
BANNING/DEUTCH PROPERTY
BACKBONE DRAINAGE STUDY
2ND SUBMITTAL

Prepared For:

Pardee Homes
1385 Old Temescal Road
Corona, California 92881

Prepared By:



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PN: 10-104365

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1.0 Introduction

This study is a technical evaluation that identifies the potential hydrologic impacts and required mitigation procedures for the proposed Deutch-Banning project in the city of Banning, California. The development is located north of Wilson Street, and east of Highland Springs Road.

The objective of this study is to estimate and evaluate the level of mitigation necessary to alleviate potential adverse drainage impacts as a result of the implementation of this residential project.

The project consists primarily of residential dwellings, with some commercial areas and an 18-hole golf course. The total project site is 1,523 acres and is located within two main drainage watersheds; 1) Smith Creek, and 2) Pershing Channel.

Smith Creek currently runs from north to south within the project site boundaries. Within the project boundary, Smith Creek is a natural earthen channel approximately 30 feet wide and ranges from three to five feet deep. The channel is mostly barren soil with a sandy bottom and soil sidewalls. This study analyzes the Smith Creek watershed from the headworks to Wilson Street. This drainage area is approximately 3,348 acres.

The Pershing Channel watershed is east of Smith Creek and consists of about 8,000 linear feet of natural channel before it is directed into a constructed drainage facility. This study focuses on Pershing Channel from the headworks to Wilson Street. The drainage area is approximately 664 acres.

In this study, the existing and developed conditions have been analyzed for both drainage watersheds.

