     RD    3300  0.0550    0.07            TRAP       6       3
          *

  159     KK  SA A8B GENERATE HYDROGRAPH FOR SUB AREA A8B
  160     PH       1            0.20    0.36    0.60    0.82    0.98    1.33    1.78    2.23
  161     BA  0.1428
  162     LS       0      76
  163     UD    0.21
          *

  164     KK  CP A8B COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  165     HC       3
          *

  166     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  167     PH       1            0.20    0.37    0.61    0.82    0.97    1.30    1.75    2.20
  168     BA  0.0958
  169     LS       0      74
  170     UD    0.33
          *

  171     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A11, A8
  172     HC       3
          *

  173     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  174     RD    4400  0.0386     .07            TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

175       KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
176       PH       1           0.18    0.33    0.56    0.76    0.91    1.24    1.67    2.11
177       BA  0.1974
178       LS       0      77
179       UD    0.28
          *

180       KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
181       HC       2
          *

182       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
183       RD    1500    0.07    0.07           TRAP       6       3
          *

184       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 2
185       RD    2400  0.0125   0.040           TRAP      15       3
          *

186       KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
187       PH       1           0.18    0.33    0.54    0.74    0.89    1.20    1.61    2.02
188       BA  0.1127
189       LS       0      76
190       UD    0.33
          *
          *
          * ************   WATERSHED SUBAREA E ******************
          *
          *

191       KK  SA  E6 GENERATE HYDROGRAPH FOR SUB AREA E6
192       PH       1           0.20    0.37    0.61    0.82    0.97    1.30    1.76    2.23
193       BA  0.0448
194       LS       0      65
195       UD    0.22
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIIONS ***********
          * KK   DB5 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 5
          * KM       12"RCP ie 5114
          * RS     1    STOR      -1
          * SA  .119    .172    .231    .296    .366     0.5
          * SE  5114    5116    5118    5120    5122    5124
          * SQ     0       1       2       3       4       5       6       7       8
          * SE  5114 5114.59 5114.91 5115.24 5115.68 5116.26 5117.50 5119.38 5121.55 5124.
          *

196       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
197       RD    1900  0.0658    0.07           trap       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

198       KK  SA  E5 GENERATE HYDOGRAPH FOR SUB-AREA E5
199       PH       1            0.20    0.37    0.61    0.83    0.99    1.34    1.81    2.28
200       BA   .1241
201       LS       0      77
202       UD     .27
          *

203       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
204       RD    2500   .0360     .07          TRAP       6       3
          *

205       KK  CP E56 COMBINE HYDROGRAPHS FOR E5 AND E6
206       HC       2
          *

207       KK   RT-E4 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
208       RD    4500   .0310     .07          TRAP       6       3
          *

209       KK      E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
210       PH       1            0.19    0.35    0.58    0.79    0.94    1.26    1.72    2.18
211       BA   .4231
212       LS       0      76
213       UD     .36
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ********
          * KK   DB8 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 8
          * KM       24"RCP ie 5122
          * RS     1    STOR      -1
          * SA  .085    .134    .198    .273    .356    .445    .540
          * SE  5122    5124    5126    5128    5130    5132    5134
          * SQ     0       5      10      15      20      25      30      35
          * SE  5122 5123.03 5123.63 5126.18 5124.86 5125.76 5126.87 5128.19
          *

214       KK    C-E4 COMBINE HYDROGRAPHS FROM E5 E4 AND E6
215       HC       2
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ***********
          * KK  DB14 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 14
          * KM       12"RCP ie 5060
          * RS     1    STOR      -1
          * SA  .341    .475    .631    .811   1.025   1.274    1.50
          * SE  5060    5062    5064    5066    5068    5070    5072
          * SQ     0       2       4       6       8      10      12      14
          * SE  5060 5060.88 5061.65 5062.95 5064.75 5067.38 5071.49 5071.98
          *

216       KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
217       RD    3500  0.0429    0.07          TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

218       KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
219       PH       1           0.19    0.34    0.57    0.76    0.90    1.20    1.63    2.06
220       BA  0.1191
221       LS       0      75
222       UD    0.27
          *

223       KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
224       HC       2
          *

225       KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
226       RD     500  0.0125     .04           TRAP      15       3
          *

227       KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
228       PH       1           0.19    0.34    0.57    0.77    0.92    1.24    1.68    2.12
229       BA  0.1653
230       LS       0      62
231       UD    0.38
          *

232       KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
233       RD    3200  0.0375     .07           TRAP       6       3
          *

234       KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
235       PH       1           0.18    0.33    0.56    0.75    0.89    1.20    1.62    2.04
236       BA  0.1156
237       LS       0      76
238       UD    0.31
          *

239       KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
240       HC       2
          *

241       KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
242       RD    1200  0.0125     .04           TRAP      15       3
          *

243       KK    I-80
244       KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
245       HC       4
          *
          *
          *
          *
          * *********   WATERSHED SUBAREA B    **************
          *
          *
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  246     KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
  247     PH       1            0.22   0.40   0.67   0.91   1.10   1.50   1.96   2.43
  248     BA  0.4136
  249     LS       0      74
  250     UD    0.32
          *

  251     KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
  252     RD    3900  0.0133     .07          TRAP       6       3
          *

  253     KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
  254     PH       1            0.22   0.40   0.67   0.91   1.10   1.48   1.98   2.48
  255     BA  0.2400
  256     LS       0      70
  257     UD    0.33
          *

  258     KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
  259     RD    4500  0.1510     .08          TRAP       6       3
          *

  260     KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
  261     PH       1            0.20   0.37   0.61   0.85   1.03   1.40   1.85   2.30
  262     BA  0.3484
  263     LS       0      75
  264     UD    0.26
          *

  265     KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
  266     HC       3
          *

  267     KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
  268     RD    2000  0.1000     .07          TRAP       6       3
          *

  269     KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
  270     PH       1            0.19   0.35   0.58   0.79   0.95   1.27   1.70   2.12
  271     BA  0.0777
  272     LS       0      76
  273     UD    0.24
          *

  274     KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
  275     HC       2
          *

  276     KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
  277     RD    3100  0.0710     .07          TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

278       KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
279       PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
280       BA  0.1056
281       LS       0      84
282       UD    0.24
          *

283       KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
284       HC       2
          *

285       KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
286       PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
287       BA  0.2445
288       LS       0      76
289       UD    0.23
          *

290       KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
291       RD    1100  0.0770     .07           TRAP       6       3
          *

292       KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
293       PH       1            0.20    0.36    0.60    0.81    0.97    1.30    1.74    2.18
294       BA  0.0382
295       LS       0      84
296       UD    0.16
          *

297       KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
298       PH       1            0.19    0.34    0.57    0.78    0.93    1.26    1.69    2.11
299       BA  0.0591
300       LS       0      79
301       UD    0.26
          *

302       KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
303       HC       3
          *

304       KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
305       RD    2200  0.0680     .07           TRAP       6       3
          *

306       KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
307       PH       1            0.18    0.32    0.53    0.73    0.89    1.21    1.62    2.04
308       BA  0.0240
309       LS       0      78
310       UD    0.21
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  311     KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
  312     HC       3
          *

  313     KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
  314     RD     500  0.0500     .07          TRAP       6       3
          *

  315     KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
  316     PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  317     BA  0.0360
  318     LS       0      87
  319     UD    0.10
          *

  320     KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B10b
  321     HC       2
          *

  322     KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
  323     KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
  324     RS       1    STOR      -1
  325     SA     .34    .490    .660    .840    1.04    1.26    1.67
  326     SE    5010    5012    5014    5016    5018    5020    5025
  327     SQ       0    65.5    92.7   167.8   284.6   428.7   594.9   780.5  1073.4
  328     SE    5010    5012    5014    5016    5018    5020    5022    5024    5026
          *

  329     KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
  330     RD     800  0.0563     .07          TRAP       6       3
          *

  331     KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
  332     PH       1            0.18    0.32    0.53    0.73    0.88    1.20    1.60    2.01
  333     BA  0.0126
  334     LS       0      87
  335     UD    0.10
          *

  336     KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
  337     HC       2
          *

  338     KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
  339     PH       1            0.18    0.33    0.56    0.77    0.93    1.26    1.68    2.10
  340     BA    .094
  341     LS       0      86
  342     UD    0.24
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

343       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
344       RD     400  0.0533     .05           TRAP       6       3
          *

345       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
346       PH       1           0.18    0.33    0.54    0.75    0.91    1.24    1.65    2.07
347       BA    .046
348       LS       0      84
349       UD    0.17
          *

350       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
351       HC       2
          *

352       KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
353       KM        12"RCP ie 5050
354       RS       1    STOR      -1
355       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
356       SE    5050    5051    5052    5054    5056    5058    5060
357       SQ       0       1       2       3       4       5       6       7       8
358       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *

359       KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
360       RD     700  0.0500     .06           TRAP       6       3
          *

361       KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
362       PH       1           0.18    0.33    0.56    0.77    0.93    1.27    1.69    2.11
363       BA    .029
364       LS       0      78
365       UD     .20
          *

366       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
367       RD    2100     .05     .07           TRAP       5       2
          *

368       KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
369       PH       1           0.19    0.34    0.57    0.79    0.95    1.30    1.73    2.16
370       BA  0.0877
371       LS       0      78
372       UD    0.22
          *

373       KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
374       RD    2325  0.0538    .070           TRAP       5       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

375       KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
376       PH       1            0.18   0.33   0.56   0.76   0.92   1.25   1.65   2.06
377       BA    .078
378       LS       0      80
379       UD    0.23
          *

380       KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
381       HC       4
          *

382       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
383       RD     900  0.0390     .07          TRAP       6       3
          *

384       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
385       PH       1            0.18   0.32   0.53   0.73   0.88   1.20   1.60   2.01
386       BA  0.0360
387       LS       0      85
388       UD    0.14
          *

389       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B15
390       HC       2
          *

391       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
392       RD     950  0.0260     .07          TRAP       6       3
          *

393       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
394       PH       1            0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
395       BA  0.0523
396       LS       0      86
397       UD    0.12
          *

398       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
399       RD    1800  0.0890     .07          TRAP       6       3
          *

400       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
401       PH       1            0.18   0.33   0.54   0.74   0.89   1.21   1.62   2.04
402       BA  0.1255
403       LS       0      86
404       UD    0.15
          *

405       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
406       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

407       KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
408       KM        36" RCP ie 5045
409       RS       1    STOR      -1
410       SA    .027    .149    .360    .658
411       SE    5045    5050    5055    5060
412       SQ       0      10      20      30      40      50      60      70      80      90
413       SQ     120   128.4
414       SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
415       SE  5054.8    5060
          *

416       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
417       RD    2100  0.0430     .07           TRAP       6       3
          *

418       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
419       PH       1            0.18    0.33    0.54    0.74    0.89    1.21    1.62    2.04
420       BA  0.0592
421       LS       0      84
422       UD    0.19
          *

423       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
424       HC       3
          *

425       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
426       HC       2
          *

427       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
428       RD    1400  0.0286     .07           TRAP       6       3
          *

429       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
430       PH       1            0.17    0.31    0.52    0.71    0.86    1.17    1.57    1.97
431       BA  0.0527
432       LS       0      83
433       UD    0.15
          *

434       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
435       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C    **************
          *
          *
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

436       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
437       PH       1            0.23   0.42   0.71   0.95   1.14   1.53   2.03   2.53
438       BA  0.6580
439       LS       0      77
440       UD    0.33
          *

441       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
442       RD    4800  0.1583     .07          TRAP       6      3
          *

443       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
444       PH       1            0.22   0.39   0.65   0.89   1.06   1.43   1.87   2.30
445       BA   .3156
446       LS       0      80
447       UD    0.19
          *

448       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
449       HC       2
          *

450       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
451       RD    5500  0.1091     .07          TRAP       6      3
          *

452       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
453       PH       1            0.20   0.36   0.60   0.81   0.97   1.30   1.71   2.11
454       BA   .3359
455       LS       0      80
456       UD    0.26
          *

457       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
458       HC       2
          *

459       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
460       RD    3000  0.0933     .07          TRAP       6      3
          *

461       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
462       PH       1            0.18   0.33   0.56   0.75   0.89   1.20   1.60   2.00
463       BA  0.1528
464       LS       0      78
465       UD    0.27
          *

466       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
467       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

468       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
469       PH       1            0.20    0.36    0.60    0.81    0.97    1.31    1.74    2.16
470       BA  0.2380
471       LS       0      80
472       UD    0.23
          *

473       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
474       RD    3200  0.0750     .07           TRAP       6       3
          *

475       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
476       PH       1            0.18    0.33    0.56    0.76    0.91    1.24    1.64    2.05
477       BA  0.0956
478       LS       0      77
479       UD    0.25
          *

480       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
481       HC       2
          *

482       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
483       HC       2
          *

484       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
485       RD    1100   0.055     .07           TRAP       6       3
          *

486       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
487       PH       1            0.18    0.32    0.53    0.72    0.86    1.16    1.55    1.95
488       BA  0.1147
489       LS       0      75
490       UD    0.27
          *

491       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
492       HC       2
          *

493       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
494       RD    1200  0.0580     .07           TRAP       6       3
          *

495       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
496       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
497       BA  0.0930
498       LS       0      79
499       UD    0.20
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

500       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
501       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.56    1.96
502       BA  0.0384
503       LS       0      77
504       UD    0.18
          *

505       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
506       HC       3
          *

507       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
508       KM           36"RCP ie 5085 and 8'x7' at 5106
509       RS       1    STOR      -1
510       SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
511       SE    5085    5090    5095    5100    5105    5110    5115    5120
512       SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
513       SQ   310.7   438.1   587.4   755.6   940.8  1039.2  1245.7
514       SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
515       SE    5109    5111    5113    5115    5117    5118    5120
          *

516       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
517       RD    1200     .04     .07            TRAP       6       3
          *

518       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
519       PH       1            0.17    0.31    0.52    0.70    0.83    1.12    1.50    1.88
520       BA     .12
521       LS       0      76
522       UD     .27
          *

523       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
524       HC       2
          *

525       KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
526       KM         10'x6' RCB ie 5020
527       RS       1    STOR      -1
528       SA    .270   1.030   1.430   2.340
529       SE    5020    5025    5030    5035
530       SQ       0      90     180     270     360     400     540     630     720     810
531       SQ     900     972
532       SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
533       SE  5033.5 5035.00
          *

534       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
535       RD     950     .05     .07            TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

536       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
537       PH       1           0.17   0.31   0.52   0.70   0.83   1.12   1.50   1.88
538       BA      .1
539       LS       0      78
540       UD     .30
          *

541       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
542       HC       2
          *

543       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
544       PH       1           0.17   0.30   0.50   0.67   0.80   1.07   1.45   1.84
545       BA  0.1705
546       LS       0      78
547       UD    0.25
          *

548       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
549       HC       2
          *

550       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
551       RD    1500  0.0400     .07           TRAP       6       3
          *

552       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
553       PH       1           0.17   0.30   0.50   0.69   0.83   1.13   1.53   1.92
554       BA  0.0809
555       LS       0      79
556       UD    0.24
          *

557       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
558       HC       2
          *

559       KK  CP CB1 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
560       HC       2
          *

561       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
562       RD    3200  0.0500     .07           TRAP       6       2
          *

563       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
564       PH       1           0.17   0.31   0.52   0.70   0.85   1.14   1.55   1.96
565       BA  0.2191
566       LS       0      78
567       UD    0.24
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

568       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
569       KM        MOGUL MEADOWS EAST CHANNEL DISCHARGE
570       HC      2
          *
          *
          *
          * *********   WATERSHED SUBAREA F    **************
          *
          *

571       KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
572       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
573       BA   .0726
574       LS       0      82
575       UD     .13
          *

576       KK    DB13 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
577       KM          10" RCP Ie 5066
578       RS       1    STOR      -1
579       SA    .238    .367    .519    .703    .919   1.184
580       SE    5066    5068    5070    5072    5074    5075
581       SQ       0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0     9.0
582       SQ    10.0
583       SE  5066.0  5066.6  5067.1  5067.7  5068.6  5069.9  5071.4  5074.0 5075.02 5075.03
584       SE  5075.1
          *

585       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
586       RD    2700     .11     .07          TRAP      10       4
          *

587       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
588       PH       1            0.18    0.32    0.53    0.72    0.87    1.17    1.58    2.00
589       BA     .11
590       LS       0      79
591       UD     .20
          *