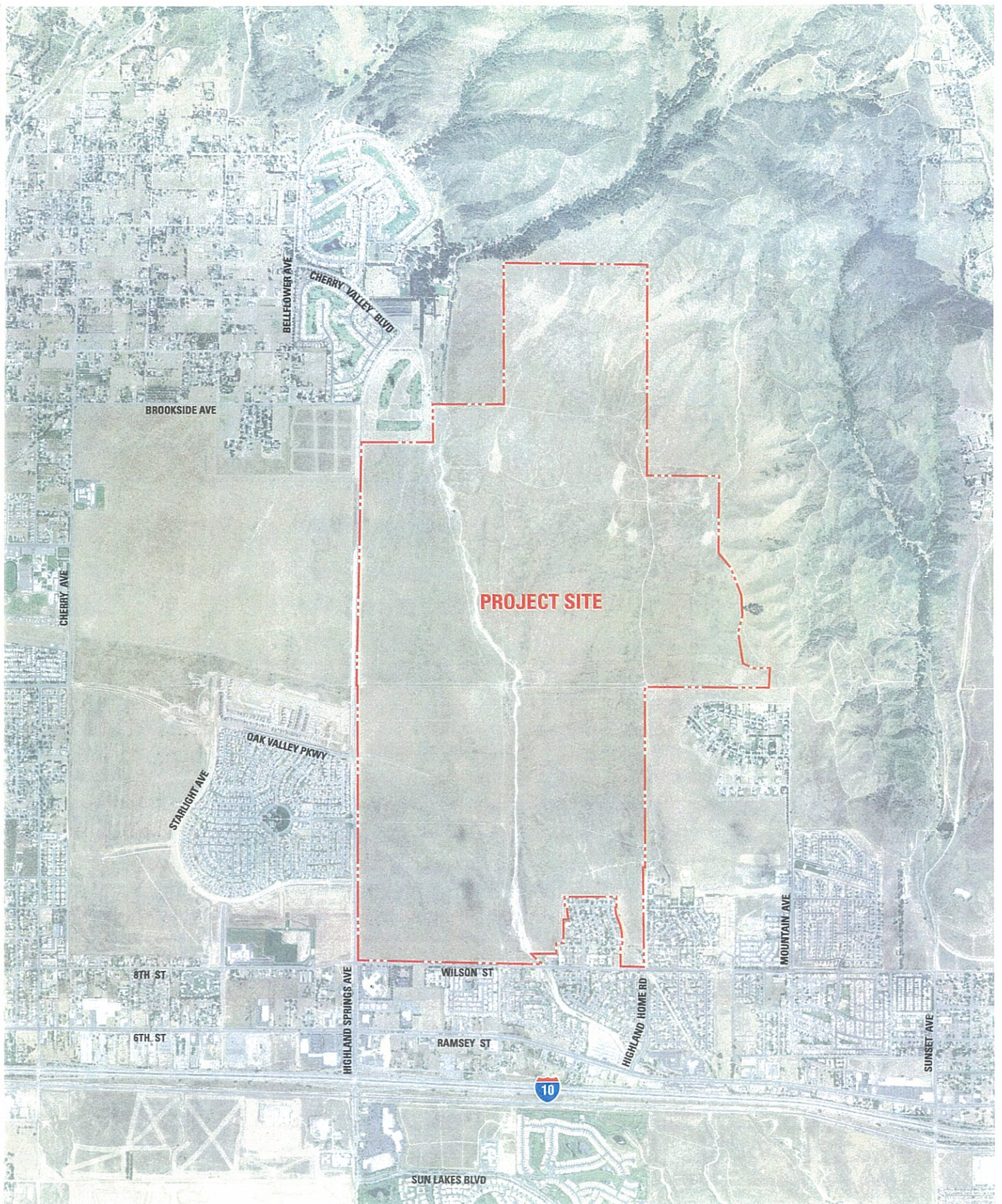
2.0 Hydrologic Analysis

Unit hydrographs for the 100-year (6-hr, 3-hr, and 24-hr duration) storms were calculated for the existing and developed areas using the methodology prescribed in the Riverside County Hydrology Manual.

Soil data was retrieved from existing USGS, and County soils maps and saved in a GIS database. Land use information for offsite areas were obtained from the City of Banning General Plan. Tributary drainage areas were delineated using project site topography information and USGS maps, and can be seen in Figures 1 and 2. Loss rate calculations were performed for each watershed and can be seen in *Figure 4*.

Both existing and developed conditions were analyzed using the Hydrologic Engineering Center's HEC-1 program. HEC-1 is designed to simulate the surface runoff response of a river to precipitation by representing the basin as an interconnected system of hydrologic and hydraulic components. This program was specifically used in this study for calculating runoff from precipitation data, combining hydrographs, and reservoir routing.

Existing condition hydrology for both watersheds were performed using the Single Area Unity Hydrograph method. For developed conditions, the watersheds were divided into



subareas tributary to critical locations, where proposed detention basins or drainage structures exist.

Sediment Load Calculations

Sediment yield calculations were performed for the natural area tributary to the project site in the Smith Creek watershed using the Los Angeles District Method (ACOE-TATUM). Calculations indicated that approximately 42.6 acre-ft of sediment could flow into the project site. The calculations can be found in *Appendix C*. According to the County Master Plan, a debris load of 96 acre-feet was expected at this site. No calculations could be found at the County to back these values. Therefore, onsite debris basin total volume requirements are based on the calculated volume of 42.6 acre-ft.