592       KK      F1 Combine Hydrographs at F1
593       HC       2
          *

594       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
595       PH       1            0.18    0.33    0.54    0.74    0.89    1.20    1.62    2.04
596       BA  0.1352
597       LS       0      79
598       UD    0.25
          *
```

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

  599     KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  600     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  601     HC       2
  602     ZZ
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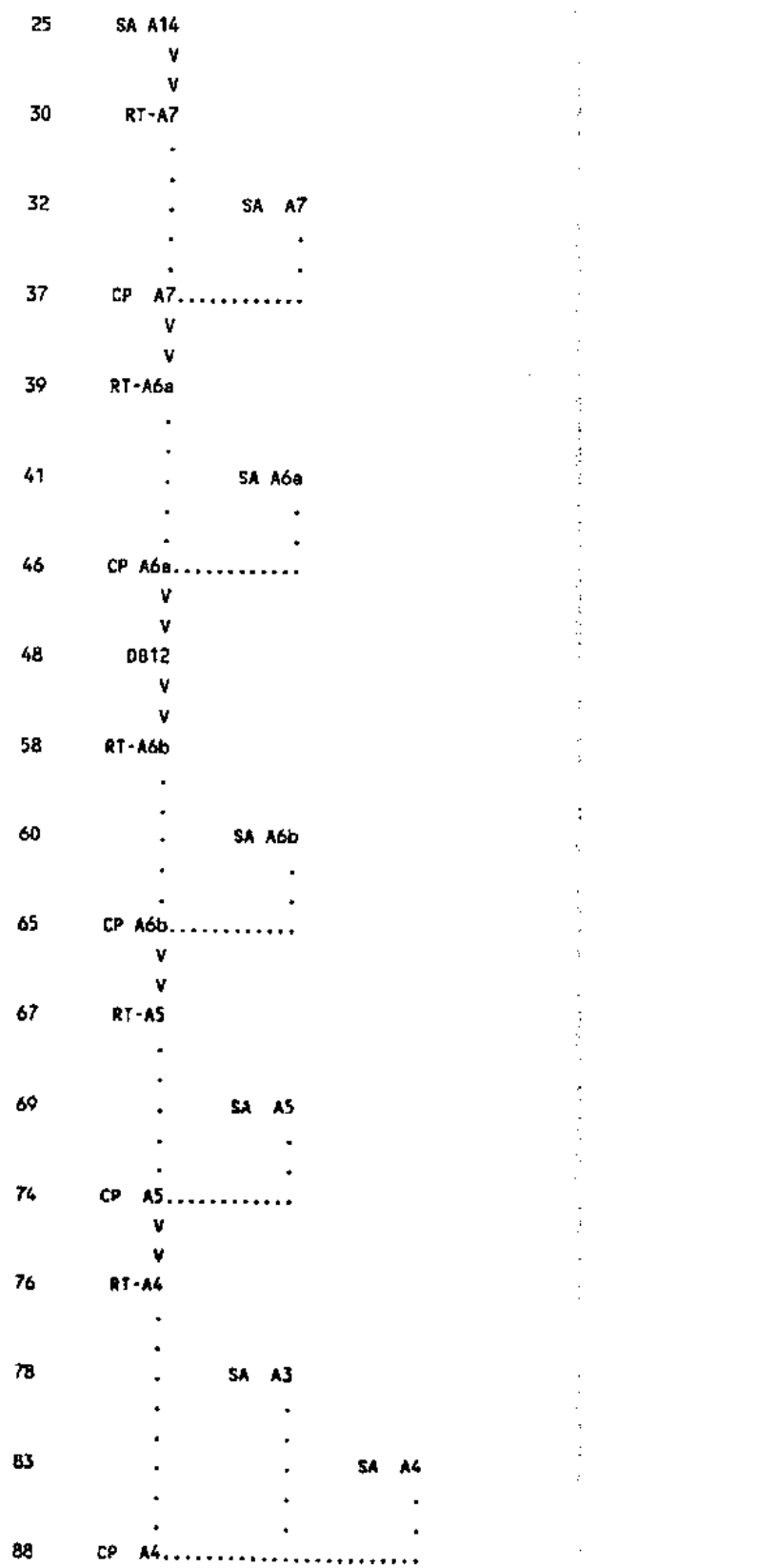
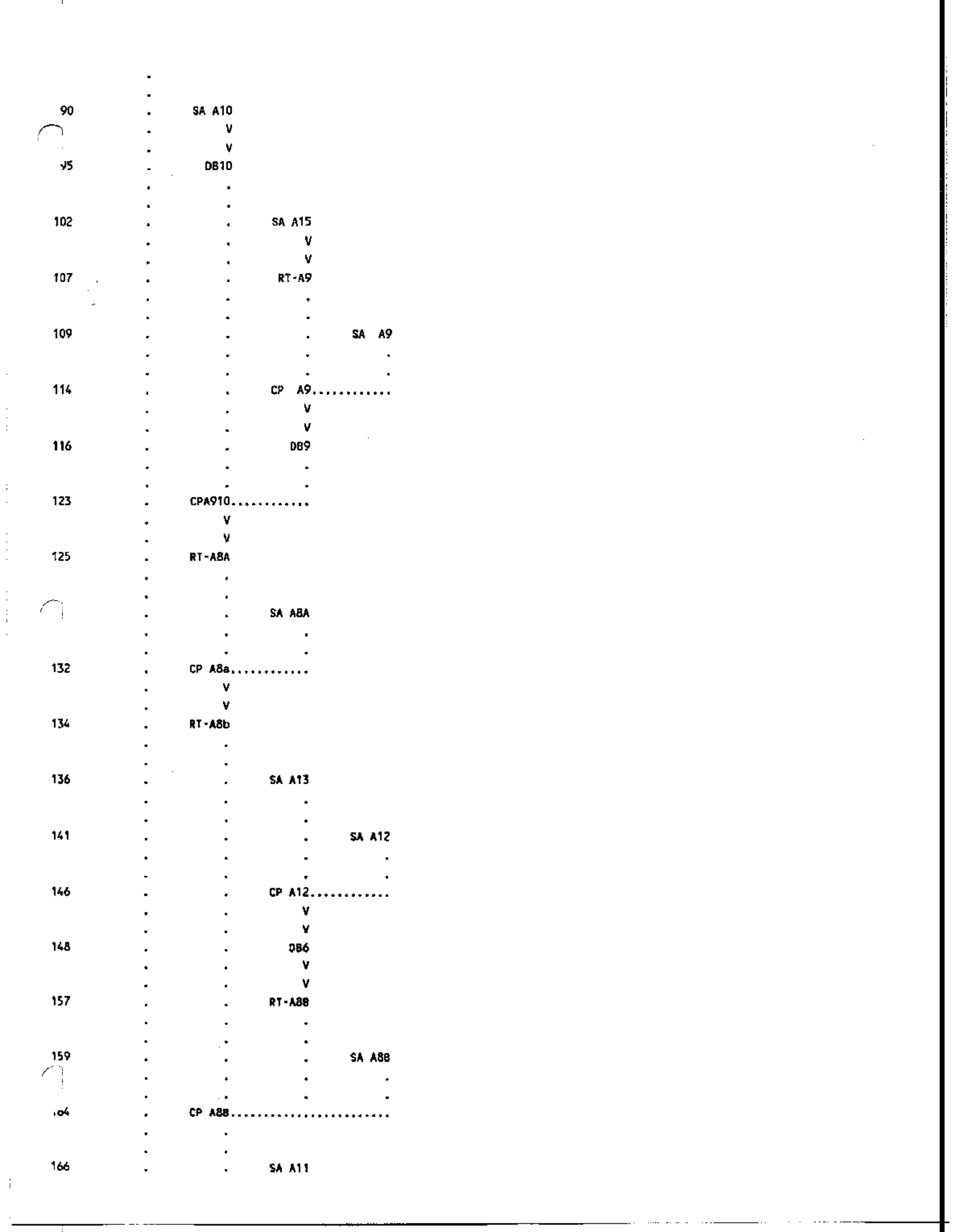
SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

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

(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW

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DB9
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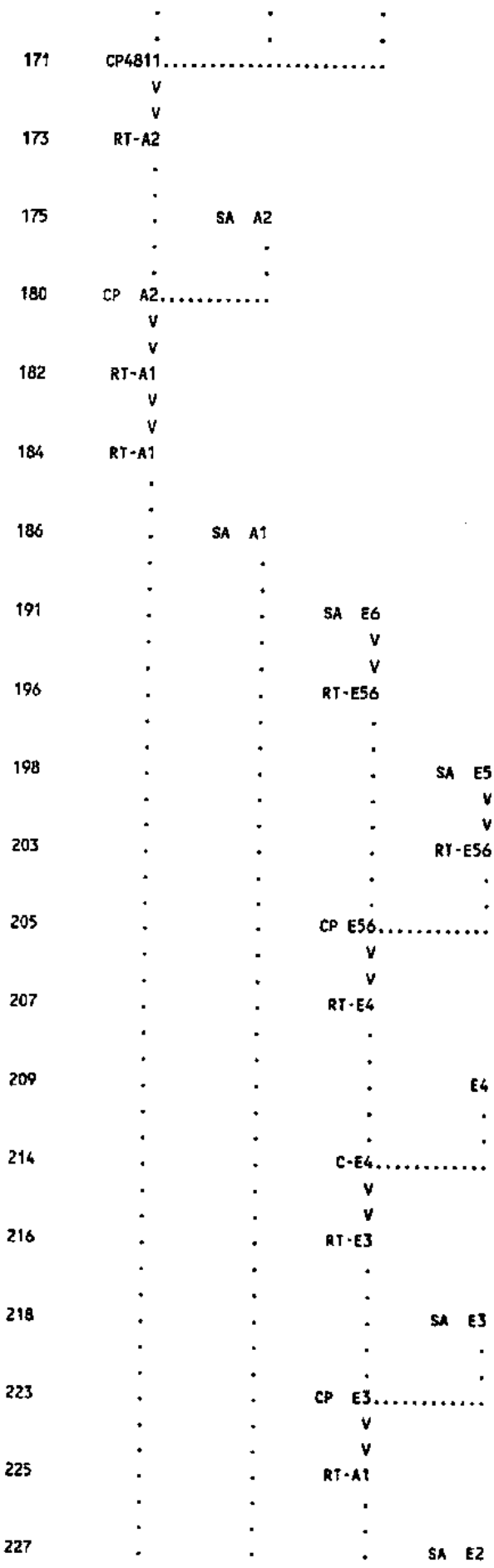
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203 RT-E56
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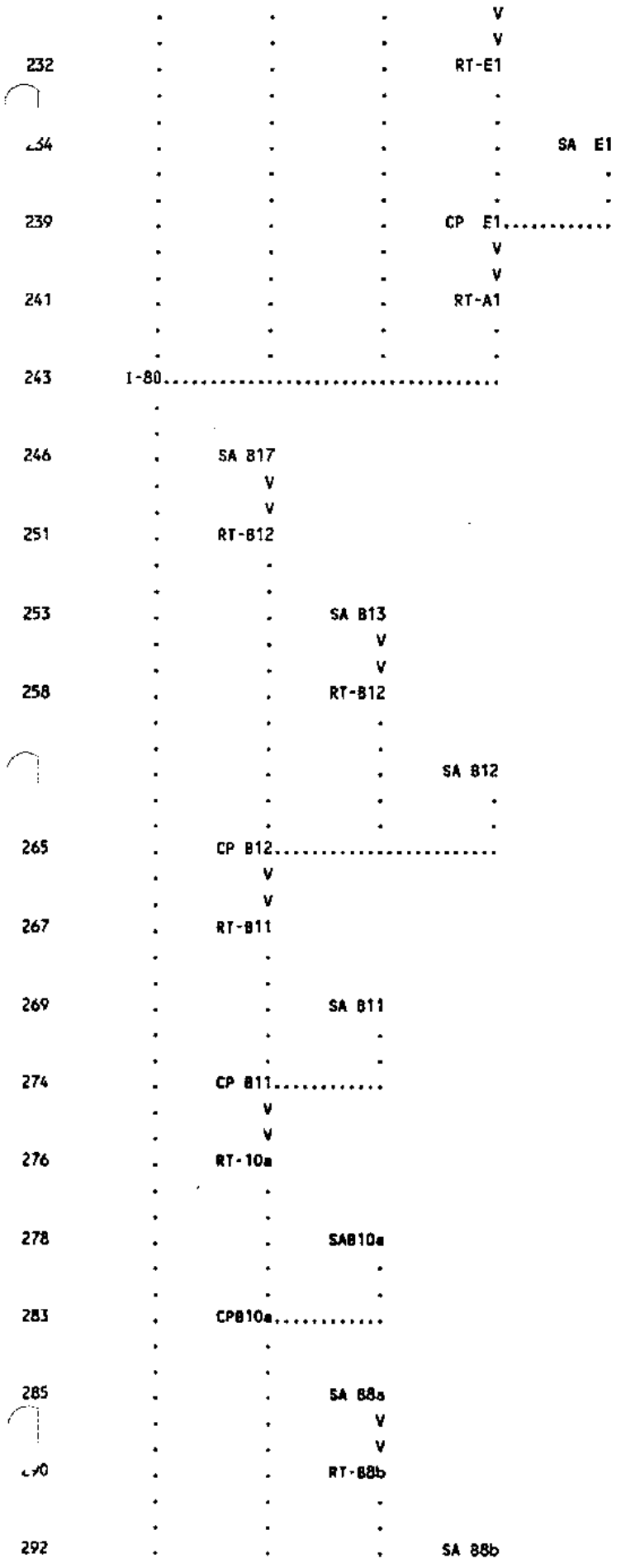
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CP E1
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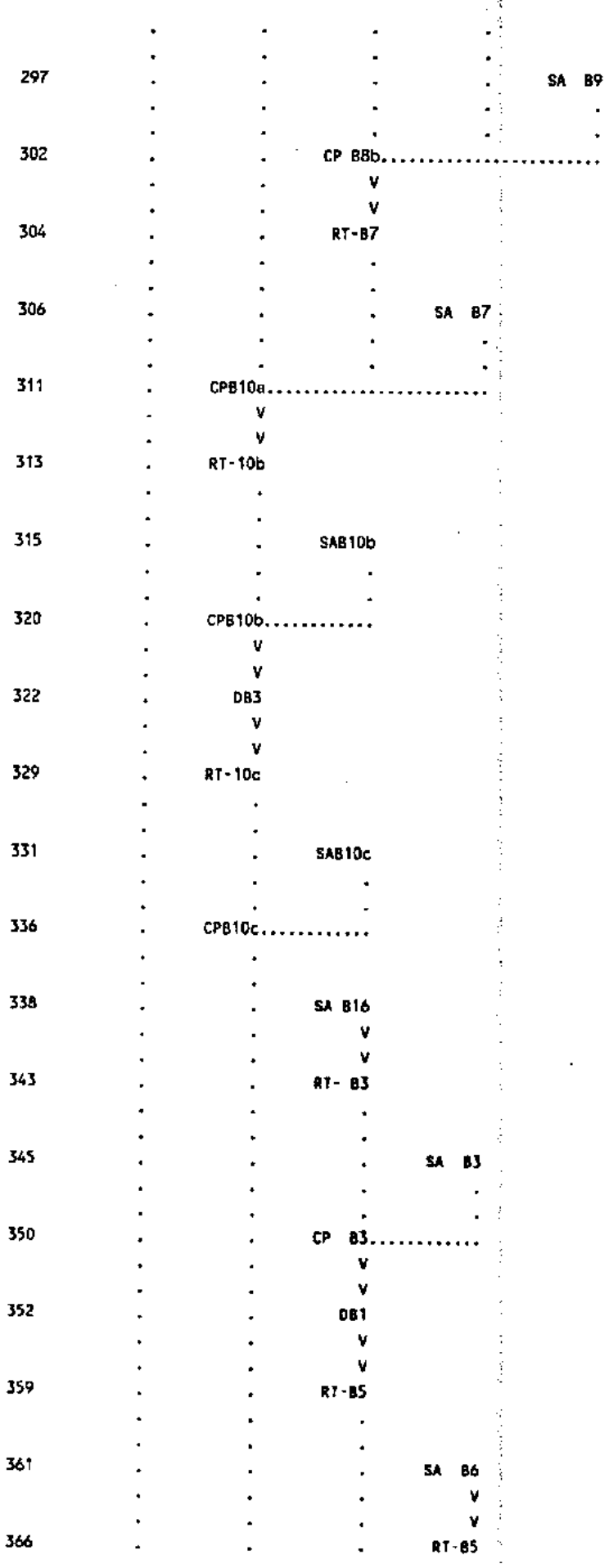
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CPB10b
322
DB3
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RT-10c
331
SAB10c
336
CPB10c
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CP B3
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DB1
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RT-B5
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SA B6
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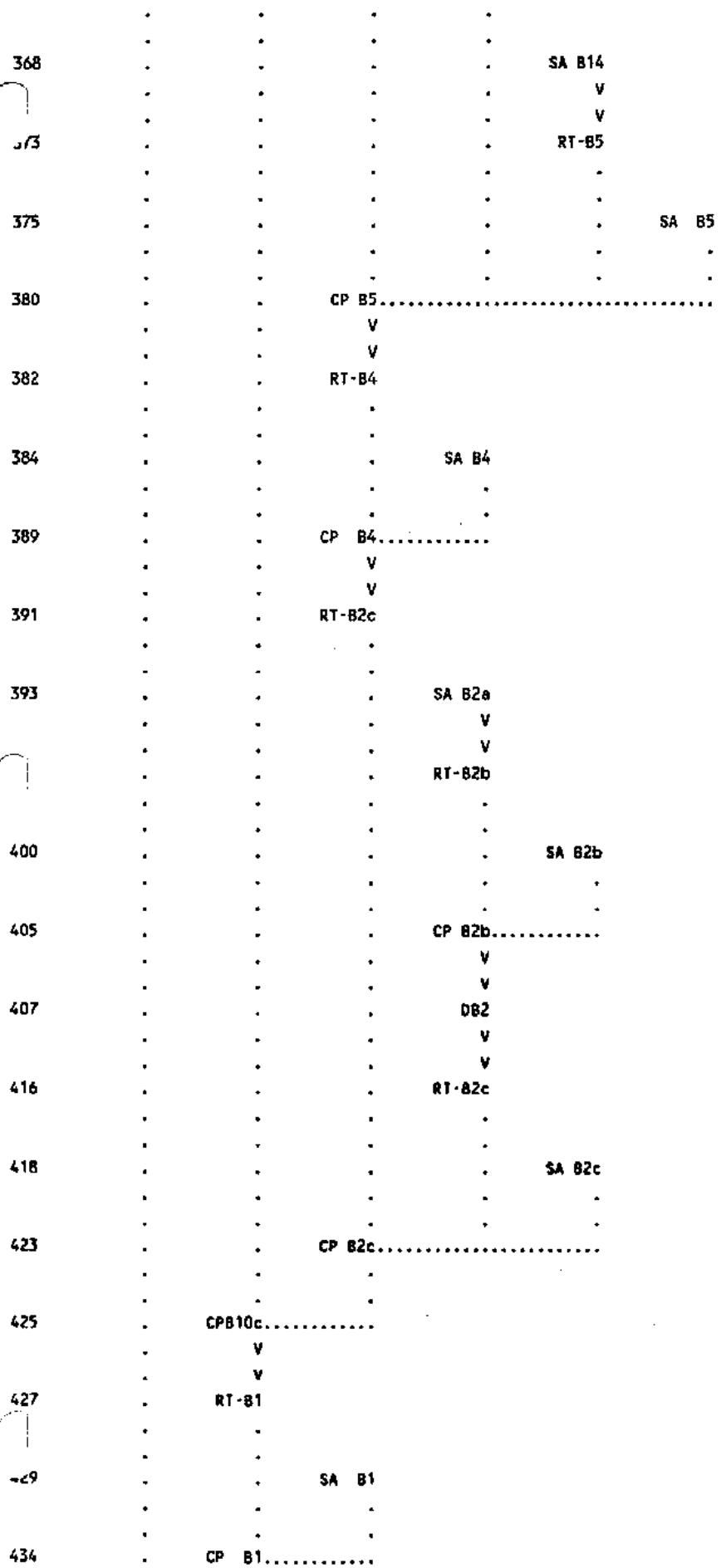
RT-B5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CP B5
RT-B4
SA B4
CP B4
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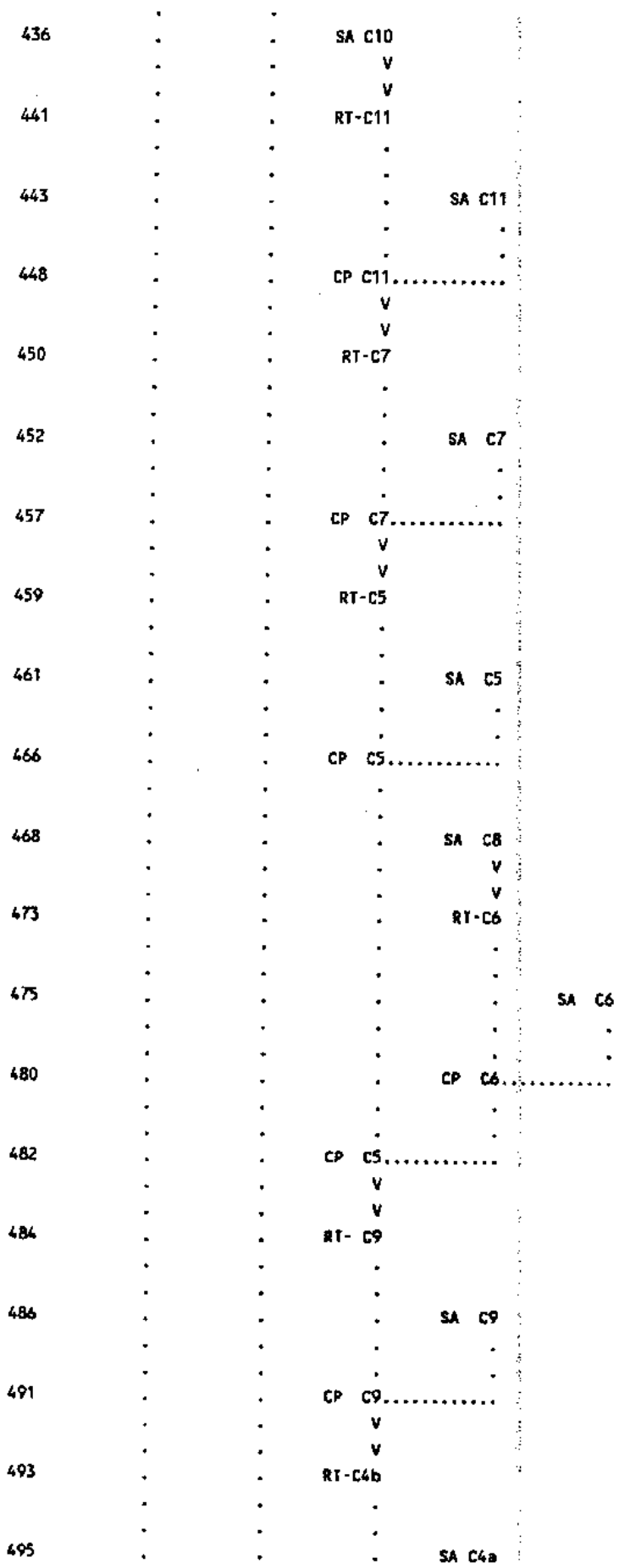
SA B2a
RT-B2b
SA B2b
CP B2b
DB2
RT-B2c
SA B2c
CP B2c
CPB10c
RT-B1
SA B1
CP B1


436
SA C10
V
V
441
RT-C11
443
SA C11
448
CP C11
V
V
450
RT-C7
452
SA C7
457
CP C7
V
V
459
RT-C5
461
SA C5
466
CP C5
468
SA C8
V
V
473
RT-C6
475
SA C6
480
CP C6
482
CP C5
V
V
484
RT- C9
486
SA C9
491
CP C9
V
V
493
RT-C4b
495
SA C4a

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500                                                SA C4b
                                                     .
                                                     .
505                CP C4b.........................
                    V
                    V
507                DB11
                    V
                    V
516                RT-C3
                    .
                    .
518                                C3A
                                     .
                                     .
523                CP  C3.............
                    V
                    V
525                DB4
                    V
                    V
534                RT-C3B
                    .
                    .
536                                C3B
                                     .
                                     .
                   C-C3B.............
                    .
                    .
543                           SA  C2
                                   .
                                   .
548                CP  C3.............
                    V
                    V
550                RT-C1
                    .
                    .
552                           SA  C1
                                   .
                                   .
557                CP  C1.............
                    .
                    .
559           CP CB1.............
               V
               V
561           RT-D1
               .
               .
563                CP  D1
                    .
                    .
568           MODULE.............
               .
               .
571                SA F1A
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                .       .       V
                .       .       V
576             .       .     DB13
                .       .       V
                .       .       V
585             .       .   RT-F1B
                .       .       .
                .       .       .
587             .       .       .       SA F1B
                .       .       .         .
                .       .       .         .
592             .       .     F1.....
                .       .       .
                .       .       .
594             .       .       .       SA  F2
                .       .       .         .
                .       .       .         .
599             .       .   MOGULW.....
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
*  RUN DATE  05/06/98  TIME  14:39:46   *
*****************************************
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*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*        609 SECOND STREET              *
*      DAVIS, CALIFORNIA 95616          *
*        (916) 551-1748                 *
*                                       *
*****************************************
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| SOMERSETT PLANNED UNIT DEVELOPEMENT                                  |
| DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                             |
|                      "PHASE I TO IV" 5 YEAR MODEL                    |
| DEVELOPED CONDITION WITH DETENTION BASINS                            |
| Washoe County, Nevada                                                |
|                                                                      |
|  5-Year Analysis                                                     |
|    - For offsite areas                                               |
|    - Watersheds measured from USGS 7.5 Minute Quads                  |
|    - Rainfall entered using hypothetical storm option                |
|    - Rainfall data estimated using revised NOAA precipitation data   |
|    - Curve number estimates based on Sage-Grass, as described in TR-55|
|      (SCS, 1986)  or NEH-4 (SCS, 1972)                               |
|    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
|      as modified for the Washoe County Hydrologic Criteria Manual.   |
|                                                                      |
| File: SSP4-005.DAT                          WRC NEVADA, INC.         |
| APRIL 1998                                  1575 DELUCCHI LN STE.207A|
| Project No.  3011                           Reno, Nevada  89502      |
|                                            (702)332-3737,FAX 332-3740|
```

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24 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         1441  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      4    0  ENDING DATE
               NDTIME         0000  ENDING TIME
               ICENT           19  CENTURY MARK

             COMPUTATION INTERVAL     0.05 HOURS
                 TOTAL TIME BASE    72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	62.	12.40	18.	6.	2.	0.41		
ROUTED TO	RT-A7	63.	12.55	18.	6.	2.	0.41		
HYDROGRAPH AT	SA A7	66.	12.35	17.	6.	2.	0.30		
2 COMBINED AT	CP A7	116.	12.50	35.	12.	4.	0.71		
ROUTED TO	RT-A6a	116.	12.50	35.	12.	4.	0.71		
HYDROGRAPH AT	SA A6a	14.	12.20	3.	1.	0.	0.06		
2 COMBINED AT	CP A6a	120.	12.50	38.	13.	4.	0.77		
ROUTED TO	DB12	63.	13.00	38.	13.	4.	0.77	5439.42	13.00
ROUTED TO	RT-A6b	63.	13.15	38.	13.	4.	0.77		
HYDROGRAPH AT	SA A6b	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP A6b	66.	13.05	40.	14.	5.	0.82		
ROUTED TO	RT-A5	67.	13.10	40.	14.	5.	0.82		
HYDROGRAPH AT	SA A5	56.	12.20	10.	4.	1.	0.13		
2 COMBINED AT	CP A5	90.	12.25	50.	18.	6.	0.95		
ROUTED TO	RT-A4	91.	12.35	50.	18.	6.	0.95		
HYDROGRAPH AT	SA A3	31.	12.25	6.	2.	1.	0.13		
HYDROGRAPH AT	SA A4	1.	12.35	1.	0.	0.	0.04		
3 COMBINED AT	CP A4	116.	12.35	57.	20.	7.	1.12		
HYDROGRAPH AT	SA A10	66.	12.35	17.	6.	2.	0.28		
ROUTED TO	DB10	42.	12.60	17.	6.	2.	0.28	5383.47	12.60
HYDROGRAPH AT	SA A15	39.	12.35	10.	3.	1.	0.16		
ROUTED TO	RT-A9	39.	12.60	10.	3.	1.	0.16		
HYDROGRAPH AT	SA A9	75.	12.40	20.	7.	2.	0.36		
2 COMBINED AT	CP A9	102.	12.50	30.	10.	3.	0.52		
ROUTED TO	DB9	100.	12.55	30.	10.	3.	0.52	5384.39	12.55
2 COMBINED AT	CPA910	142.	12.55	46.	16.	5.	0.80		

ROUTED TO	RT-A8A	142.	12.60	46.	16.	5.	0.80		
HYDROGRAPH AT	SA A8A	14.	12.25	3.	1.	0.	0.05		
2 COMBINED AT	CP A8a	147.	12.60	49.	17.	6.	0.86		
ROUTED TO	RT-A8b	147.	12.75	49.	17.	6.	0.86		
HYDROGRAPH AT	SA A13	41.	12.35	10.	3.	1.	0.19		
HYDROGRAPH AT	SA A12	13.	12.25	3.	1.	0.	0.06		
2 COMBINED AT	CP A12	54.	12.30	13.	4.	1.	0.25		
ROUTED TO	DB6	39.	12.50	13.	4.	1.	0.25	5191.90	12.50
ROUTED TO	RT-A8B	40.	12.65	13.	4.	1.	0.25		
HYDROGRAPH AT	SA A8B	26.	12.25	6.	2.	1.	0.14		
3 COMBINED AT	CP A8B	194.	12.70	68.	23.	8.	1.25		
HYDROGRAPH AT	SA A11	11.	12.40	3.	1.	0.	0.10		
3 COMBINED AT	CP4811	280.	12.70	128.	45.	15.	2.46		
ROUTED TO	RT-A2	280.	12.85	128.	45.	15.	2.46		
HYDROGRAPH AT	SA A2	29.	12.35	8.	3.	1.	0.20		
2 COMBINED AT	CP A2	292.	12.85	136.	48.	16.	2.66		
ROUTED TO	RT-A1	291.	12.90	136.	48.	16.	2.66		
ROUTED TO	RT-A1	290.	13.00	136.	48.	16.	2.66		
HYDROGRAPH AT	SA A1	12.	12.40	4.	1.	0.	0.11		
HYDROGRAPH AT	SA E6	1.	12.40	1.	0.	0.	0.04		
ROUTED TO	RT-E56	1.	12.60	1.	0.	0.	0.04		
HYDROGRAPH AT	SA E5	23.	12.30	6.	2.	1.	0.12		
ROUTED TO	RT-E56	23.	12.50	6.	2.	1.	0.12		
2 COMBINED AT	CP E56	24.	12.55	6.	2.	1.	0.17		
ROUTED TO	RT-E4	27.	12.80	6.	2.	1.	0.17		
HYDROGRAPH AT	E4	53.	12.45	16.	6.	2.	0.42		
2 COMBINED AT	C-E4	59.	12.80	23.	8.	3.	0.59		
ROUTED TO	RT-E3	58.	13.05	23.	8.	3.	0.59		
HYDROGRAPH AT	SA E3	14.	12.35	4.	1.	0.	0.12		
2 COMBINED AT	CP E3	63.	12.60	26.	9.	3.	0.71		

ROUTED TO	RT-A1	63.	13.05	26.	9.	3.	0.71
HYDROGRAPH AT	SA E2	1.	15.60	1.	1.	0.	0.17
ROUTED TO	RT-E1	1.	16.10	1.	1.	0.	0.17
HYDROGRAPH AT	SA E1	13.	12.40	4.	1.	0.	0.12
2 COMBINED AT	CP E1	13.	12.40	5.	2.	1.	0.28
ROUTED TO	RT-A1	13.	12.50	5.	2.	1.	0.28
4 COMBINED AT	I-80	361.	13.05	170.	60.	20.	3.77
HYDROGRAPH AT	SA B17	64.	12.40	19.	6.	2.	0.41
ROUTED TO	RT-B12	63.	12.70	19.	6.	2.	0.41
HYDROGRAPH AT	SA B13	24.	12.40	8.	3.	1.	0.24
ROUTED TO	RT-B12	24.	12.60	8.	3.	1.	0.24
HYDROGRAPH AT	SA B12	55.	12.30	15.	5.	2.	0.35
3 COMBINED AT	CP B12	116.	12.60	41.	14.	5.	1.00
ROUTED TO	RT-B11	117.	12.70	41.	14.	5.	1.00
HYDROGRAPH AT	SA B11	12.	12.30	3.	1.	0.	0.08
2 COMBINED AT	CP B11	122.	12.70	44.	15.	5.	1.08
ROUTED TO	RT-10a	124.	12.80	44.	15.	5.	1.08
HYDROGRAPH AT	SAB10a	28.	12.30	6.	2.	1.	0.11
2 COMBINED AT	CPB10a	133.	12.80	49.	17.	6.	1.19
HYDROGRAPH AT	SA B8a	41.	12.30	10.	3.	1.	0.24
ROUTED TO	RT-B8b	41.	12.35	10.	3.	1.	0.24
HYDROGRAPH AT	SA B8b	15.	12.20	3.	1.	0.	0.04
HYDROGRAPH AT	SA B9	11.	12.30	3.	1.	0.	0.06
3 COMBINED AT	CP B8b	63.	12.30	15.	5.	2.	0.34
ROUTED TO	RT-B7	63.	12.40	15.	5.	2.	0.34
HYDROGRAPH AT	SA B7	4.	12.25	1.	0.	0.	0.02
3 COMBINED AT	CPB10a	163.	12.80	65.	23.	8.	1.55
ROUTED TO	RT-10b	162.	12.80	65.	23.	8.	1.55
HYDROGRAPH AT	SAB10b	17.	12.10	3.	1.	0.	0.04
2 COMBINED AT	CPB10b	165.	12.80	67.	24.	8.	1.59

ROUTED TO	DB3	143.	12.95	67.	24.	8.	1.59	5015.33	12.95
ROUTED TO	RT-10c	143.	13.00	67.	24.	8.	1.59		
HYDROGRAPH AT	SAB10c	6.	12.10	1.	0.	0.	0.01		
2 COMBINED AT	CPB10c	144.	13.00	68.	24.	8.	1.60		
HYDROGRAPH AT	SA B16	31.	12.30	7.	2.	1.	0.09		
ROUTED TO	RT- B3	31.	12.30	7.	2.	1.	0.09		
HYDROGRAPH AT	SA B3	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B3	45.	12.25	10.	3.	1.	0.14		
ROUTED TO	DB1	4.	17.10	4.	3.	1.	0.14	5054.01	17.45
ROUTED TO	RT-B5	4.	17.55	4.	3.	1.	0.14		
HYDROGRAPH AT	SA B6	6.	12.25	1.	0.	0.	0.03		
ROUTED TO	RT-B5	6.	12.40	1.	0.	0.	0.03		
HYDROGRAPH AT	SA B14	17.	12.25	4.	1.	0.	0.09		
ROUTED TO	RT-B5	17.	12.40	4.	1.	0.	0.09		
HYDROGRAPH AT	SA B5	16.	12.30	4.	1.	0.	0.08		
4 COMBINED AT	CP B5	39.	12.40	13.	6.	2.	0.33		
ROUTED TO	RT-B4	40.	12.45	13.	6.	2.	0.33		
HYDROGRAPH AT	SA B4	13.	12.15	2.	1.	0.	0.04		
2 COMBINED AT	CP B4	45.	12.40	15.	7.	2.	0.37		
ROUTED TO	RT-B2c	45.	12.50	15.	7.	2.	0.37		
HYDROGRAPH AT	SA B2a	23.	12.15	4.	1.	0.	0.05		
ROUTED TO	RT-B2b	24.	12.25	4.	1.	0.	0.05		
HYDROGRAPH AT	SA B2b	50.	12.20	8.	3.	1.	0.13		
2 COMBINED AT	CP B2b	71.	12.20	12.	4.	1.	0.18		
ROUTED TO	DB2	60.	12.30	12.	4.	1.	0.18	5049.70	12.30
ROUTED TO	RT-B2c	60.	12.40	12.	4.	1.	0.18		
HYDROGRAPH AT	SA B2c	18.	12.25	4.	1.	0.	0.06		
3 COMBINED AT	CP B2c	111.	12.45	30.	13.	4.	0.61		
2 COMBINED AT	CPB10c	192.	12.50	97.	37.	12.	2.21		
ROUTED TO	RT-B1	192.	12.55	97.	37.	12.	2.21		

HYDROGRAPH AT	SA B1	15.	12.20	3.	1.	0.	0.05		
2 COMBINED AT	CP B1	196.	12.55	100.	38.	13.	2.26		
HYDROGRAPH AT	SA C10	147.	12.40	39.	13.	4.	0.66		
ROUTED TO	RT-C11	148.	12.50	39.	13.	4.	0.66		
HYDROGRAPH AT	SA C11	97.	12.25	19.	6.	2.	0.32		
2 COMBINED AT	CP C11	198.	12.45	58.	20.	7.	0.97		
ROUTED TO	RT-C7	198.	12.55	58.	20.	7.	0.97		
HYDROGRAPH AT	SA C7	73.	12.30	17.	6.	2.	0.34		
2 COMBINED AT	CP C7	243.	12.55	75.	25.	8.	1.31		
ROUTED TO	RT-C5	243.	12.60	75.	25.	8.	1.31		
HYDROGRAPH AT	SA C5	23.	12.35	6.	2.	1.	0.15		
2 COMBINED AT	CP C5	257.	12.60	81.	27.	9.	1.46		
HYDROGRAPH AT	SA C8	57.	12.30	12.	4.	1.	0.24		
ROUTED TO	RT-C6	57.	12.40	12.	4.	1.	0.24		
HYDROGRAPH AT	SA C6	14.	12.30	4.	1.	0.	0.10		
2 COMBINED AT	CP C6	70.	12.40	16.	5.	2.	0.33		
2 COMBINED AT	CP C5	306.	12.50	97.	33.	11.	1.80		
ROUTED TO	RT- C9	305.	12.55	97.	33.	11.	1.80		
HYDROGRAPH AT	SA C9	11.	12.35	3.	1.	0.	0.11		
2 COMBINED AT	CP C9	313.	12.50	100.	34.	11.	1.91		
ROUTED TO	RT-C4b	313.	12.60	100.	34.	11.	1.91		
HYDROGRAPH AT	SA C4a	17.	12.25	4.	1.	0.	0.09		
HYDROGRAPH AT	SA C4b	6.	12.25	1.	0.	0.	0.04		
3 COMBINED AT	CP C4b	322.	12.55	104.	36.	12.	2.04		
ROUTED TO	DB11	179.	13.15	104.	36.	12.	2.04	5105.92	13.15
ROUTED TO	RT-C3	179.	13.20	104.	36.	12.	2.04		
HYDROGRAPH AT	C3A	11.	12.35	3.	1.	0.	0.12		
2 COMBINED AT	CP C3	183.	13.20	108.	37.	12.	2.16		
ROUTED TO	DB4	180.	13.30	107.	37.	12.	2.16	5023.39	13.30
ROUTED TO	RT-C3B	180.	13.35	107.	37.	12.	2.16		

HYDROGRAPH AT	C3B	12.	12.35	3.	1.	0.	0.10		
2 COMBINED AT	C-C3B	184.	13.35	111.	38.	13.	2.26		
HYDROGRAPH AT	SA C2	20.	12.30	5.	2.	1.	0.17		
2 COMBINED AT	CP C3	190.	13.35	116.	40.	13.	2.43		
ROUTED TO	RT-C1	190.	13.40	116.	40.	13.	2.43		
HYDROGRAPH AT	SA C1	12.	12.30	3.	1.	0.	0.08		
2 COMBINED AT	CP C1	193.	13.40	118.	41.	14.	2.51		
2 COMBINED AT	CP CB1	364.	13.20	218.	78.	26.	4.77		
ROUTED TO	RT-D1	364.	13.30	218.	78.	26.	4.77		
HYDROGRAPH AT	SA D1	31.	12.30	8.	3.	1.	0.22		
2 COMBINED AT	MOGULE	372.	13.30	225.	81.	27.	4.99		
HYDROGRAPH AT	SA F1A	22.	12.15	4.	1.	0.	0.07		
ROUTED TO	DB13	4.	13.40	3.	1.	0.	0.07	5068.24	13.45
ROUTED TO	RT-F1B	4.	13.60	3.	1.	0.	0.07		
HYDROGRAPH AT	SA F1B	20.	12.25	4.	2.	1.	0.11		
2 COMBINED AT	F1	21.	12.25	7.	3.	1.	0.18		
HYDROGRAPH AT	SA F2	24.	12.30	6.	2.	1.	0.14		
2 COMBINED AT	MOGULW	44.	12.25	13.	5.	2.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	62.58	753.00	0.57	3.00	62.58	753.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1250E+02 EXCESS=0.0000E+00 OUTFLOW=0.1250E+02 BASIN STORAGE=0.2748E-02 PERCENT ERROR= -0.1

RT-A6a	MANE	1.35	115.89	749.79	0.64	3.00	115.80	750.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2421E+02 EXCESS=0.0000E+00 OUTFLOW=0.2421E+02 BASIN STORAGE=0.3375E-03 PERCENT ERROR= 0.0

RT-A6b	MANE	3.00	63.09	789.00	0.64	3.00	63.09	789.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2604E+02 EXCESS=0.0000E+00 OUTFLOW=0.2604E+02 BASIN STORAGE=0.1315E-02 PERCENT ERROR= 0.0

RT-A5	MANE	3.00	66.58	786.00	0.64	3.00	66.58	786.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2800E+02 EXCESS=0.0000E+00 OUTFLOW=0.2800E+02 BASIN STORAGE=0.6379E-03 PERCENT ERROR= 0.0

RT-A4	MANE	3.00	90.53	741.00	0.70	3.00	90.53	741.00	0.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3522E+02 EXCESS=0.0000E+00 OUTFLOW=0.3522E+02 BASIN STORAGE=0.2028E-02 PERCENT ERROR= 0.0

RT-A9	MANE	3.00	39.25	756.00	0.79	3.00	39.25	756.00	0.79

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6619E+01 EXCESS=0.0000E+00 OUTFLOW=0.6622E+01 BASIN STORAGE=0.3590E-02 PERCENT ERROR= -0.1

RT-A8A	MANE	3.00	142.07	756.00	0.74	3.00	142.07	756.00	0.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3168E+02 EXCESS=0.0000E+00 OUTFLOW=0.3168E+02 BASIN STORAGE=0.1041E-02 PERCENT ERROR= 0.0

RT-A8b	MANE	3.00	147.45	765.00	0.74	3.00	147.45	765.00	0.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3362E+02 EXCESS=0.0000E+00 OUTFLOW=0.3362E+02 BASIN STORAGE=0.2471E-02 PERCENT ERROR= 0.0

RT-A8B	MANE	3.00	39.81	759.00	0.67	3.00	39.81	759.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8882E+01 EXCESS=0.0000E+00 OUTFLOW=0.8883E+01 BASIN STORAGE=0.2355E-02 PERCENT ERROR= 0.0

RT-A2	MANE	3.00	280.13	771.00	0.68	3.00	280.13	771.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8900E+02 EXCESS=0.0000E+00 OUTFLOW=0.8900E+02 BASIN STORAGE=0.3093E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.88	291.24	772.68	0.66	3.00	290.96	774.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9435E+02 EXCESS=0.0000E+00 OUTFLOW=0.9435E+02 BASIN STORAGE=0.1008E-02 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	290.28	780.00	0.66	3.00	290.28	780.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9434E+02 EXCESS=0.0000E+00 OUTFLOW=0.9434E+02 BASIN STORAGE=0.2747E-02 PERCENT ERROR= 0.0

RT-E56	MANE	1.35	1.28	756.00	0.20	3.00	1.28	756.00	0.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4858E+00 EXCESS=0.0000E+00 OUTFLOW=0.4864E+00 BASIN STORAGE=0.1125E-02 PERCENT ERROR= -0.4

RT-E56	MANE	3.00	23.33	750.00	0.61	3.00	23.33	750.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4011E+01 EXCESS=0.0000E+00 OUTFLOW=0.4012E+01 BASIN STORAGE=0.1771E-02 PERCENT ERROR= -0.1

RT-E4	MANE	3.00	27.49	768.00	0.50	3.00	27.49	768.00	0.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4499E+01 EXCESS=0.0000E+00 OUTFLOW=0.4504E+01 BASIN STORAGE=0.4016E-02 PERCENT ERROR= -0.2

RT-E3	MANE	3.00	57.68	783.00	0.51	3.00	57.68	783.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1598E+02 EXCESS=0.0000E+00 OUTFLOW=0.1599E+02 BASIN STORAGE=0.2251E-02 PERCENT ERROR= 0.0

RT-A1	MANE	2.04	62.94	783.18	0.49	3.00	62.71	783.00	0.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1859E+02 EXCESS=0.0000E+00 OUTFLOW=0.1859E+02 BASIN STORAGE=0.5213E-03 PERCENT ERROR= 0.0

RT-E1	MANE	3.00	1.28	972.00	0.11	3.00	1.28	972.00	0.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1003E+01 EXCESS=0.0000E+00 OUTFLOW=0.1003E+01 BASIN STORAGE=0.2248E-02 PERCENT ERROR= -0.2