Figure 5 shows the drainage area used to estimate the debris accumulation for the North Basin only. This area was assumed to be completely natural, even though a major portion of this area is in the process of being developed by Suncal. These calculations differ from the original Master Drainage Plan (MDP) since it was assumed in the MDP that the entire drainage area tributary to the Smith Creek/Wilson Street concentration point was undeveloped. In this study, only the natural areas were used to calculate the estimated debris accumulations for Smith Creek.

Natural drainage areas within the Pershing Channel will be intercepted prior to crossing into the development site. Each subarea, located on Figure 5, will contain a small debris basin. Exact sizes, locations and maintenance access routes are still under development. The focus of this study is only for the main debris capture of the Smith Creek.

Detention Basins Characteristics

The function of the proposed Smith Creek detention basins is to reduce the magnitude of the peak runoff downstream in the receiving water. As the runoff yield per acre increases with the proposed land use changes, the detention basin will serve as a mitigation measure to reduce potential increased peak flows.

Two basins are proposed to mitigate the developed condition runoff; the northern basin, and the central basin. The northern basin is approximately 25 acres and can detain approximately 97 acre-feet of runoff. This basin captures the sediment yield and flows from 1,955 acres north of the project site.

The central basin is located less than a mile downstream of the northern basin. This basin is approximately 3.2 acres and can detain approximately 18 acre-feet of runoff.

The elevation-volume information for both basins can be found in the Tables below:

Table 1a: North Basin Storage Summary

<i>Elevation (ft.)</i>	<i>Cumulative Storage (acre-ft)</i>	<i>Effective Storage (acre-ft)*</i>
2850	0	0
2851	1.3	0
2852	4.55	0
2853	10.57	0
2854	19.37	0
2855	30.94	0
2856	44.34	1.74
2857	58.6	14.3
2858	73.74	29.5
2859	89.76	45.4
2860	106.64	62.3
2861	124.18	81.0
2862	142.16	97.8

*Note: Sediment volume is 42.6 acre-ft. Actual volume available for flood attenuation.