RT-A1	MANE	3.00	13.22	750.00	0.25	3.00	13.22	750.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3681E+01 EXCESS=0.0000E+00 OUTFLOW=0.3681E+01 BASIN STORAGE=0.1370E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	63.43	762.00	0.57	3.00	63.43	762.00	0.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1254E+02 EXCESS=0.0000E+00 OUTFLOW=0.1254E+02 BASIN STORAGE=0.4176E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	24.40	756.00	0.45	3.00	24.40	756.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5701E+01 EXCESS=0.0000E+00 OUTFLOW=0.5704E+01 BASIN STORAGE=0.2449E-02 PERCENT ERROR= -0.1

RT-B11	MANE	3.00	117.05	762.00	0.53	3.00	117.05	762.00	0.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2822E+02 EXCESS=0.0000E+00 OUTFLOW=0.2822E+02 BASIN STORAGE=0.1209E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	124.08	768.00	0.52	3.00	124.08	768.00	0.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3019E+02 EXCESS=0.0000E+00 OUTFLOW=0.3020E+02 BASIN STORAGE=0.1735E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	3.00	40.63	741.00	0.51	3.00	40.63	741.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6638E+01 EXCESS=0.0000E+00 OUTFLOW=0.6639E+01 BASIN STORAGE=0.6975E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	63.17	744.00	0.56	3.00	63.17	744.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1027E+02 EXCESS=0.0000E+00 OUTFLOW=0.1027E+02 BASIN STORAGE=0.1635E-02 PERCENT ERROR= 0.0

RT-10b	MANE	1.28	162.32	767.67	0.55	3.00	162.13	768.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4535E+02 EXCESS=0.0000E+00 OUTFLOW=0.4535E+02 BASIN STORAGE=0.3287E-03 PERCENT ERROR= 0.0

RT-10c	MANE	2.03	142.80	779.42	0.56	3.00	142.76	780.00	0.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4710E+02 EXCESS=0.0000E+00 OUTFLOW=0.4710E+02 BASIN STORAGE=0.4990E-03 PERCENT ERROR= 0.0

RT- B3	MANE	1.24	31.09	737.62	0.93	3.00	31.01	738.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4638E+01 EXCESS=0.0000E+00 OUTFLOW=0.4638E+01 BASIN STORAGE=0.2021E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	4.04	1056.00	0.88	3.00	4.04	1056.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6585E+01 EXCESS=0.0000E+00 OUTFLOW=0.6585E+01 BASIN STORAGE=0.3778E-03 PERCENT ERROR= 0.0

RT-85	MANE	3.00	5.64	744.00	0.55	3.00	5.64	744.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8464E+00 EXCESS=0.0000E+00 OUTFLOW=0.8468E+00 BASIN STORAGE=0.1350E-02 PERCENT ERROR= -0.2

RT-85	MANE	3.00	17.17	744.00	0.58	3.00	17.17	744.00	0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2697E+01 EXCESS=0.0000E+00 OUTFLOW=0.2697E+01 BASIN STORAGE=0.1645E-02 PERCENT ERROR= -0.1

RT-84	MANE	3.00	39.71	747.00	0.71	3.00	39.71	747.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1262E+02 EXCESS=0.0000E+00 OUTFLOW=0.1262E+02 BASIN STORAGE=0.6230E-03 PERCENT ERROR= 0.0

RT-82c	MANE	3.00	45.11	750.00	0.72	3.00	45.10	750.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1416E+02 EXCESS=0.0000E+00 OUTFLOW=0.1416E+02 BASIN STORAGE=0.7656E-03 PERCENT ERROR= 0.0

RT-82b	MANE	3.00	23.56	735.00	0.88	3.00	23.56	735.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2453E+01 EXCESS=0.0000E+00 OUTFLOW=0.2453E+01 BASIN STORAGE=0.8794E-03 PERCENT ERROR= -0.1

RT-82c	MANE	3.00	59.70	744.00	0.88	3.00	59.70	744.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8338E+01 EXCESS=0.0000E+00 OUTFLOW=0.8339E+01 BASIN STORAGE=0.1542E-02 PERCENT ERROR= 0.0

RT-81	MANE	3.00	191.85	753.00	0.62	3.00	191.85	753.00	0.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7265E+02 EXCESS=0.0000E+00 OUTFLOW=0.7265E+02 BASIN STORAGE=0.1112E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	147.69	750.00	0.76	3.00	147.69	750.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2659E+02 EXCESS=0.0000E+00 OUTFLOW=0.2660E+02 BASIN STORAGE=0.2518E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	198.11	753.00	0.76	3.00	198.11	753.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3927E+02 EXCESS=0.0000E+00 OUTFLOW=0.3927E+02 BASIN STORAGE=0.2820E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	243.33	756.00	0.72	3.00	243.33	756.00	0.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5056E+02 EXCESS=0.0000E+00 OUTFLOW=0.5056E+02 BASIN STORAGE=0.1639E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	57.36	744.00	0.66	3.00	57.36	744.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8402E+01 EXCESS=0.0000E+00 OUTFLOW=0.8405E+01 BASIN STORAGE=0.2042E-02 PERCENT ERROR= 0.0

RT- C9	MANE	2.28	306.83	751.45	0.68	3.00	305.11	753.00	0.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6534E+02 EXCESS=0.0000E+00 OUTFLOW=0.6534E+02 BASIN STORAGE=0.7993E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	2.42	313.20	753.57	0.66	3.00	312.74	756.00	0.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6752E+02 EXCESS=0.0000E+00 OUTFLOW=0.6752E+02 BASIN STORAGE=0.6963E-03 PERCENT ERROR= 0.0

RT-C3	MANE	3.00	179.06	792.00	0.65	3.00	179.06	792.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7087E+02 EXCESS=0.0000E+00 OUTFLOW=0.7087E+02 BASIN STORAGE=0.1068E-02 PERCENT ERROR= 0.0

RT-C3B	MANE	2.36	180.41	801.57	0.63	3.00	180.35	801.00	0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7314E+02 EXCESS=0.0000E+00 OUTFLOW=0.7314E+02 BASIN STORAGE=0.5891E-03 PERCENT ERROR= 0.0

RT-C1	MANE	3.00	189.77	804.00	0.61	3.00	189.77	804.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7898E+02 EXCESS=0.0000E+00 OUTFLOW=0.7898E+02 BASIN STORAGE=0.1193E-02 PERCENT ERROR= 0.0

RT-D1	MANE	3.00	363.56	798.00	0.61	3.00	363.56	798.00	0.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1556E+03 EXCESS=0.0000E+00 OUTFLOW=0.1556E+03 BASIN STORAGE=0.2097E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	3.60	822.00	0.65	3.00	3.60	822.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2511E+01 EXCESS=0.0000E+00 OUTFLOW=0.2511E+01 BASIN STORAGE=0.1447E-02 PERCENT ERROR= -0.1

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

Appendix F - Project Phasing Analysis

HEC-1 Output
100-Year Proposed Condition Analysis
Phase I to IV Improvements Only

WRC NEVADA, INC.

April 17, 1998

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
* RUN DATE  05/06/98  TIME  14:41:06    *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748               *
*                                       *
*****************************************
```

```
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

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

          *DIAGRAM
    1     ID   ===========================================================================
    2     ID   | SOMERSETT PLANNED UNIT DEVELOPEMENT                                     |
    3     ID   | DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS                                |
    4     ID   |                    "PHASE I TO IV" 100 YEAR MODEL                       |
    5     ID   | DEVELOPED CONDITION WITH DETENTION BASINS                               |
    6     ID   | Washoe County, Nevada                                                   |
    7     ID   |                                                                         |
    8     ID   |  100-Year Analysis                                                      |
    9     ID   |    - For offsite areas                                                  |
   10     ID   |    - Watersheds measured from USGS 7.5 Minute Quads                     |
   11     ID   |    - Rainfall entered using hypothetical storm option                   |
   12     ID   |    - Rainfall data estimated using revised NOAA precipitation data      |
   13     ID   |    - Curve number estimates based on Sage-Grass, as described in TR-55  |
   14     ID   |      (SCS, 1986)  or NEH-4 (SCS, 1972)                                  |
   15     ID   |    - Lag time estimates are based on USBR methods (Sierra Nevada Basin n)|
   16     ID   |      as modified for the Washoe County Hydrologic Criteria Manual.      |
   17     ID   |                                                                         |
   18     ID   | File: SSP4-100.DAT                          WRC NEVADA, INC.            |
   19     ID   | APRIL 1998                                  1575 DELUCCHI LN STE.207A   |
   20     ID   | Project No.   3011                          Reno, Nevada  89502         |
   21     ID   |                                            (702)332-3737,FAX 332-3740  |
   22     ID   ===========================================================================
   23     IT       3       0       0    1441
   24     IO       5       0       0
          *
          *
          * *********    WATERSHED SUBAREA A    ************
          *
          *

   25     KK  SA A14 GENERATE HYDOGRAPH FOR SUB-AREA A14
   26     PH       1            0.60    1.09    1.81    2.05    2.23    2.60    3.48    4.35
   27     BA  0.4094
   28     LS       0      73
   29     UD    0.32
          *

   30     KK   RT-A7 ROUTE HDROGRAPH FROM AREA A14 TO OUTLET OF AREA A7
   31     RD    5700    0.14    0.07            TRAP       6       3
          *

   32     KK  SA  A7 GENERATE HYDOGRAPH FOR SUB-AREA A7
   33     PH       1            0.55    1.00    1.67    1.91    2.10    2.49    3.27    4.06
   34     BA  0.3002
   35     LS       0      79
   36     UD    0.31
          *

   37     KK  CP  A7 COMBINE HYDROGRAPHS FROM AREA A14 AND AREA A7
   38     HC       2
          *
```

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

 39       KK  RT-A6a ROUTE HDROGRAPH TO OUTLET OF AREA A6a
 40       RD     700   0.140    0.07           TRAP       6       3
          *

 41       KK  SA A6a GENERATE HYDOGRAPH FOR SUB-AREA A6a
 42       PH       1            0.55    1.00    1.67    1.88    2.04    2.37    3.18    4.00
 43       BA  0.0583
 44       LS       0      78
 45       UD    0.14
          *

 46       KK  CP A6a COMBINE HYDROGRAPHS FROM AREA A6a AND AREA A7 and A14
 47       HC       2
          *

 48       KK    DB12 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 12
 49       KM         24" RCP ie 5425
 50       KM         4'x4'RCB at 5439
 51       RS       1    STOR      -1
 52       SA    .039    .122    .276    .531    .840   1.162
 53       SE    5425    5430    5435    5440    5445    5450
 54       SQ       0    21.4    30.3    37.1    42.8    47.8    52.4    56.6    87.7   141.0
 55       SQ   208.7   288.2   317.7   598.6
 56       SE    5425    5427    5429    5431    5433    5435    5437    5439    5441    5443
 57       SE    5445    5447    5449    5451
          *

 58       KK  RT-A6b ROUTE HDROGRAPH TO OUTLET OF AREA A6b
 59       RD    2400   0.069    0.07           TRAP       6       3
          *

 60       KK  SA A6b GENERATE HYDOGRAPH FOR SUB-AREA A6b
 61       PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
 62       BA  0.0508
 63       LS       0      81
 64       UD    0.15
          *

 65       KK  CP A6b COMBINE HYDROGRAPHS FROM AREA A6a,A6b AND AREA A7 and A14
 66       HC       2
          *

 67       KK   RT-A5 ROUTE COMBINED HYDROGRAPH FROM AREAS A6 AND A7 TO OUTLET OF A5
 68       RD    1100   0.055    0.07           TRAP       6       3
          *

 69       KK  SA  A5 GENERATE HYDOGRAPH FOR SUB-AREA A5
 70       PH       1            0.50    0.91    1.52    1.74    1.91    2.26    3.02    3.77
 71       BA  0.1291
 72       LS       0      87
 73       UD    0.18
          *
```

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

  74      KK  CP  A5 COMBINE HYDROGRAPHS FROM AREA A5 W/HYDROGRAPHS OF AREAS A6 & A7
  75      HC       2
          *

  76      KK   RT-A4 ROUTE COMBINED FLOWS TO OUTLET OF A4
  77      RD    2900   0.055     .07          TRAP       6       3
          *

  78      KK  SA  A3 GENERATE HYDOGRAPH FOR SUB-AREA A3
  79      PH       1            0.49   0.89   1.48   1.69   1.84   2.17   2.92   3.66
  80      BA  0.1329
  81      LS       0      80
  82      UD    0.19
          *

  83      KK  SA  A4 GENERATE HYDOGRAPH FOR SUB-AREA A4
  84      PH       1            0.50   0.91   1.52   1.73   1.89   2.21   2.98   3.75
  85      BA  0.0405
  86      LS       0      66
  87      UD    0.20
          *

  88      KK  CP  A4 COMBINE HYDROGRAPHS FROM AREA A4 W/HYDROGRAPHS OF AREAS A3, A5, A6 & A7
  89      HC       3
          *

  90      KK  SA A10 GENERATE HYDOGRAPH FOR SUB-AREA A10
  91      PH       1            0.57   1.04   1.74   1.96   2.13   2.49   3.30   4.11
  92      BA  0.2819
  93      LS       0      79
  94      UD    0.30
          *

  95      KK    DB10 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 10
  96      KM         24"RCP ie 5375
  97      RS       1    STOR      -1
  98      SA     .04     .11     .26     .294    .396    .508    .628    .754   1.23
  99      SE    5375    5380    5385    5390    5392    5394    5396    5398   5400
 100      SQ       0    12.0    24.0    36.0    48.0    60.0    72.0
 101      SE    5375 5376.75 5378.47 5381.39 5385.47 5391.99 5406.13
          *

 102      KK  SA A15 GENERATE HYDOGRAPH FOR SUB-AREA A15
 103      PH       1            0.60   1.09   1.81   2.04   2.21   2.58   3.46   4.35
 104      BA  0.1563
 105      LS       0      78
 106      UD    0.29
          *
```

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

107       KK   RT-A9 ROUTE COMBINED HYDROGRAPH TO OUTLET OF A9
108       RD    6800   0.165     .08            TRAP       6       3
          *

109       KK  SA  A9 GENERATE HYDOGRAPH FOR SUB-AREA A9
110       PH       1            0.57    1.04    1.74    1.97    2.14    2.51    3.32    4.13
111       BA  0.3636
112       LS       0      78
113       UD    0.33
          *

114       KK  CP  A9 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A15
115       HC       2
          *

116       KK     DB9 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 9
117       KM          2-60"RCP ie 5382
118       RS       1    STOR      -1
119       SA   0.168   0.213   0.262   0.314
120       SE    5384    5386    5388    5390
121       SQ    0.00      60     120     180     240     300     360     420     480     524
122       SE    5382 5383.63 5384.76 5385.64 5386.46 5387.32 5388.31 5389.48 5390.86 5392.00
          *

123       KK  CPA910 COMBINE HYDROGRAPHS FROM AREA A9 W/HYDROGRAPHS OF AREA A10
124       HC       2
          *

125       KK  RT-A8a ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8a
126       RD    1500   0.060     .07            TRAP       6       3
          *

127       KK  SA A8a GENERATE HYDOGRAPH FOR SUB-AREA A8a
128       PH       1            0.53    0.96    1.59    1.81    1.97    2.31    3.08    3.86
129       BA  0.0548
130       LS       0      79
131       UD    0.19
          *

132       KK  CP A8a COMBINE HYDROGRAPHS FROM AREA A8a W/ COMB HYDROGRAPH FROM AREA A9 & A10
133       HC       2
          *

134       KK  RT-A8b ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8b
135       RD    3400   0.050     .07            TRAP       6       3
          *

136       KK  SA A13 GENERATE HYDOGRAPH FOR SUB-AREA A13
137       PH       1            0.56    1.02    1.70    1.91    2.07     2.4    3.21    4.02
138       BA  0.1912
139       LS              79
140       UD    0.28
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  141     KK  SA A12 GENERATE HYDOGRAPH FOR SUB-AREA A12
  142     PH       1            0.55   1.00   1.67   1.88   2.04   2.37   3.18   4.00
  143     BA  0.0564
  144     LS       0      78
  145     UD    0.22
          *

  146     KK  CP A12 COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  147     HC       2
          *

  148     KK     DB6 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 6
  149     KM           18" RCP ie 5184 and 6'X8' at 5191
  150     RS       1    STOR      -1
  151     SA   0.036   0.091   0.153  0.224  0.302  0.391  0.450
  152     SE    5186    5188    5190   5192   5194   5196   5198
  153     SQ     8.5    12.0    14.7   17.0   19.0   20.8   22.5   40.9   73.0  114.2
  154     SQ   162.6   189.2   249.1
  155     SE    5185    5186    5187   5188   5189   5190   5191   5192   5193   5194
  156     SE    5195  5195.5    5196
          *

  157     KK  RT-A8b ROUTE COMBINED HYDROGRAPHS FROM A9 AND A10 TO OUTLET OF A8b
  158     RD    3300   0.055     .07          TRAP      6      3
          *

  159     KK  SA A8b GENERATE HYDOGRAPH FOR SUB-AREA A8b
  160     PH       1            0.53   0.96   1.59   1.81   1.97   2.31   3.08   3.86
  161     BA  0.1428
  162     LS       0      76
  163     UD    0.21
          *

  164     KK  CP A8b COMBINE HYDROGRAPHS FROM AREA A12 W/HYDROGRAPH FROM AREA A13
  165     HC       3
          *

  166     KK  SA A11 GENERATE HYDOGRAPH FOR SUB-AREA A11
  167     PH       1            0.54   0.98   1.63   1.82   1.96   2.26   3.04   3.82
  168     BA  0.0958
  169     LS       0      74
  170     UD    0.33
          *

  171     KK  CP4811 COMBINE HYDROGRAPHS AT OUTLET OF AREAS A3, A4, A8 AND A11
  172     HC       3
          *

  173     KK   RT-A2 ROUTE COMBINED HYDROGRAPHS FROM A3-7 TO OUTLET OF A2
  174     RD    4400  0.0386     .07          TRAP      6      3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

175       KK  SA  A2 GENERATE HYDOGRAPH FOR SUB-AREA A2
176       PH       1           0.49    0.89    1.48    1.68    1.83    2.15    2.91    3.66
177       BA  0.1974
178       LS       0      77
179       UD    0.28
          *

180       KK  CP  A2 COMBINE HYDROGRAPH FROM AREA A2 W/HYDROGRAPHS FROM AREA A3-13
181       HC       2
          *

182       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FROM A2-13 TO OUTLET OF A1, REACH 1
183       RD    1500    0.07    0.07           TRAP       6       3
          *

184       KK   RT-A1 ROUTE COMBINED HYDROGRAPH FRON A2-13 TO OUTLET OF A1, REACH 2
185       RD    2400  0.0125   0.040           TRAP      15       3
          *

186       KK  SA  A1 GENERATE HYDOGRAPH FOR SUB-AREA A1
187       PH       1           0.48    0.87    1.45    1.64    1.78    2.08    2.79    3.51
188       BA  0.1127
189       LS       0      76
190       UD    0.33
          *
          *
          * *********   WATERSHED SUBAREA E    *************
          *
          *

191       KK  SA  E6 GENERATE HYDROGRAPH FOR SUB AREA E6
192       PH       1           0.54    0.98    1.63    1.82    1.96    2.26    3.06    3.86
193       BA  0.0448
194       LS       0      65
195       UD    0.22
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIIONS ***********
          * KK   DB5 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 5
          * KM       12"RCP ie 5114
          * RS     1    STOR      -1
          * SA  .119    .172    .231    .296    .366     0.5
          * SE  5114    5116    5118    5120    5122    5124
          * SQ     0       1       2       3       4       5       6       7       8
          * SE  5114 5114.59 5114.91 5115.24 5115.68 5116.26  5117.5 5119.38 5121.55    51
          *

196       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
197       RD    1900  0.0658    0.07           trap       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

198       KK  SA  E5 GENERATE HYDOGRAPH FOR SUB-AREA E5
199       PH       1            0.54    0.98    1.63    1.84    2.00    2.33    3.14    3.95
200       BA   .1241
201       LS       0      77
202       UD     .27
          *

203       KK  RT-E56 ROUTE HYDROGRAPH TO CONFLUENCE W/E6
204       RD    2500   .0360     .07          TRAP       6       3
          *

205       KK  CP E56 COMBINE HYDROGRAPHS FOR E5 AND E6
206       HC       2
          *

207       KK   RT-E4 ROUTE HYDROGRAPH FROM CONFLUENCE TO OUTLET OF E4
208       RD    4500   .0310     .07          TRAP       6       3
          *

209       KK      E4 GENERATE HYDOGRAPH FOR SUB-AREA E4
210       PH       1            0.51    0.93    1.56    1.75    1.89    2.19    2.98    3.77
211       BA   .4231
212       LS       0      76
213       UD     .36
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ********
          * KK   D88 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 8
          * KM       24"RCP ie 5122
          * RS     1    STOR      -1
          * SA  .085    .134    .198    .273    .356    .445    .540
          * SE  5122    5124    5126    5128    5130    5132    5134
          * SQ     0       5      10      15      20      25      30      35
          * SE  5122 5123.03 5123.63 5124.18 5124.86 5125.76 5126.87 5128.19
          *

214       KK    C-E4 COMBINE HYDROGRAPHS FROM E5 E4 AND E6
215       HC       2
          *
          * ********* NOT INCLUDED, WATERSHED IS IN EXISTING CONDITIONS ***********
          * KK  D814 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 14
          * KM       12"RCP ie 5060
          * RS     1    STOR      -1
          * SA  .341    .475    .631    .811   1.025   1.274    1.50
          * SE  5060    5062    5064    5066    5068    5070    5072
          * SQ     0     2.0     4.0     6.0     8.0    10.0      12      14
          * SE5060.0  5060.9  5061.7  5063.0  5064.8  5067.4  5071.5  5072.0
          *

216       KK   RT-E3 ROUTE HYDROGRAPH TO OUTLET OF E3
217       RD    3500  .00429    0.07          TRAP       6       3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

218       KK  SA  E3 GENERATE HYDOGRAPH FOR SUB-AREA E3
219       PH       1           0.50    0.91    1.52    1.69    1.81    2.08    2.83    3.57
220       BA  0.1191
221       LS       0      75
222       UD    0.27
          *

223       KK  CP  E3 COMBINE HYDROGRAPH E3 W/HYDROGRAPH E4, E5 AND E6
224       HC       2
          *

225       KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
226       RD     500  0.0125     .04           TRAP      15       3
          *

227       KK  SA  E2 GENERATE HYDOGRAPH FOR SUB-AREA E2
228       PH       1           .050    0.91    1.52    1.71    1.85    2.15    2.92    3.69
229       BA  0.1653
230       LS       0      62
231       UD    0.38
          *

232       KK   RT-E1 ROUTE HYDROGRAPH TO OUTLET OF E1
233       RD    3200  0.0375     .07           TRAP       6       3
          *

234       KK  SA  E1 GENERATE HYDOGRAPH FOR SUB-AREA E1
235       PH       1           0.49    0.89    1.48    1.66    1.80    2.08    2.80    3.53
236       BA  0.1156
237       LS       0      76
238       UD    0.31
          *

239       KK  CP  E1  COMBINE  FLOWS AT OUTLET OF E1
240       HC       2
          *

241       KK   RT-A1 ROUTE HYDROGRAPH TO OUTLET OF A1
242       RD    1200  0.0125     .04           TRAP      15       3
          *

243       KK    I-80
244       KM    COMBINE ROUTED FLOWS WITH A1 AT SILVA LANE/I-80
245       HC       4
          *
          *
          *
          * *********   WATERSHED SUBAREA 8    *************
          *
          *
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

246       KK  SA B17 GENERATE HYDOGRAPH FOR SUB-AREA B17
247       PH       1            0.59   1.06   1.77   2.02   2.21   2.60   3.41   4.22
248       BA  0.4136
249       LS       0      74
250       UD    0.32
          *

251       KK  RT-B12 ROUTE HYDROGRAPH FROM B17 TO OUTLET OF B12
252       RD    3900  0.0133     .07          TRAP      6      3
          *

253       KK  SA B13 GENERATE HYDOGRAPH FOR SUB-AREA B13
254       PH       1            0.59   1.06   1.77   2.01    2.2   2.58   3.44   4.31
255       BA  0.2400
256       LS       0      70
257       UD    0.33
          *

258       KK  RT-B12 ROUTE HYDROGRAPH FROM B13 TO OUTLET OF B12
259       RD    4500  0.1510     .08          TRAP      6      3
          *

260       KK  SA B12 GENERATE HYDOGRAPH FOR SUB-AREA B12
261       PH       1            0.54   0.98   1.63   1.87   2.06   2.44   3.22   4.00
262       BA  0.3484
263       LS       0      75
264       UD    0.26
          *

265       KK  CP B12 COMBINE HYDROGRAPH FROM AREAS B12 W/HYDROGRAPHS FROM AREA B13 & B17
266       HC       3
          *

267       KK  RT-B11 ROUTE HYDROGRAPH TO OUTLET OF B11
268       RD    2000  0.1000     .07          TRAP      6      3
          *

269       KK  SA B11 GENERATE HYDOGRAPH FOR SUB-AREA B11
270       PH       1            0.51   0.93   1.56   1.75   1.90   2.21   2.95   3.69
271       BA  0.0777
272       LS       0      76
273       UD    0.24
          *

274       KK  CP B11 COMBINE HYDROGRAPH FROM AREAS B11 W/HYDROGRAPHS FROM AREA B12,13,17
275       HC       2
          *

276       KK  RT-10a ROUTE HYDROGRAPH TO OUTLET OF B10a
277       RD    3100  0.0710     .07          TRAP      6      3
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

278       KK  SAB10a GENERATE HYDOGRAPH FOR SUB-AREA B10a
279       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
280       BA  0.1056
281       LS       0      84
282       UD    0.24
          *

283       KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B11
284       HC       2
          *

285       KK  SA B8a GENERATE HYDOGRAPH FOR SUB-AREA B8a
286       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
287       BA  0.2445
288       LS       0      76
289       UD    0.23
          *

290       KK  RT-B8b ROUTE HYDROGRAPH FROM AREA B8a TO OUTLET OF AREA B8b
291       RD    1100  0.0770     .07           TRAP       6       3
          *

292       KK  SA B8b GENERATE HYDOGRAPH FOR SUB-AREA B8b
293       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    3.02    3.77
294       BA  0.0382
295       LS       0      84
296       UD    0.16
          *

297       KK  SA  B9 GENERATE HYDOGRAPH FOR SUB-AREA B9
298       PH       1            0.50    0.91    1.52    1.72    1.87    2.19    2.93    3.66
299       BA  0.0591
300       LS       0      79
301       UD    0.26
          *

302       KK  CP B8b COMBINE HYDROGRAPH FROM AREAS B9 W/HYDROGRAPHS FROM AREA B6 AND B8
303       HC       3
          *

304       KK   RT-B7 ROUTE HYDROGRAPH FROM AREA B8 TO OUTLET OF AREA B7
305       RD    2200  0.0680     .07           TRAP       6       3
          *

306       KK  SA  B7 GENERATE HYDOGRAPH FOR SUB-AREA B7
307       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
308       BA  0.0240
309       LS       0      78
310       UD    0.21
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

311       KK  CPB10a COMBINE HYDROGRAPH FROM AREAS B7 W/HYDROGRAPHS FROM AREA B6, B8 & B9
312       HC       3
          *

313       KK  RT-10b ROUTE HYDROGRAPH TO OUTLET OF B10b
314       RD     500  0.0500     .07          TRAP       6       3
          *

315       KK  SAB10b GENERATE HYDOGRAPH FOR SUB-AREA B10b
316       PH       1             0.47   0.85   1.41   1.61   1.76   2.08   2.78   3.49
317       BA  0.0360
318       LS       0      87
319       UD    0.10
          *

320       KK  CPB10b COMBINE HYDROGRAPH FROM AREAS B10a W/HYDROGRAPHS FROM AREA B10b
321       HC       2
          *

322       KK     DB3 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 3
323       KM        42"RCP ie 5005 and 8'X 8'RCB ie 5014
324       RS       1    STOR      -1
325       SA     .34    .490    .660    .840   1.04   1.26   1.67
326       SE    5010    5012    5014    5016   5018   5020   5025
327       SQ       0    65.5    92.7   167.8  284.6  428.7  594.9  780.5 1073.4
328       SE    5010    5012    5014    5016   5018   5020   5022   5024   5026
          *

329       KK  RT-10c ROUTE HYDROGRAPH TO OUTLET OF B10c
330       RD     800  0.0563     .07          TRAP       6       3
          *

331       KK  SAB10c GENERATE HYDOGRAPH FOR SUB-AREA B10c
332       PH       1             0.47   0.85   1.41   1.61   1.76   2.08   2.78   3.49
333       BA  0.0126
334       LS       0      87
335       UD    0.10
          *

336       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10b W/HYDROGRAPHS FROM AREA B10c
337       HC       2
          *

338       KK  SA B16 GENERATE HYDOGRAPH FOR SUB-AREA B16
339       PH       1             0.49   0.89   1.48   1.70   1.86   2.19   2.92   3.64
340       BA    .094
341       LS       0      86
342       UD    0.24
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

343       KK  RT- B3 ROUTE HYDROGRAPH FROM B16 TO OUTLET OF B3
344       RD     400  0.0533     .05           TRAP       6       3
          *

345       KK  SA  B3 GENERATE HYDOGRAPH FOR SUB-AREA B3
346       PH       1           0.48    0.87    1.45    1.66    1.82    2.15    2.87    3.60
347       BA    .046
348       LS       0      84
349       UD    0.17
          *

350       KK  CP  B3 COMBINE HYDROGRAPH FROM AREA B3 W/HYDROGRAPH FROM AREA B16
351       HC       2
          *

352       KK     DB1  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 1
353       KM        12"RCP ie 5050
354       RS       1    STOR      -1
355       SA    .063    .101   1.151   1.283   1.425   1.571   1.901
356       SE    5050    5051    5052    5054    5056    5058    5060
357       SQ       0       1       2       3       4       5       6       7       8
358       SE    5050 5050.65 5050.99 5052.03 5053.91 5056.17 5058.88 5059.95 5060.03
          *

359       KK   RT-B5 ROUTE HYDROGRAPH FROM B3 TO confluence W/ B5
360       RD     700  0.0500     .06           TRAP       6       3
          *

361       KK  SA  B6 GENERATE HYDOGRAPH FOR SUB-AREA B6
362       PH       1           0.49    0.89    1.48     1.7    1.87    2.21    2.94    3.66
363       BA    .029
364       LS       0      78
365       UD     .20
          *

366       KK   RT-B5 ROUTE HYDROGRAPH FROM AREA B6 TO OUTLET OF AREA B5
367       RD    2100     .05     .07           TRAP       5       2
          *

368       KK  SA B14 GENERATE HYDOGRAPH FOR SUB-AREA B14
369       PH       1           0.50    0.91    1.52    1.74    1.91    2.26    3.01    3.75
370       BA  0.0877
371       LS       0      78
372       UD    0.22
          *

373       KK   RT-B5 ROUTE HYDROGRAPH FROM B14a TO OUTLET OF B5
374       RD    2325  0.0538    .070           TRAP       5       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

375       KK  SA  B5 GENERATE HYDOGRAPH FOR SUB-AREA B5
376       PH       1            0.49    0.89    1.48    1.69    1.84    2.17    2.87    3.57
377       BA    .078
378       LS       0      80
379       UD    0.23
          *

380       KK   CP B5 COMBINE HYDROGRAPH FROM AREAS B5 AND DB1
381       HC       4
          *

382       KK   RT-B4 ROUTE HYDROGRAPH TO confluence w/ B4
383       RD     900  0.0390     .07          TRAP       6       3
          *

384       KK   SA B4 GENERATE HYDOGRAPH FOR SUB-AREA B4
385       PH       1            0.47    0.85    1.41    1.61    1.76    2.08    2.78    3.49
386       BA  0.0360
387       LS       0      85
388       UD    0.14
          *

389       KK  CP  B4 COMBINE HYDROGRAPH FROM AREA B4 W/HYDROGRAPH FROM AREA B3 AND B1S
390       HC       2
          *

391       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
392       RD     950  0.0260     .07          TRAP       6       3
          *

393       KK  SA B2a GENERATE HYDOGRAPH FOR SUB-AREA B2a
394       PH       1            0.50    0.91    1.52    1.73    1.89    2.21    2.98    3.75
395       BA  0.0523
396       LS       0      86
397       UD    0.12
          *

398       KK  RT-B2b ROUTE HYDROGRAPH TO OUTLET OF B2b
399       RD    1800  0.0890     .07          TRAP       6       3
          *

400       KK  SA B2b GENERATE HYDOGRAPH FOR SUB-AREA B2b
401       PH       1            0.48    0.87    1.45    1.64    1.79    2.10    2.82    3.53
402       BA  0.1255
403       LS       0      86
404       UD    0.15
          *

405       KK  CP B2b COMBINE HYDROGRAPH FROM AREA B2a W/HYDROGRAPH FROM AREA B2b
406       HC       2
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

407       KK     DB2  ROUTE HYDROGRAPH THROUGH DETENTION BASIN 2
408       KM        36" RCP ie 5045
409       RS       1    STOR      -1
410       SA    .027    .149    .360    .658
411       SE    5045    5050    5055    5060
412       SQ       0      10      20      30      40      50      60      70      80      90
413       SQ     120   128.4
414       SE    5045 5046.23 5046.98 5047.58 5048.18 5048.88 5049.73 5050.75 5051.96 5053.32
415       SE  5054.8    5060
          *

416       KK  RT-B2c ROUTE HYDROGRAPH TO OUTLET OF B2c
417       RD    2100  0.0430     .07           TRAP       6       3
          *

418       KK  SA B2c GENERATE HYDOGRAPH FOR SUB-AREA B2c
419       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
420       BA  0.0592
421       LS       0      84
422       UD    0.19
          *

423       KK  CP B2c COMBINE HYDROGRAPH FROM AREAS B2c W/HYDROGRAPHS FROM AREA B2b,B3 AND B4
424       HC       3
          *

425       KK  CPB10c COMBINE HYDROGRAPH FROM AREAS B10 W/HYDROGRAPHS FROM AREA B2 AND B4
426       HC       2
          *

427       KK   RT-B1 ROUTE HYDROGRAPH TO OUTLET OF B1
428       RD    1400  0.0286     .07           TRAP       6       3
          *

429       KK  SA  B1 GENERATE HYDOGRAPH FOR SUB-AREA B1
430       PH       1            0.45    0.83    1.38    1.57    1.72    2.03    2.73    3.42
431       BA  0.0527
432       LS       0      83
433       UD    0.15
          *

434       KK  CP  B1 COMBINE HYDROGRAPH FROM AREA B1 W/HYDROGRAPHS FROM AREA B2,B4 AND B10
435       HC       2
          *
          *
          * *********   WATERSHED SUBAREA C   **************
          *
          *
          *
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

436       KK  SA C10 GENERATE HYDOGRAPH FOR SUB-AREA C10
437       PH       1            0.62    1.13    1.88    2.12    2.29    2.67    3.53    4.40
438       BA  0.6580
439       LS       0      77
440       UD    0.33
          *

441       KK  RT-C11 ROUTE HYDROGRAPH TO OUTLET OF C11
442       RD    4800  0.1583     .07          TRAP       6       3
          *

443       KK  SA C11 GENERATE HYDOGRAPH FOR SUB-AREA C11
444       PH       1            0.57    1.04    1.74    1.96    2.13    2.49    3.24    4.00
445       BA   .3156
446       LS       0      80
447       UD    0.19
          *

448       KK  CP C11 COMBINE HYDROGRAPH FROM AREA C11 W/HYDROGRAPH FROM AREA C10
449       HC       2
          *

450       KK   RT-C7 ROUTE HYDROGRAPH TO OUTLET OF C7
451       RD    5500  0.1091     .07          TRAP       6       3
          *

452       KK  SA  C7 GENERATE HYDOGRAPH FOR SUB-AREA C7
453       PH       1            0.53    0.96    1.59    1.79    1.94    2.26    2.96    3.66
454       BA   .3359
455       LS       0      80
456       UD    0.26
          *

457       KK  CP  C7 COMBINE HYDROGRAPH FROM AREA C7 W/HYDROGRAPH FROM AREA C10 & C11
458       HC       2
          *

459       KK   RT-C5 ROUTE HYDROGRAPH TO OUTLET OF C5
460       RD    3000  0.0933     .07          TRAP       6       3
          *

461       KK  SA  C5 GENERATE HYDOGRAPH FOR SUB-AREA C5
462       PH       1            0.49    0.89    1.48    1.66    1.80    2.08    2.77    3.46
463       BA  0.1528
464       LS       0      78
465       UD    0.27
          *

466       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C7, 10 & C11
467       HC       2
          *
```

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

468       KK  SA  C8 GENERATE HYDOGRAPH FOR SUB-AREA C8
469       PH       1           0.53    0.96    1.59    1.80    1.96    2.28    3.02    3.75
470       BA  0.2380
471       LS       0      80
472       UD    0.23
          *

473       KK   RT-C6 ROUTE HYDROGRAPH TO OUTLET OF C6
474       RD    3200  0.0750     .07           TRAP       6       3
          *

475       KK  SA  C6 GENERATE HYDOGRAPH FOR SUB-AREA C6
476       PH       1           0.49    0.89    1.48    1.68    1.83    2.15    2.85    3.55
477       BA  0.0956
478       LS       0      77
479       UD    0.25
          *

480       KK  CP  C6 COMBINE HYDROGRAPH FROM AREA C8 W/HYDROGRAPH FROM AREA C6
481       HC       2
          *

482       KK  CP  C5 COMBINE HYDROGRAPH FROM AREA C5 W/HYDROGRAPH FROM AREA C6
483       HC       2
          *

484       KK  RT- C9 ROUTE HYDROGRAPH TO Confluence w/ C9
485       RD    1100   0.055     .07           TRAP       6       3
          *

486       KK  SA  C9 GENERATE HYDOGRAPH FOR SUB-AREA C9
487       PH       1           0.47    0.85    1.41    1.59    1.73    2.01    2.69    3.37
488       BA  0.1147
489       LS       0      75
490       UD    0.27
          *

491       KK  CP  C9 COMBINE HYDROGRAPH at confluence of C5 and C9
492       HC       2
          *

493       KK  RT-C4b ROUTE HYDROGRAPH TO OUTLET OF C4b
494       RD    1200  0.0580     .07           TRAP       6       3
          *

495       KK  SA C4a GENERATE HYDOGRAPH FOR SUB-AREA C4a
496       PH       1           0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
497       BA  0.0930
498       LS       0      79
499       UD    0.20
          *
```

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

500       KK  SA C4b GENERATE HYDOGRAPH FOR SUB-AREA C4b
501       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.72    3.40
502       BA  0.0384
503       LS       0      77
504       UD    0.18
          *

505       KK  CP C4b COMBINE HYDROGRAPH FROM AREA C4b W/HYDROGRAPH FROM AREA C5 AND C9 & C4a
506       HC       3
          *

507       KK    DB11 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 11
508       KM           36"RCP ie 5085 and 8'x7' at 5106
509       RS       1    STOR      -1
510       SA     .02    0.14    0.32    0.61   1.020    1.48    2.14    2.92
511       SE    5085    5090    5095    5100    5105    5110    5115    5120
512       SQ       0    59.0    83.4   102.1   117.9   127.3   136.1   144.4   152.2   210.6
513       SQ   310.7   438.1   587.4   765.6   940.8  1039.2  1245.7
514       SE    5085    5088    5091    5094    5097    5099    5101    5103    5105    5107
515       SE    5109    5111    5113    5115    5117    5118    5120
          *

516       KK   RT-C3 ROUTE HYDROGRAPH TO OUTLET OF C3A
517       RD    1200     .04     .07            TRAP       6       3
          *

518       KK     C3A GENERATE HYDOGRAPH FOR SUB-AREA C3A
519       PH       1            0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
520       BA     .12
521       LS       0      76
522       UD     .27
          *

523       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C3 W/HYDROGRAPH FROM HYDROGRAPH  CP C4
524       HC       2
          *

525       KK     DB4 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 4
526       KM         10'x6' RCB ie 5020
527       RS       1    STOR      -1
528       SA    .270   1.030   1.430   2.340
529       SE    5020    5025    5030    5035
530       SQ       0      90     180     270     360     400     540     630     720     810
531       SQ     900     972
532       SE    5020 5022.12 5023.38 5024.49 5025.51 5025.96 5027.61 5028.81 5030.18 5031.72
533       SE  5033.5 5035.00
          *

534       KK  RT-C3B ROUTE HYDROGRAPH TO OUTLET OF C3B
535       RD     950     .05     .07            TRAP       6       3
          *
```

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

536       KK     C3B GENERATE HYDOGRAPH FOR SUB-AREA C3B
537       PH       1           0.45    0.83    1.38    1.55    1.67    1.94    2.60    3.26
538       BA      .1
539       LS       0      78
540       UD     .30
          *

541       KK   C-C3B COMBINE HYDROGRAPHS AT OUTLET OF C3B
542       HC       2
          *

543       KK  SA  C2 GENERATE HYDOGRAPH FOR SUB-AREA C2
544       PH       1           0.44    0.80    1.34    1.49    1.61    1.85    2.53    3.20
545       BA  0.1705
546       LS       0      78
547       UD    0.25
          *

548       KK  CP  C3 COMBINE HYDROGRAPH FROM AREA C2 W/HYDROGRAPH CP C3
549       HC       2
          *

550       KK   RT-C1 ROUTE HYDROGRAPH TO OUTLET OF C1
551       RD    1500  0.0400     .07           TRAP       6       3
          *