Table 1b: Central Basin Storage Summary

<i>Elevation (ft.)</i>	<i>Cumulative Storage (acre-ft)</i>
2742	0
2743	0.29
2744	1.3
2745	3.21
2746	5.63
2747	8.28
2748	11.16
2749	14.28
2750	17.64

3.0 Results

The HEC-1 results for the existing and developed conditions can be found in Table No. 2. In parentheses, the governing duration is given that produced the largest peak flowrate.

Table 2: Hydrology Results

Concentration Point	Peak Flow Rate - Q_{100} (cfs)		<i>Master Plan Flow Rate</i>
	<i>Existing Conditions¹</i>	<i>Proposed Condition¹</i>	
Smith Creek/Wilson St.	3,518 (6-hr)	3,413 (6-hr)	3,500
Pershing Channel/Wilson St.	946 (6-hr)	740 (3-hr)	870

1) Clearwater flowrates.

Both Smith Creek and Pershing Channel watersheds will be mitigated to below existing conditions, as well as, conditions revealed in the City of Banning Master Plan.

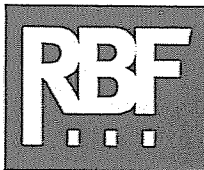
4.0 Proposed Drainage Facilities

The main backbone drainage facility for this project site consists of a large open channel section that will run from north to south near the existing footprint of Smith Creek. This drainage channel will run adjacent to the proposed golf course. During significant storm events (i.e. 2 year flows or greater), the channel will spill over the top of channel and spread onto the fairways. By spreading the flows, the wetted perimeter is increased resulting in slower velocities. The proposed main channel will be primarily lined with turf reinforcing mat (TRM), which will be covered in soil and vegetated. The result is a natural, vegetated channel. For the few areas where the velocities are too great to use TRM, drop structures will be utilized to protect the channel from erosion.

Culverts will be placed at the proposed street crossings. Most of these structures will be utilized as golf cart passage. Figure 3 shows a conceptual plan for where the proposed TRM, drop structures, and culverts are planned to be located.

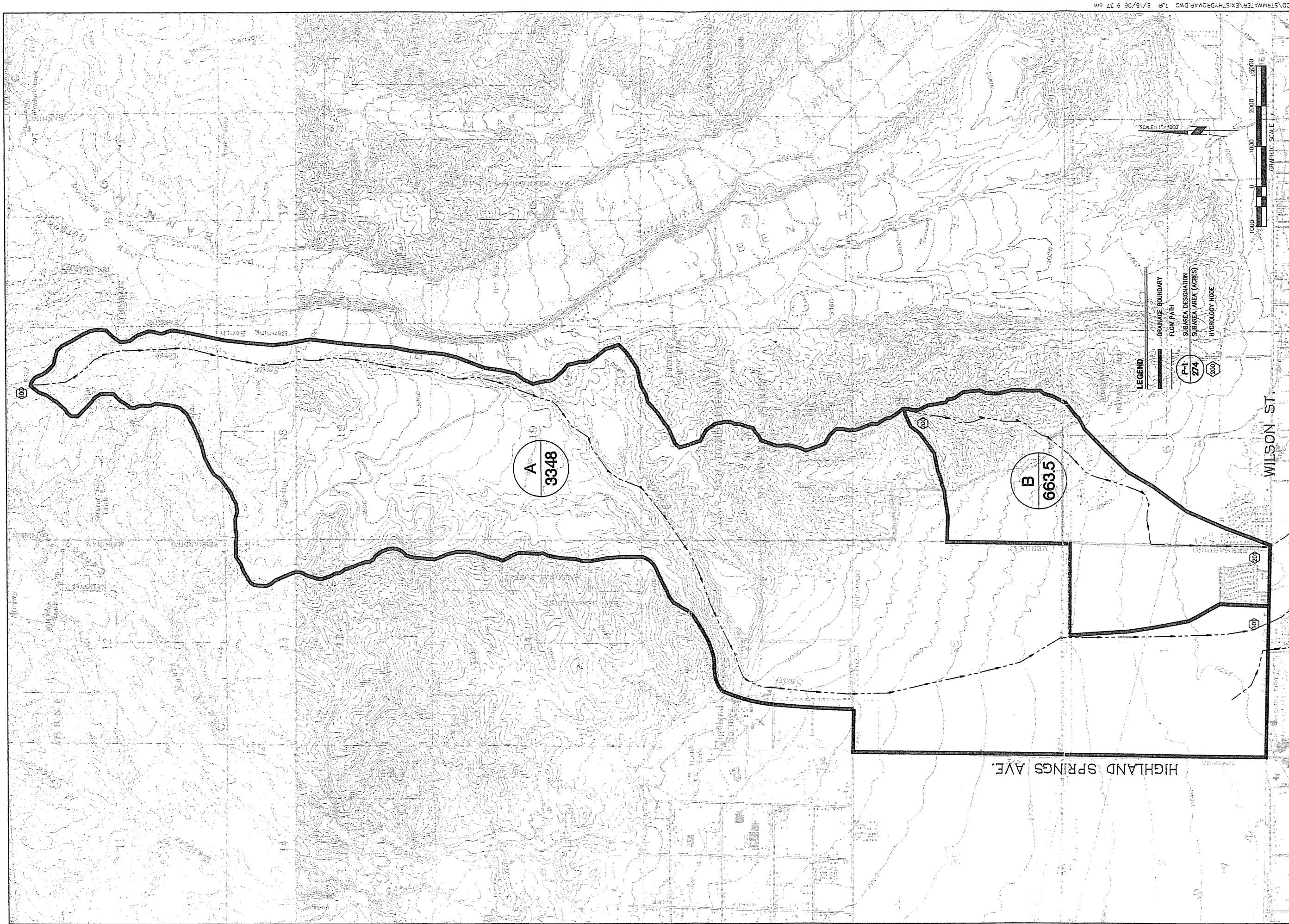
The proposed drainage facilities were designed to replace the systems identified in the County Master Plan of Drainage. The proposed drainage system provides the same function as those master planned, and actually reduces the master planned flowrates at the project boundaries.