552       KK  SA  C1 GENERATE HYDOGRAPH FOR SUB-AREA C1
553       PH       1           0.44    0.80    1.34    1.53    1.67    1.97    2.65    3.33
554       BA  0.0809
555       LS       0      79
556       UD    0.24
          *

557       KK  CP  C1 COMBINE HYDROGRAPH FROM AREA C1 W/HYDROGRAPH CP C3
558       HC       2
          *

559       KK  CP C81 COMBINE HYDROGRAPH CP C1 W/HYDROGRAPH CP B1
560       HC       2
          *

561       KK   RT-D1 ROUTE HYDROGRAPH TO OUTLET OF D1
562       RD    3200  0.0500     .07           TRAP       6       2
          *

563       KK  SA  D1 GENERATE HYDOGRAPH FOR SUB-AREA D1
564       PH       1           0.45    0.83    1.38    1.56    1.70    1.99    2.69    3.40
565       BA  0.2191
566       LS       0      78
567       UD    0.24
          *
```

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

568       KK  MOGULE COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
569       KM        MOGUL MEADOWS EAST CHANNEL DISCHARGE
570       HC       2
          *
          *
          *
          * *********    WATERSHED SUBAREA F    **************
          *
          *

571       KK  SA F1A GENERATE HYDOGRAPH FOR SUB-AREA F1A
572       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
573       BA   .0726
574       LS       0      82
575       UD     .13
          *

576       KK    DB13 ROUTE HYDROGRAPH THROUGH DETENTION BASIN 13
577       KM          10" RCP fe 5066
578       RS       1    STOR      -1
579       SA    .238    .367    .519    .703    .919   1.184
580       SE    5066    5068    5070    5072    5074    5075
581       SQ       0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0     9.0
582       SQ    10.0
583       SE  5066.0  5066.6  5067.1  5067.7  5068.6  5069.9  5071.4  5074.0 5075.02 5075.03
584       SE  5075.1
          *

585       KK  RT-F1B ROUTE HYDROGRAPH TO OUTLET OF F1B
586       RD    2700     .11     .07            TRAP      10       4
          *

587       KK  SA F1B GENERATE HYDOGRAPH FOR SUB-AREA F1B
588       PH       1            0.47    0.85    1.41    1.60    1.74    2.03    2.75    3.46
589       BA     .11
590       LS       0      79
591       UD     .20
          *

592       KK      F1 Combine Hydrographs at F1
593       HC       2
          *

594       KK  SA  F2 GENERATE HYDOGRAPH FOR SUB-AREA F2
595       PH       1            0.48    0.87    1.45    1.64    1.78    2.08    2.80    3.53
596       BA  0.1352
597       LS       0      79
598       UD    0.25
          *
```

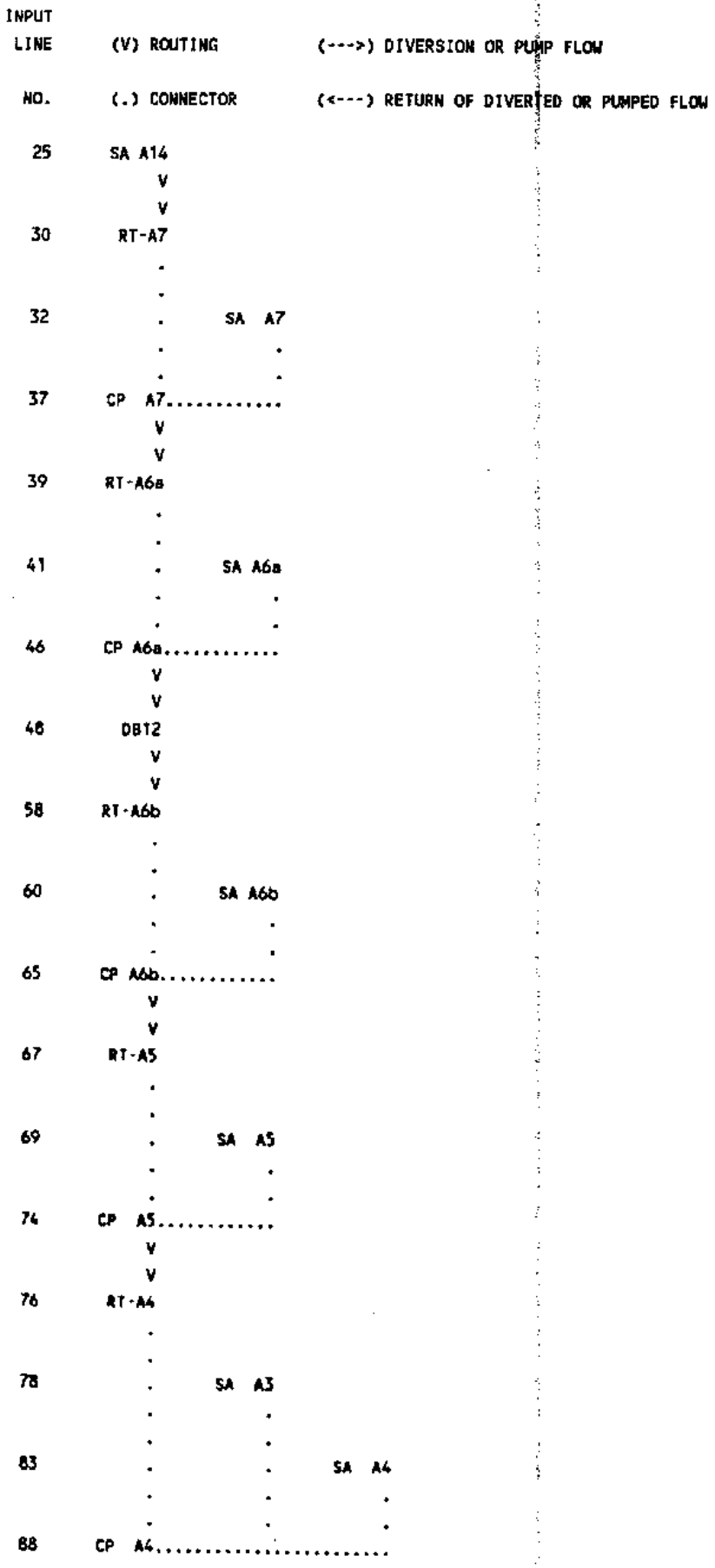
```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

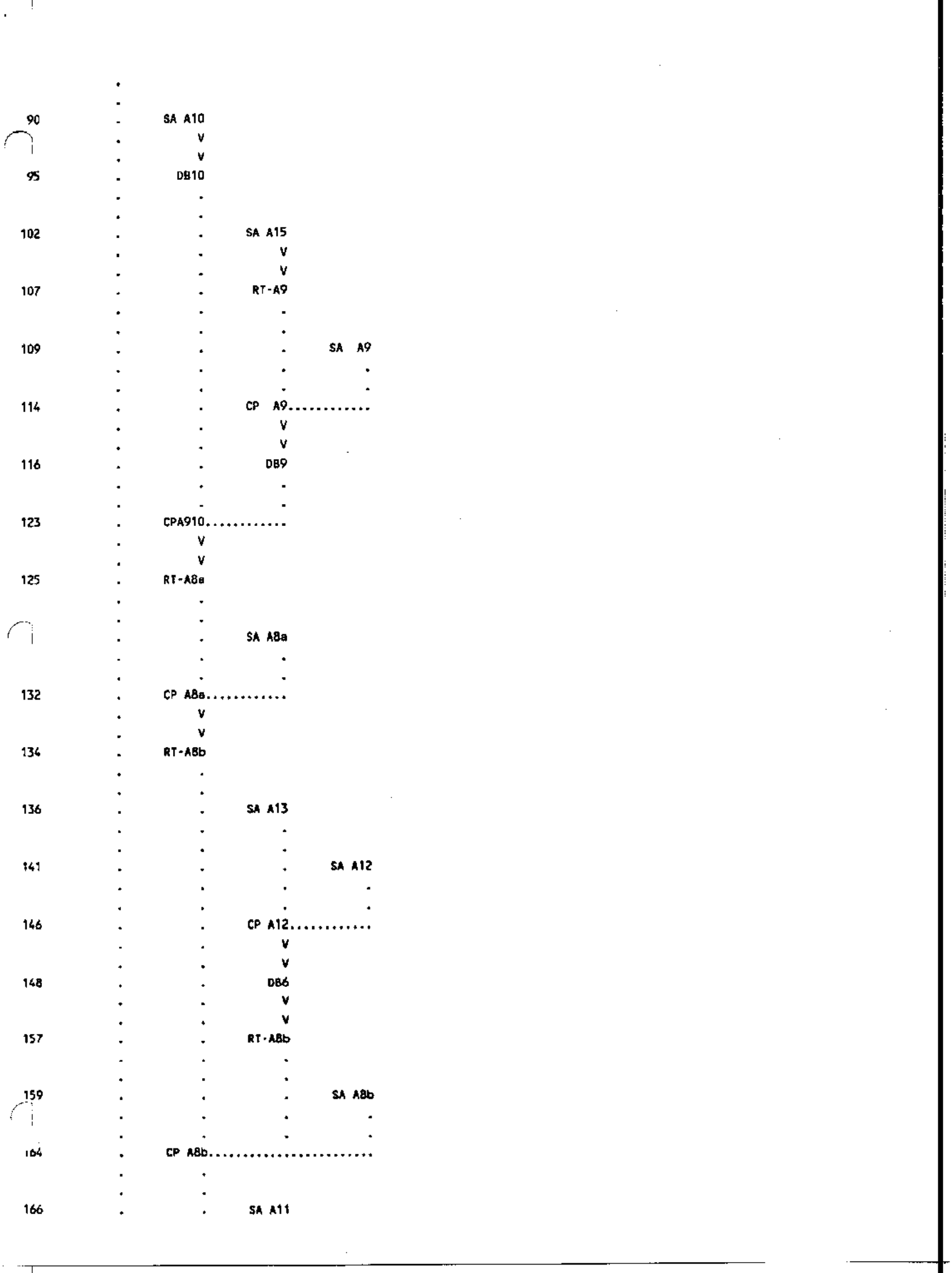
  599     KK  MOGULW COMBINE HYDROGRAPH FROM AREA D1 W/HYDROGRAPH CP CB1 AT I-80 & W. 4TH ST
  600     KM         MOGUL MEADOWS EAST CHANNEL DISCHARGE
  601     KC       2
  602     ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

(V) ROUTING
(.) CONNECTOR
(---->) DIVERSION OR PUMP FLOW
(<----) RETURN OF DIVERTED OR PUMPED FLOW

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SA A10
95
DB10
102
SA A15
107
RT-A9
109
SA A9
114
CP A9
116
DB9
123
CPA910
125
RT-A8a
SA A8a
132
CP A8a
134
RT-A8b
136
SA A13
141
SA A12
146
CP A12
148
DB6
157
RT-A8b
159
SA A8b
164
CP A8b
166
SA A11

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                .           .           .
                .           .           .
171         CP4811.....................
                V
                V
173         RT-A2
                .
                .
175             .       SA  A2
                .           .
                .           .
180         CP  A2.............
                V
                V
182         RT-A1
                V
                V
184         RT-A1
                .
                .
186             .       SA  A1
                .           .
                .           .
191             .           .   SA  E6
                .           .       V
                .           .       V
196             .           .   RT-E56
                .           .       .
                .           .       .
198             .           .       .       SA  E5
                .           .       .           V
                .           .       .           V
203             .           .       .       RT-E56
                .           .       .           .
                .           .       .           .
205             .           .   CP E56.............
                .           .       V
                .           .       V
207             .           .   RT-E4
                .           .       .
                .           .       .
209             .           .       .           E4
                .           .       .           .
                .           .       .           .
214             .           .    C-E4.............
                .           .       V
                .           .       V
216             .           .   RT-E3
                .           .       .
                .           .       .
218             .           .       .       SA  E3
                .           .       .           .
                .           .       .           .
223             .           .   CP  E3.............
                .           .       V
                .           .       V
225             .           .   RT-A1
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                .           .       .
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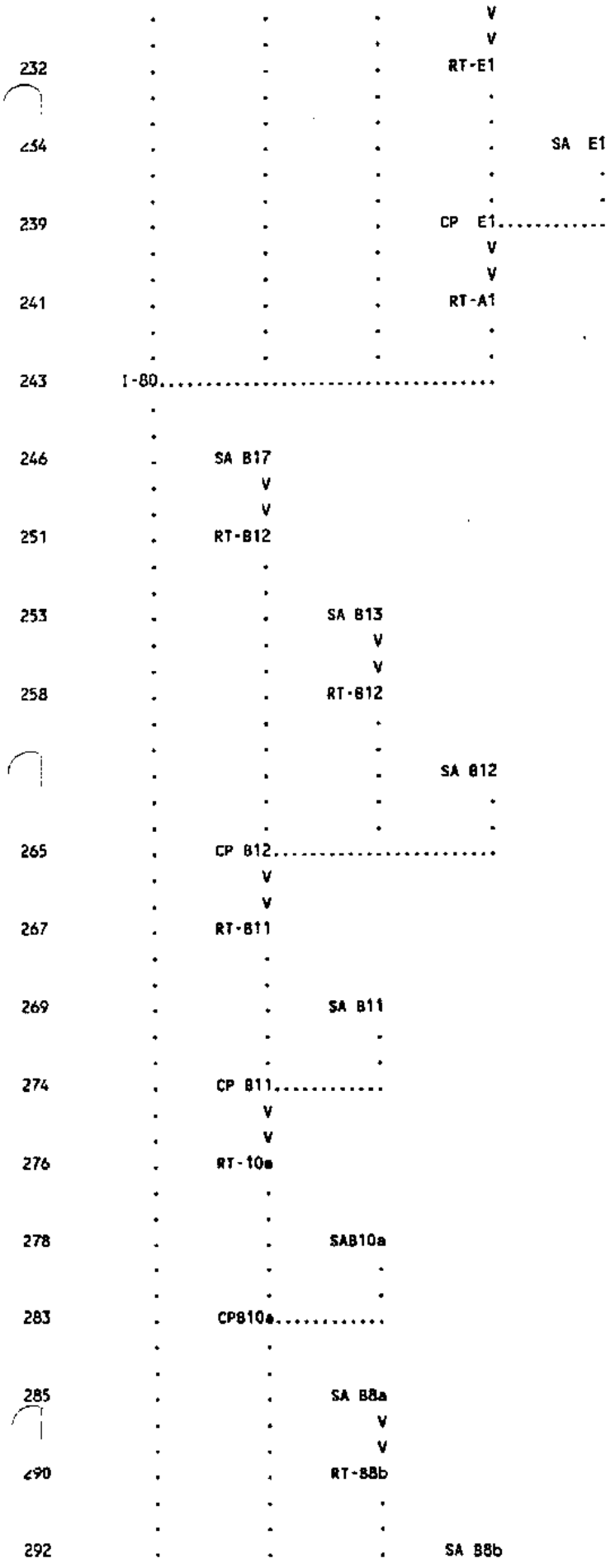
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CP E1
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SA B17
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SA B11
CP B11
RT-10a
SAB10a
CP810a
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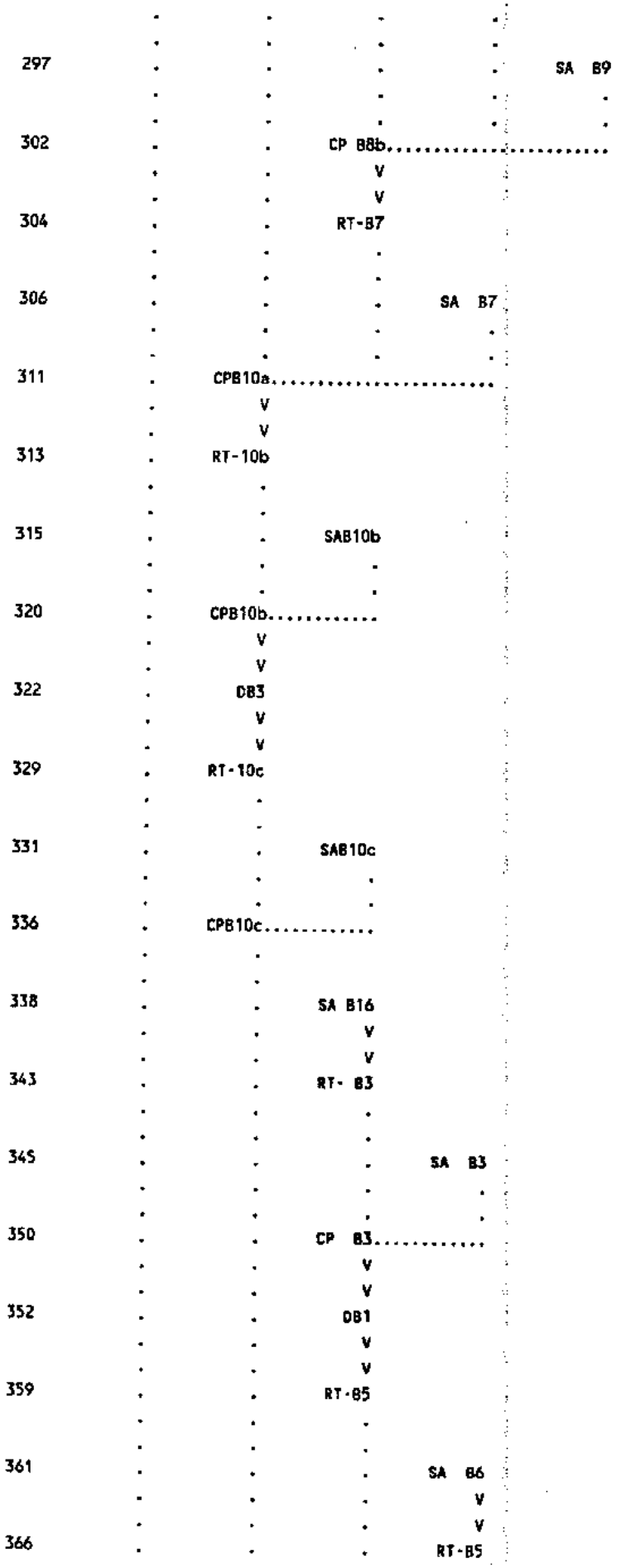
RT-B8b
SA B8b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RT-B7
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SA B7
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CPB10a
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RT-10b
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CPB10b
322
DB3
329
RT-10c
331
SAB10c
336
CPB10c
338
SA B16
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RT- B3
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SA B3
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CP B3
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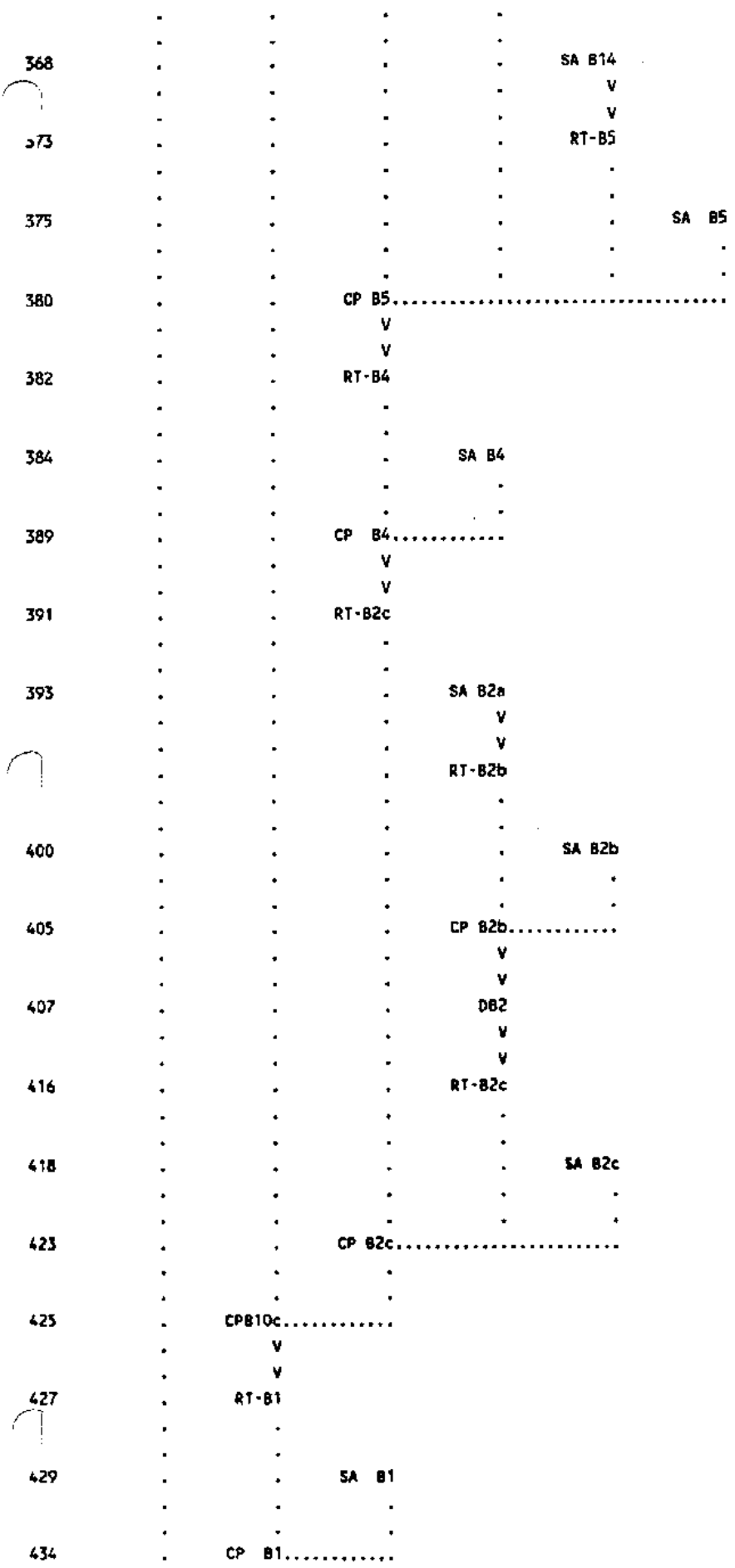
DB1
359
RT-B5
361
SA B6
366
RT-B5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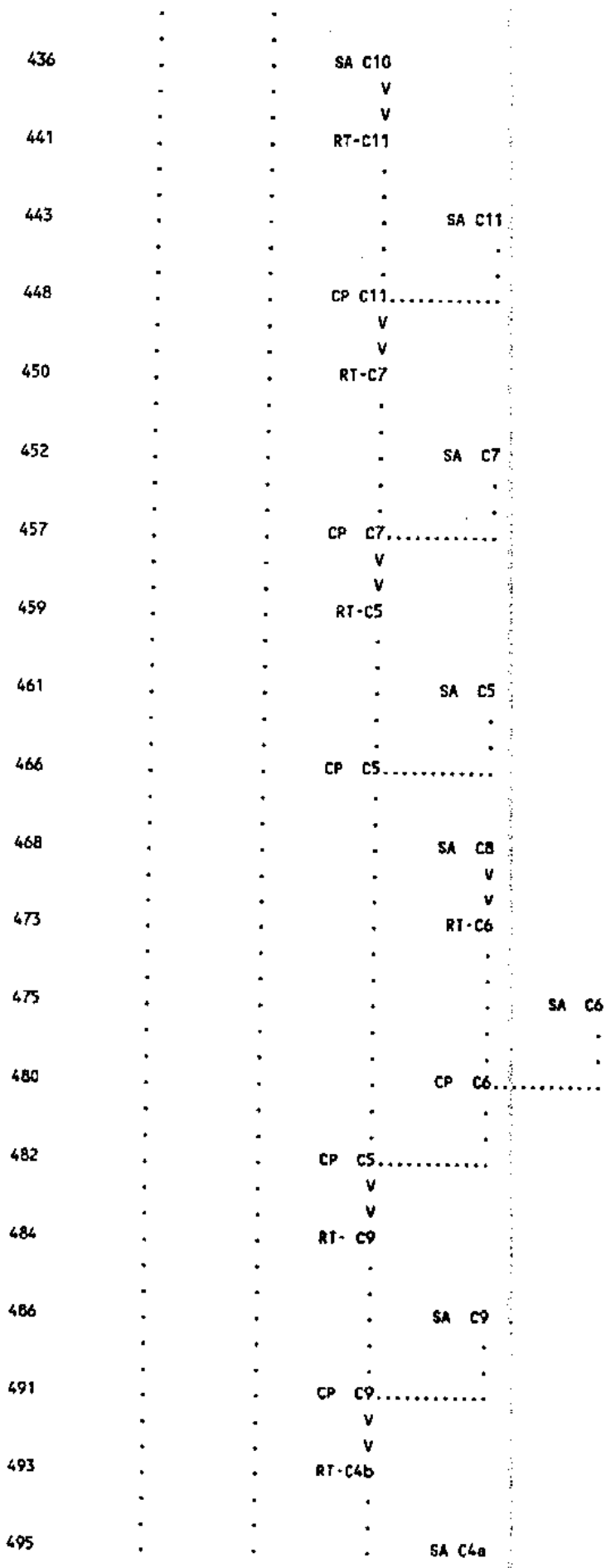
SA B14
RT-B5
SA B5
CP B5
RT-B4
SA B4
CP B4
RT-B2c
SA B2a
RT-B2b
SA B2b
CP B2b
DB2
RT-B2c
SA B2c
CP B2c
CPB10c
RT-B1
SA B1
CP B1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SA C10
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RT-C11
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SA C11
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CP C11
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RT-C7
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SA C7
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RT-C5
461
SA C5
466
CP C5
468
SA C8
473
RT-C6
475
SA C6
480
CP C6
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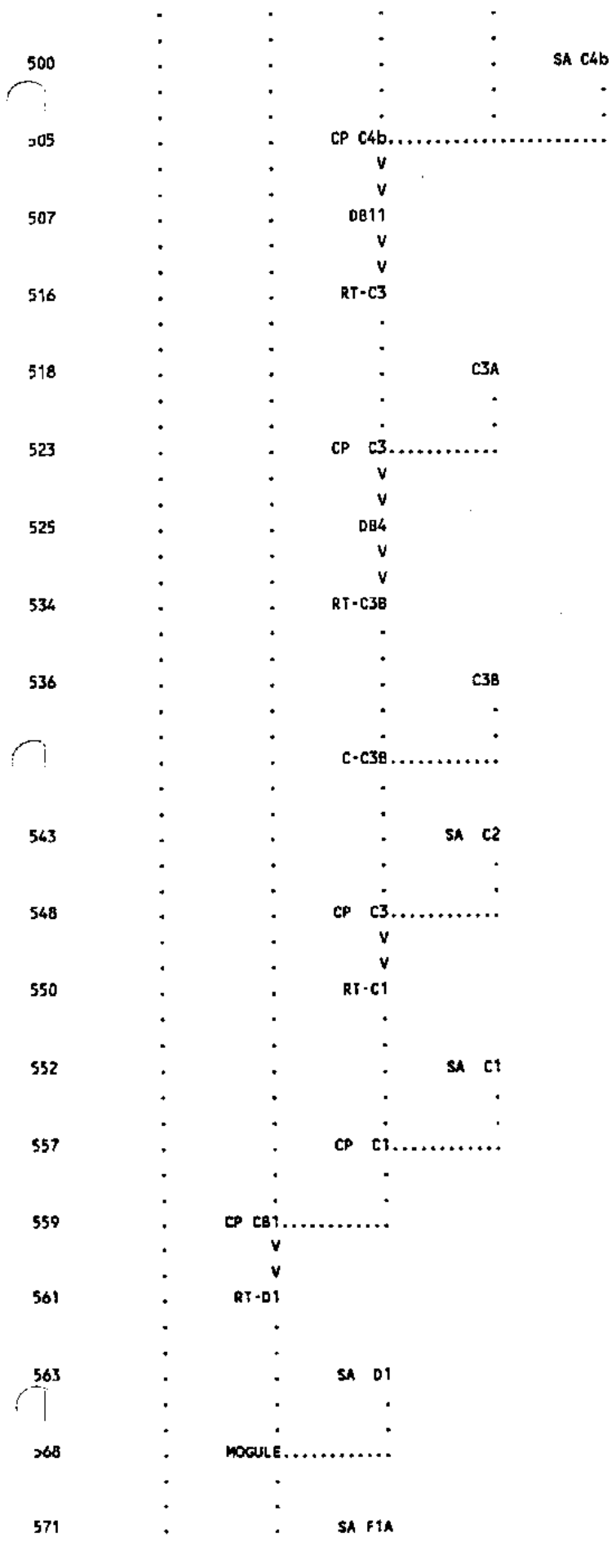
486
SA C9
491
CP C9
493
RT-C4b
495
SA C4a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CP C4b
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C3A
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CP C3
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DB4
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RT-C3B
536
C3B
C-C3B
543
SA C2
548
CP C3
550
RT-C1
552
SA C1
557
CP C1
559
CP CB1
561
RT-D1
563
SA D1
568
MODULE
571
SA F1A

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                .       .       V
576             .       .     DB13
                .       .       V
                .       .       V
585             .       .   RT-F1B
                .       .       .
                .       .       .
587             .       .       .       SA F1B
                .       .       .         .
                .       .       .         .
592             .       .     F1.............
                .       .       .
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594             .       .       .       SA  F2
                .       .       .         .
                .       .       .         .
599             .       .   MOGULW.............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/06/98  TIME  14:41:06   *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*         (916) 551-1748                *
*                                       *
*****************************************
```

SOMERSETT PLANNED UNIT DEVELOPEMENT
DRAINAGE MASTER PLAN HYDROLOGIC ANALYSIS
"PHASE I TO IV" 100 YEAR MODEL
DEVELOPED CONDITION WITH DETENTION BASINS
Washoe County, Nevada

100-Year Analysis
- For offsite areas
- Watersheds measured from USGS 7.5 Minute Quads
- Rainfall entered using hypothetical storm option
- Rainfall data estimated using revised NOAA precipitation data
- Curve number estimates based on Sage-Grass, as described in TR-55 (SCS, 1986) or NEH-4 (SCS, 1972)
- Lag time estimates are based on USBR methods (Sierra Nevada Basin n) as modified for the Washoe County Hydrologic Criteria Manual.

File: SSP4-100.DAT
APRIL 1998
Project No. 3011

WRC NEVADA, INC.
1575 DELUCCHI LN STE.207A
Reno, Nevada 89502
(702)332-3737,FAX 332-3740

24 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	1441	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	4 0	ENDING DATE
NDTIME	0000	ENDING TIME
ICENT	19	CENTURY MARK

COMPUTATION INTERVAL 0.05 HOURS
TOTAL TIME BASE 72.00 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

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	SA A14	343.	12.40	59.	20.	7.	0.41		
ROUTED TO	RT-A7	345.	12.50	59.	20.	7.	0.41		
HYDROGRAPH AT	SA A7	293.	12.35	49.	16.	5.	0.30		
2 COMBINED AT	CP A7	612.	12.45	108.	36.	12.	0.71		
ROUTED TO	RT-A6a	610.	12.45	108.	36.	12.	0.71		
HYDROGRAPH AT	SA A6a	79.	12.15	9.	3.	1.	0.06		
2 COMBINED AT	CP A6a	639.	12.45	117.	39.	13.	0.77		
ROUTED TO	DB12	515.	12.60	114.	39.	13.	0.77	5450.40	12.60
ROUTED TO	RT-A6b	527.	12.65	114.	39.	13.	0.77		
HYDROGRAPH AT	SA A6b	72.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP A6b	540.	12.65	122.	42.	14.	0.82		
ROUTED TO	RT-A5	530.	12.70	122.	42.	14.	0.82		
HYDROGRAPH AT	SA A5	198.	12.20	24.	8.	3.	0.13		
2 COMBINED AT	CP A5	569.	12.70	145.	50.	17.	0.95		
ROUTED TO	RT-A4	578.	12.75	145.	50.	17.	0.95		
HYDROGRAPH AT	SA A3	144.	12.25	19.	6.	2.	0.13		
HYDROGRAPH AT	SA A4	20.	12.25	3.	1.	0.	0.04		
3 COMBINED AT	CP A4	611.	12.75	167.	57.	19.	1.12		
HYDROGRAPH AT	SA A10	294.	12.35	47.	16.	5.	0.28		
ROUTED TO	DB10	67.	12.95	47.	16.	5.	0.28	5400.47	12.95
HYDROGRAPH AT	SA A15	173.	12.35	27.	9.	3.	0.16		
ROUTED TO	RT-A9	174.	12.50	27.	9.	3.	0.16		
HYDROGRAPH AT	SA A9	344.	12.40	59.	19.	6.	0.36		
2 COMBINED AT	CP A9	500.	12.45	86.	29.	10.	0.52		
ROUTED TO	DB9	473.	12.50	86.	29.	10.	0.52	5390.69	12.50
2 COMBINED AT	CPA910	538.	12.50	133.	44.	15.	0.80		

ROUTED TO	RT-A8a	536.	12.55	133.	44.	15.	0.80		
HYDROGRAPH AT	SA A8a	64.	12.25	8.	3.	1.	0.05		
2 COMBINED AT	CP A8a	560.	12.55	141.	47.	16.	0.86		
ROUTED TO	RT-A8b	558.	12.60	141.	47.	16.	0.86		
HYDROGRAPH AT	SA A13	198.	12.35	31.	10.	3.	0.19		
HYDROGRAPH AT	SA A12	63.	12.25	9.	3.	1.	0.06		
2 COMBINED AT	CP A12	260.	12.30	39.	13.	4.	0.25		
ROUTED TO	DB6	253.	12.35	39.	13.	4.	0.25	5196.03	12.35
ROUTED TO	RT-A8b	258.	12.45	39.	13.	4.	0.25		
HYDROGRAPH AT	SA A8b	139.	12.25	19.	6.	2.	0.14		
3 COMBINED AT	CP A8b	833.	12.50	198.	66.	22.	1.25		
HYDROGRAPH AT	SA A11	66.	12.40	11.	4.	1.	0.10		
3 COMBINED AT	CP4811	1353.	12.75	377.	127.	42.	2.46		
ROUTED TO	RT-A2	1344.	12.80	377.	127.	42.	2.46		
HYDROGRAPH AT	SA A2	152.	12.35	25.	8.	3.	0.20		
2 COMBINED AT	CP A2	1413.	12.65	401.	135.	45.	2.66		
ROUTED TO	RT-A1	1411.	12.70	401.	135.	45.	2.66		
ROUTED TO	RT-A1	1413.	12.75	401.	135.	45.	2.66		
HYDROGRAPH AT	SA A1	71.	12.40	12.	4.	1.	0.11		
HYDROGRAPH AT	SA E6	22.	12.30	3.	1.	0.	0.04		
ROUTED TO	RT-E56	22.	12.40	3.	1.	0.	0.04		
HYDROGRAPH AT	SA E5	115.	12.30	18.	6.	2.	0.12		
ROUTED TO	RT-E56	114.	12.40	18.	6.	2.	0.12		
2 COMBINED AT	CP E56	137.	12.40	21.	7.	2.	0.17		
ROUTED TO	RT-E4	142.	12.60	21.	7.	2.	0.17		
HYDROGRAPH AT	E4	289.	12.40	53.	18.	6.	0.42		
2 COMBINED AT	C-E4	388.	12.55	74.	25.	8.	0.59		
ROUTED TO	RT-E3	349.	12.80	73.	25.	8.	0.59		
HYDROGRAPH AT	SA E3	84.	12.30	13.	4.	1.	0.12		
2 COMBINED AT	CP E3	375.	12.80	85.	29.	10.	0.71		

ROUTED TO	RT-A1	373.	12.80	85.	29.	10.	0.71
HYDROGRAPH AT	SA E2	39.	12.50	9.	3.	1.	0.17
ROUTED TO	RT-E1	39.	12.70	9.	3.	1.	0.17
HYDROGRAPH AT	SA E1	77.	12.35	13.	4.	1.	0.12
2 COMBINED AT	CP E1	90.	12.55	21.	7.	2.	0.28
ROUTED TO	RT-A1	91.	12.60	21.	7.	2.	0.28
4 COMBINED AT	I-80	1896.	12.75	519.	176.	59.	3.77
HYDROGRAPH AT	SA B17	345.	12.40	60.	20.	7.	0.41
ROUTED TO	RT-B12	344.	12.55	60.	20.	7.	0.41
HYDROGRAPH AT	SA B13	166.	12.40	30.	10.	3.	0.24
ROUTED TO	RT-B12	166.	12.50	30.	10.	3.	0.24
HYDROGRAPH AT	SA B12	303.	12.30	47.	16.	5.	0.35
3 COMBINED AT	CP B12	710.	12.50	137.	45.	15.	1.00
ROUTED TO	RT-B11	707.	12.55	137.	45.	15.	1.00
HYDROGRAPH AT	SA B11	66.	12.30	10.	3.	1.	0.08
2 COMBINED AT	CP B11	745.	12.50	146.	48.	16.	1.08
ROUTED TO	RT-10a	748.	12.60	146.	48.	16.	1.08
HYDROGRAPH AT	SAB10a	112.	12.30	16.	5.	2.	0.11
2 COMBINED AT	CPB10a	798.	12.55	162.	54.	18.	1.19
HYDROGRAPH AT	SA B8a	219.	12.30	31.	10.	3.	0.24
ROUTED TO	RT-B8b	218.	12.30	31.	10.	3.	0.24
HYDROGRAPH AT	SA B8b	59.	12.20	7.	2.	1.	0.04
HYDROGRAPH AT	SA B9	54.	12.30	8.	3.	1.	0.06
3 COMBINED AT	CP B8b	317.	12.30	46.	15.	5.	0.34
ROUTED TO	RT-B7	319.	12.35	46.	15.	5.	0.34
HYDROGRAPH AT	SA B7	21.	12.25	3.	1.	0.	0.02
3 COMBINED AT	CPB10a	1022.	12.55	210.	70.	23.	1.55
ROUTED TO	RT-10b	1021.	12.55	210.	70.	23.	1.55
HYDROGRAPH AT	SAB10b	63.	12.10	6.	2.	1.	0.04
2 COMBINED AT	CPB10b	1032.	12.55	216.	72.	24.	1.59

ROUTED TO	DB3	914.	12.70	214.	72.	24.	1.59	5024.91	12.70
ROUTED TO	RT-10c	913.	12.70	214.	72.	24.	1.59		
HYDROGRAPH AT	SAB10c	22.	12.10	2.	1.	0.	0.01		
2 COMBINED AT	CPB10c	915.	12.70	216.	73.	24.	1.60		
HYDROGRAPH AT	SA B16	115.	12.30	16.	6.	2.	0.09		
ROUTED TO	RT- B3	115.	12.30	16.	6.	2.	0.09		
HYDROGRAPH AT	SA B3	61.	12.20	7.	3.	1.	0.05		
2 COMBINED AT	CP B3	170.	12.25	24.	8.	3.	0.14		
ROUTED TO	DB1	6.	18.50	6.	5.	3.	0.14	5058.71	18.60
ROUTED TO	RT-B5	6.	18.45	6.	5.	3.	0.14		
HYDROGRAPH AT	SA B6	28.	12.25	4.	1.	0.	0.03		
ROUTED TO	RT-B5	28.	12.35	4.	1.	0.	0.03		
HYDROGRAPH AT	SA B14	85.	12.25	12.	4.	1.	0.09		
ROUTED TO	RT-B5	85.	12.35	12.	4.	1.	0.09		
HYDROGRAPH AT	SA B5	75.	12.25	11.	4.	1.	0.08		
4 COMBINED AT	CP B5	187.	12.35	32.	14.	6.	0.33		
ROUTED TO	RT-B4	186.	12.35	32.	14.	6.	0.33		
HYDROGRAPH AT	SA B4	51.	12.15	6.	2.	1.	0.04		
2 COMBINED AT	CP B4	213.	12.35	38.	16.	6.	0.37		
ROUTED TO	RT-B2c	212.	12.40	38.	16.	6.	0.37		
HYDROGRAPH AT	SA B2a	93.	12.15	9.	3.	1.	0.05		
ROUTED TO	RT-B2b	94.	12.20	9.	3.	1.	0.05		
HYDROGRAPH AT	SA B2b	186.	12.20	21.	7.	2.	0.13		
2 COMBINED AT	CP B2b	280.	12.20	30.	10.	3.	0.18		
ROUTED TO	DB2	126.	12.40	30.	10.	3.	0.18	5058.54	12.40
ROUTED TO	RT-B2c	128.	12.45	30.	10.	3.	0.18		
HYDROGRAPH AT	SA B2c	70.	12.20	9.	3.	1.	0.06		
3 COMBINED AT	CP B2c	388.	12.35	77.	29.	11.	0.61		
2 COMBINED AT	CPB10c	1169.	12.65	292.	102.	35.	2.21		
ROUTED TO	RT-B1	1167.	12.70	292.	102.	35.	2.21		

HYDROGRAPH AT	SA B1	65.	12.20	8.	3.	1.	0.05		
2 COMBINED AT	CP B1	1178.	12.70	299.	104.	36.	2.26		
HYDROGRAPH AT	SA C10	675.	12.40	114.	38.	13.	0.66		
ROUTED TO	RT-C11	678.	12.45	114.	38.	13.	0.66		
HYDROGRAPH AT	SA C11	423.	12.25	53.	17.	6.	0.32		
2 COMBINED AT	CP C11	934.	12.40	166.	55.	18.	0.97		
ROUTED TO	RT-C7	937.	12.45	166.	55.	18.	0.97		
HYDROGRAPH AT	SA C7	335.	12.30	49.	16.	5.	0.34		
2 COMBINED AT	CP C7	1202.	12.45	215.	71.	24.	1.31		
ROUTED TO	RT-C5	1202.	12.50	215.	71.	24.	1.31		
HYDROGRAPH AT	SA C5	120.	12.30	18.	6.	2.	0.15		
2 COMBINED AT	CP C5	1301.	12.45	233.	77.	26.	1.46		
HYDROGRAPH AT	SA C8	256.	12.25	36.	12.	4.	0.24		
ROUTED TO	RT-C6	259.	12.35	36.	12.	4.	0.24		
HYDROGRAPH AT	SA C6	77.	12.30	11.	4.	1.	0.10		
2 COMBINED AT	CP C6	333.	12.35	47.	16.	5.	0.33		
2 COMBINED AT	CP C5	1590.	12.45	280.	92.	31.	1.80		
ROUTED TO	RT- C9	1590.	12.45	280.	92.	31.	1.80		
HYDROGRAPH AT	SA C9	71.	12.35	11.	4.	1.	0.11		
2 COMBINED AT	CP C9	1650.	12.45	292.	96.	32.	1.91		
ROUTED TO	RT-C4b	1637.	12.45	292.	96.	32.	1.91		
HYDROGRAPH AT	SA C4a	85.	12.25	11.	4.	1.	0.09		
HYDROGRAPH AT	SA C4b	33.	12.20	4.	1.	0.	0.04		
3 COMBINED AT	CP C4b	1704.	12.45	307.	101.	34.	2.04		
ROUTED TO	DB11	1187.	12.75	302.	101.	34.	2.04	5119.44	12.75
ROUTED TO	RT-C3	1183.	12.75	302.	101.	34.	2.04		
HYDROGRAPH AT	C3A	74.	12.35	12.	4.	1.	0.12		
2 COMBINED AT	CP C3	1210.	12.75	313.	105.	35.	2.16		
ROUTED TO	DB4	972.	13.05	313.	105.	35.	2.16	5034.99	13.05
ROUTED TO	RT-C3B	972.	13.10	313.	105.	35.	2.16		

HYDROGRAPH AT	C3B	66.	12.35	11.	4.	1.	0.10		
2 COMBINED AT	C-C3B	982.	13.10	323.	109.	36.	2.26		
HYDROGRAPH AT	SA C2	118.	12.30	17.	6.	2.	0.17		
2 COMBINED AT	CP C3	997.	13.05	340.	115.	38.	2.43		
ROUTED TO	RT-C1	997.	13.10	340.	115.	38.	2.43		
HYDROGRAPH AT	SA C1	62.	12.30	9.	3.	1.	0.08		
2 COMBINED AT	CP C1	1004.	13.10	348.	118.	39.	2.51		
2 COMBINED AT	CP CB1	2052.	12.75	647.	222.	75.	4.77		
ROUTED TO	RT-D1	2052.	12.80	647.	222.	75.	4.77		
HYDROGRAPH AT	SA D1	169.	12.30	25.	8.	3.	0.22		
2 COMBINED AT	MOGULE	2094.	12.80	671.	230.	78.	4.99		
HYDROGRAPH AT	SA F1A	94.	12.15	10.	3.	1.	0.07		
ROUTED TO	DB13	6.	12.90	6.	3.	1.	0.07	5072.48	12.95
ROUTED TO	RT-F1B	6.	13.05	6.	3.	1.	0.07		
HYDROGRAPH AT	SA F1B	102.	12.25	14.	5.	2.	0.11		
2 COMBINED AT	F1	106.	12.25	19.	8.	3.	0.18		
HYDROGRAPH AT	SA F2	117.	12.30	17.	6.	2.	0.14		
2 COMBINED AT	MOGULW	219.	12.25	37.	14.	5.	0.32		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-A7	MANE	3.00	345.18	750.00	1.78	3.00	345.18	750.00	1.78
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3890E+02 EXCESS=0.0000E+00 OUTFLOW=0.3891E+02 BASIN STORAGE=0.2877E-02 PERCENT ERROR= 0.0									
RT-A6a	MANE	0.85	611.44	747.45	1.88	3.00	609.91	747.00	1.88
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7110E+02 EXCESS=0.0000E+00 OUTFLOW=0.7110E+02 BASIN STORAGE=0.3138E-03 PERCENT ERROR= 0.0									
RT-A6b	MANE	3.00	526.73	759.00	1.88	3.00	526.73	759.00	1.88
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7698E+02 EXCESS=0.0000E+00 OUTFLOW=0.7698E+02 BASIN STORAGE=0.1656E-02 PERCENT ERROR= 0.0									
RT-A5	MANE	1.95	533.33	760.62	1.89	3.00	530.25	762.00	1.89
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8241E+02 EXCESS=0.0000E+00 OUTFLOW=0.8241E+02 BASIN STORAGE=0.8122E-03 PERCENT ERROR= 0.0									
RT-A4	MANE	3.00	578.37	765.00	1.96	3.00	578.36	765.00	1.96
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9912E+02 EXCESS=0.0000E+00 OUTFLOW=0.9912E+02 BASIN STORAGE=0.2206E-02 PERCENT ERROR= 0.0									
RT-A9	MANE	3.00	174.29	750.00	2.17	3.00	174.29	750.00	2.17
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1808E+02 EXCESS=0.0000E+00 OUTFLOW=0.1809E+02 BASIN STORAGE=0.3192E-02 PERCENT ERROR= -0.1									
RT-A8a	MANE	2.57	536.87	754.01	2.05	3.00	535.57	753.00	2.05
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8752E+02 EXCESS=0.0000E+00 OUTFLOW=0.8752E+02 BASIN STORAGE=0.9367E-03 PERCENT ERROR= 0.0									
RT-A8b	MANE	3.00	558.46	756.00	2.03	3.00	558.46	756.00	2.03
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9293E+02 EXCESS=0.0000E+00 OUTFLOW=0.9293E+02 BASIN STORAGE=0.2404E-02 PERCENT ERROR= 0.0									
RT-A8b	MANE	3.00	258.45	747.00	1.96	3.00	258.45	747.00	1.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2588E+02 EXCESS=0.0000E+00 OUTFLOW=0.2590E+02 BASIN STORAGE=0.2088E-02 PERCENT ERROR= -0.1

RT-A2	MANE	3.00	1344.45	768.00	1.92	3.00	1344.45	768.00	1.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2524E+03 EXCESS=0.0000E+00 OUTFLOW=0.2524E+03 BASIN STORAGE=0.3896E-02 PERCENT ERROR= 0.0

RT-A1	MANE	1.86	1411.60	761.59	1.89	3.00	1411.38	762.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2687E+03 EXCESS=0.0000E+00 OUTFLOW=0.2687E+03 BASIN STORAGE=0.1034E-02 PERCENT ERROR= 0.0

RT-A1	MANE	3.00	1412.86	765.00	1.89	3.00	1412.86	765.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2687E+03 EXCESS=0.0000E+00 OUTFLOW=0.2687E+03 BASIN STORAGE=0.2724E-02 PERCENT ERROR= 0.0

RT-E56	MANE	3.00	22.28	744.00	0.95	3.00	22.28	744.00	0.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2266E+01 EXCESS=0.0000E+00 OUTFLOW=0.2267E+01 BASIN STORAGE=0.1067E-02 PERCENT ERROR= -0.1

RT-E56	MANE	3.00	114.33	744.00	1.77	3.00	114.33	744.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1173E+02 EXCESS=0.0000E+00 OUTFLOW=0.1173E+02 BASIN STORAGE=0.1736E-02 PERCENT ERROR= 0.0

RT-E4	MANE	3.00	141.68	756.00	1.56	3.00	141.68	756.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1400E+02 EXCESS=0.0000E+00 OUTFLOW=0.1401E+02 BASIN STORAGE=0.4201E-02 PERCENT ERROR= -0.1

RT-E3	MANE	3.00	348.79	768.00	1.56	3.00	348.79	768.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4928E+02 EXCESS=0.0000E+00 OUTFLOW=0.4920E+02 BASIN STORAGE=0.6276E-02 PERCENT ERROR= 0.1

RT-A1	MANE	1.17	373.69	768.59	1.52	3.00	373.47	768.00	1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5778E+02 EXCESS=0.0000E+00 OUTFLOW=0.5778E+02 BASIN STORAGE=0.5220E-03 PERCENT ERROR= 0.0

RT-E1	MANE	2.40	39.31	763.20	0.71	3.00	39.27	762.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6226E+01 EXCESS=0.0000E+00 OUTFLOW=0.6231E+01 BASIN STORAGE=0.2529E-02 PERCENT ERROR= -0.1

RT-A1	MANE	3.00	90.83	756.00	0.99	3.00	90.83	756.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1478E+02 EXCESS=0.0000E+00 OUTFLOW=0.1478E+02 BASIN STORAGE=0.1225E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	343.96	753.00	1.76	3.00	343.95	753.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3878E+02 EXCESS=0.0000E+00 OUTFLOW=0.3877E+02 BASIN STORAGE=0.4304E-02 PERCENT ERROR= 0.0

RT-B12	MANE	3.00	165.68	750.00	1.54	3.00	165.68	750.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1971E+02 EXCESS=0.0000E+00 OUTFLOW=0.1971E+02 BASIN STORAGE=0.2024E-02 PERCENT ERROR= 0.0

RT-B11	MANE	2.64	707.00	752.94	1.67	3.00	706.59	753.00	1.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8943E+02 EXCESS=0.0000E+00 OUTFLOW=0.8943E+02 BASIN STORAGE=0.1231E-02 PERCENT ERROR= 0.0

RT-10a	MANE	3.00	747.58	756.00	1.66	3.00	747.58	756.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9568E+02 EXCESS=0.0000E+00 OUTFLOW=0.9568E+02 BASIN STORAGE=0.1953E-02 PERCENT ERROR= 0.0

RT-B8b	MANE	2.21	218.68	739.04	1.56	3.00	218.33	738.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2039E+02 EXCESS=0.0000E+00 OUTFLOW=0.2039E+02 BASIN STORAGE=0.7472E-03 PERCENT ERROR= 0.0

RT-B7	MANE	3.00	318.62	741.00	1.65	3.00	318.62	741.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3014E+02 EXCESS=0.0000E+00 OUTFLOW=0.3014E+02 BASIN STORAGE=0.1686E-02 PERCENT ERROR= 0.0

RT-10b	MANE	0.77	1021.31	753.12	1.68	3.00	1021.13	753.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1386E+03 EXCESS=0.0000E+00 OUTFLOW=0.1386E+03 BASIN STORAGE=0.3239E-03 PERCENT ERROR= 0.0

RT-10c	MANE	1.21	913.72	761.50	1.69	3.00	912.74	762.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1428E+03 BASIN STORAGE=0.5010E-03 PERCENT ERROR= 0.0

RT- B3	MANE	0.86	115.38	737.15	2.22	3.00	115.26	738.00	2.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1114E+02 EXCESS=0.0000E+00 OUTFLOW=0.1114E+02 BASIN STORAGE=0.1838E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	5.94	1122.00	2.16	3.00	5.94	1122.00	2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1610E+02 EXCESS=0.0000E+00 OUTFLOW=0.1610E+02 BASIN STORAGE=0.3742E-03 PERCENT ERROR= 0.0

RT-B5	MANE	3.00	28.43	741.00	1.62	3.00	28.43	741.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2505E+01 EXCESS=0.0000E+00 OUTFLOW=0.2506E+01 BASIN STORAGE=0.1383E-02 PERCENT ERROR= -0.1

RT-B5	MANE	3.00	85.03	741.00	1.69	3.00	85.03	741.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7902E+01 EXCESS=0.0000E+00 OUTFLOW=0.7904E+01 BASIN STORAGE=0.1597E-02 PERCENT ERROR= 0.0

RT-B4	MANE	2.42	186.73	742.18	1.88	3.00	185.76	741.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3355E+02 EXCESS=0.0000E+00 OUTFLOW=0.3355E+02 BASIN STORAGE=0.6153E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	2.85	213.22	743.77	1.89	3.00	212.38	744.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3742E+02 EXCESS=0.0000E+00 OUTFLOW=0.3742E+02 BASIN STORAGE=0.7129E-03 PERCENT ERROR= 0.0

RT-B2b	MANE	3.00	93.99	732.00	2.32	3.00	93.99	732.00	2.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6473E+01 EXCESS=0.0000E+00 OUTFLOW=0.6475E+01 BASIN STORAGE=0.8911E-03 PERCENT ERROR= 0.0

RT-B2c	MANE	3.00	127.59	747.00	2.18	3.00	127.59	747.00	2.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2069E+02 EXCESS=0.0000E+00 OUTFLOW=0.2069E+02 BASIN STORAGE=0.1760E-02 PERCENT ERROR= 0.0

RT-B1	MANE	2.53	1168.09	761.84	1.77	3.00	1167.48	762.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2084E+03 EXCESS=0.0000E+00 OUTFLOW=0.2084E+03 BASIN STORAGE=0.1079E-02 PERCENT ERROR= 0.0

RT-C11	MANE	3.00	677.76	747.00	2.13	3.00	677.76	747.00	2.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7463E+02 EXCESS=0.0000E+00 OUTFLOW=0.7464E+02 BASIN STORAGE=0.2751E-02 PERCENT ERROR= 0.0

RT-C7	MANE	3.00	936.53	747.00	2.10	3.00	936.53	747.00	2.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1090E+03 EXCESS=0.0000E+00 OUTFLOW=0.1090E+03 BASIN STORAGE=0.3500E-02 PERCENT ERROR= 0.0

RT-C5	MANE	3.00	1202.36	750.00	2.01	3.00	1202.36	750.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1406E+03 EXCESS=0.0000E+00 OUTFLOW=0.1406E+03 BASIN STORAGE=0.1623E-02 PERCENT ERROR= 0.0

RT-C6	MANE	3.00	258.93	741.00	1.84	3.00	258.93	741.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2330E+02 EXCESS=0.0000E+00 OUTFLOW=0.2331E+02 BASIN STORAGE=0.2342E-02 PERCENT ERROR= 0.0

RT- C9	MANE	1.44	1591.05	746.83	1.91	3.00	1589.84	747.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1834E+03 EXCESS=0.0000E+00 OUTFLOW=0.1834E+03 BASIN STORAGE=0.7932E-03 PERCENT ERROR= 0.0

RT-C4b	MANE	1.53	1641.62	748.28	1.87	3.00	1637.38	747.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1908E+03 EXCESS=0.0000E+00 OUTFLOW=0.1908E+03 BASIN STORAGE=0.7260E-03 PERCENT ERROR= 0.0

RT-C3	MANE	1.91	1184.58	767.36	1.85	3.00	1182.97	765.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2010E+03 EXCESS=0.0000E+00 OUTFLOW=0.2010E+03 BASIN STORAGE=0.8256E-03 PERCENT ERROR= 0.0

RT-C3B	MANE	1.48	971.63	786.05	1.81	3.00	971.61	786.00	1.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2087E+03 EXCESS=0.0000E+00 OUTFLOW=0.2087E+03 BASIN STORAGE=0.5700E-03 PERCENT ERROR= 0.0

RT-C1	MANE	2.51	996.58	785.96	1.75	3.00	996.55	786.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2273E+03 EXCESS=0.0000E+00 OUTFLOW=0.2273E+03 BASIN STORAGE=0.1241E-02 PERCENT ERROR= 0.0

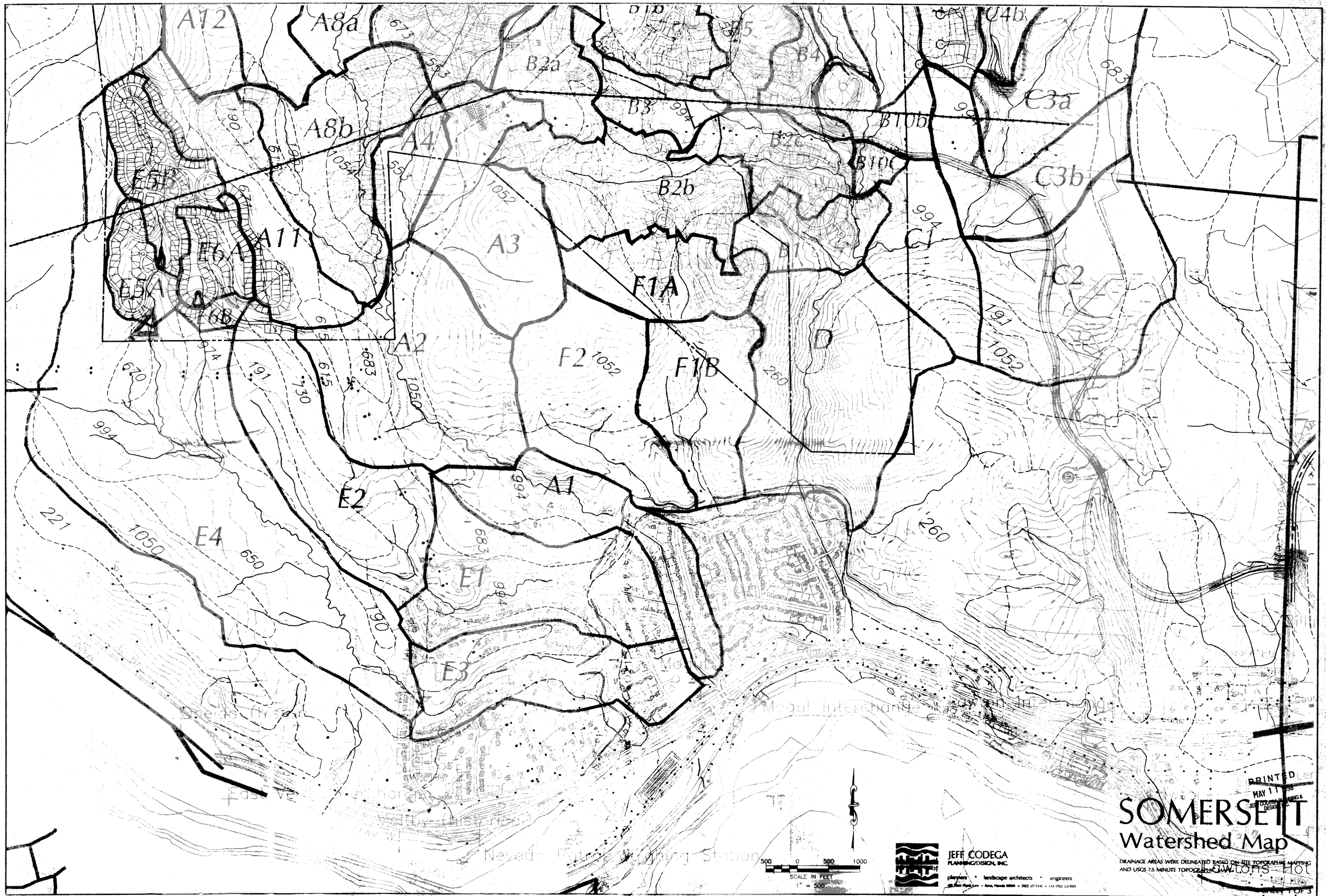
RT-D1	MANE	3.00	2052.46	768.00	1.76	3.00	2052.46	768.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4469E+03 EXCESS=0.0000E+00 OUTFLOW=0.4469E+03 BASIN STORAGE=0.2006E-02 PERCENT ERROR= 0.0

RT-F1B	MANE	3.00	6.43	789.00	1.75	3.00	6.43	789.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6774E+01 EXCESS=0.0000E+00 OUTFLOW=0.6774E+01 BASIN STORAGE=0.1469E-02 PERCENT ERROR= 0.0

*** NORMAL END OF HEC-1 ***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A8a
B2a
B1b
B5
B4
C4b
C3a
A8b
A4
B3
B1Ob
B2C
B10C
C3b
E6B
B2b
A11
E6A
A3
B1
C1
C2
E5A
6B
F1A
A2
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F1B
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A1
E4
E1
E3
Mogul Interchange
Nevada Public Safety Training Station
East
SCALE IN FEET
1" = 500'
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SOMERSETT
Watershed Map
DRAINAGE AREAS WERE DELINEATED BASED ON SITE TOPOGRAPHIC MAPPING AND USGS 7.5 MINUTE TOPOGRAPHIC QUADS.
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MAY 11 '88
SHEET 1 OF 3

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SCALE IN FEET
500 0 500 1000

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SHEET 2 OF 3

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8266
Lookout

Peavine Springs

1480

1410

C10

1411

1181

892

C11

A14

B13

B17

A15

496

A7

B12

C7

Brooklyn (historical)

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Watershed Map

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SCALE IN FEET
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500 0 500 1000

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Existing Condition Watershed Map

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500 0 500 1000

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8266
Lookout

Peavine Springs

1480

1410

C10

1181

1410

141

892

C11

892

A14

A15

B13

B17

496

892

A7

B12

C7

496

500 0 500 1000
SCALE IN FEET
1" = 500'

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SHEET 3 OF 3

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