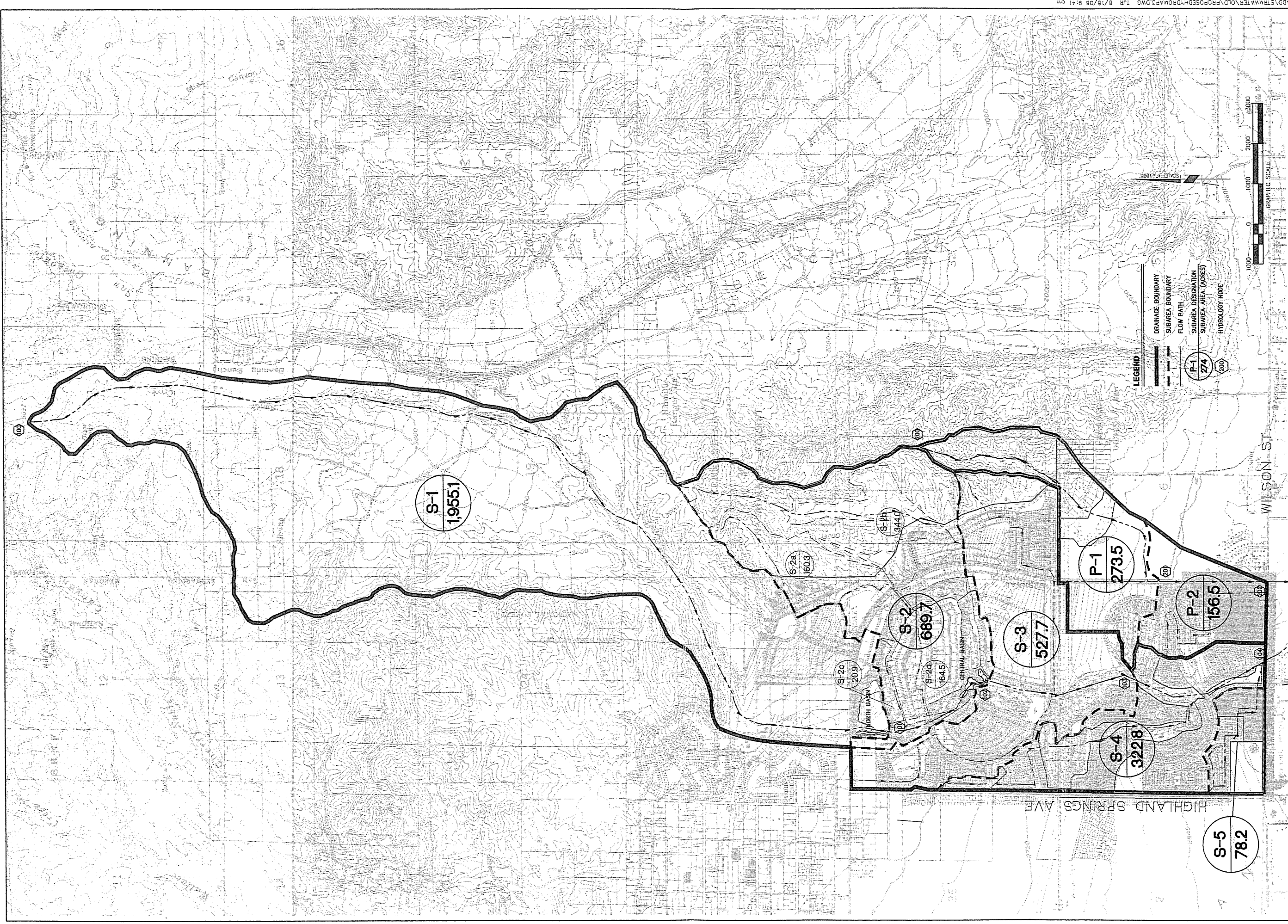
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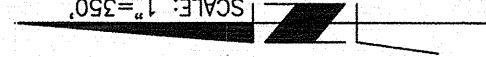
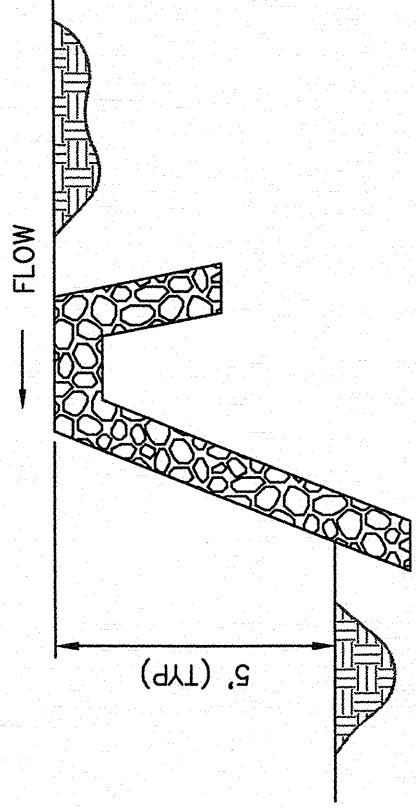
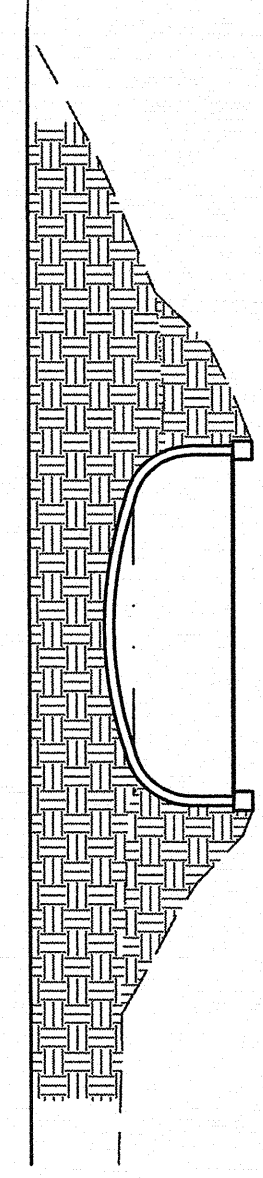
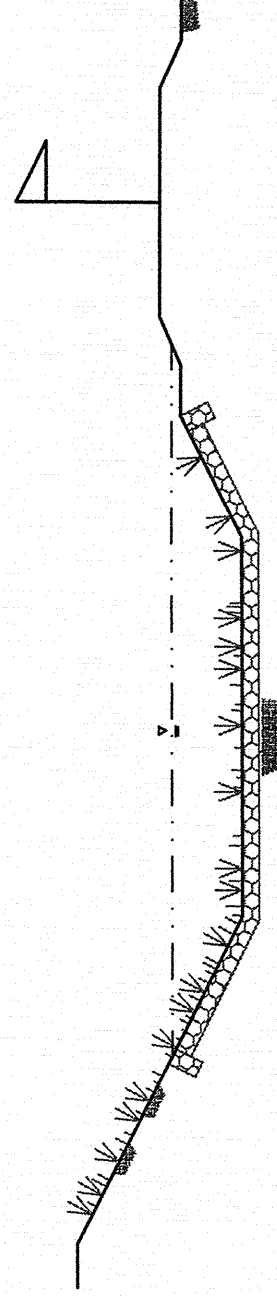


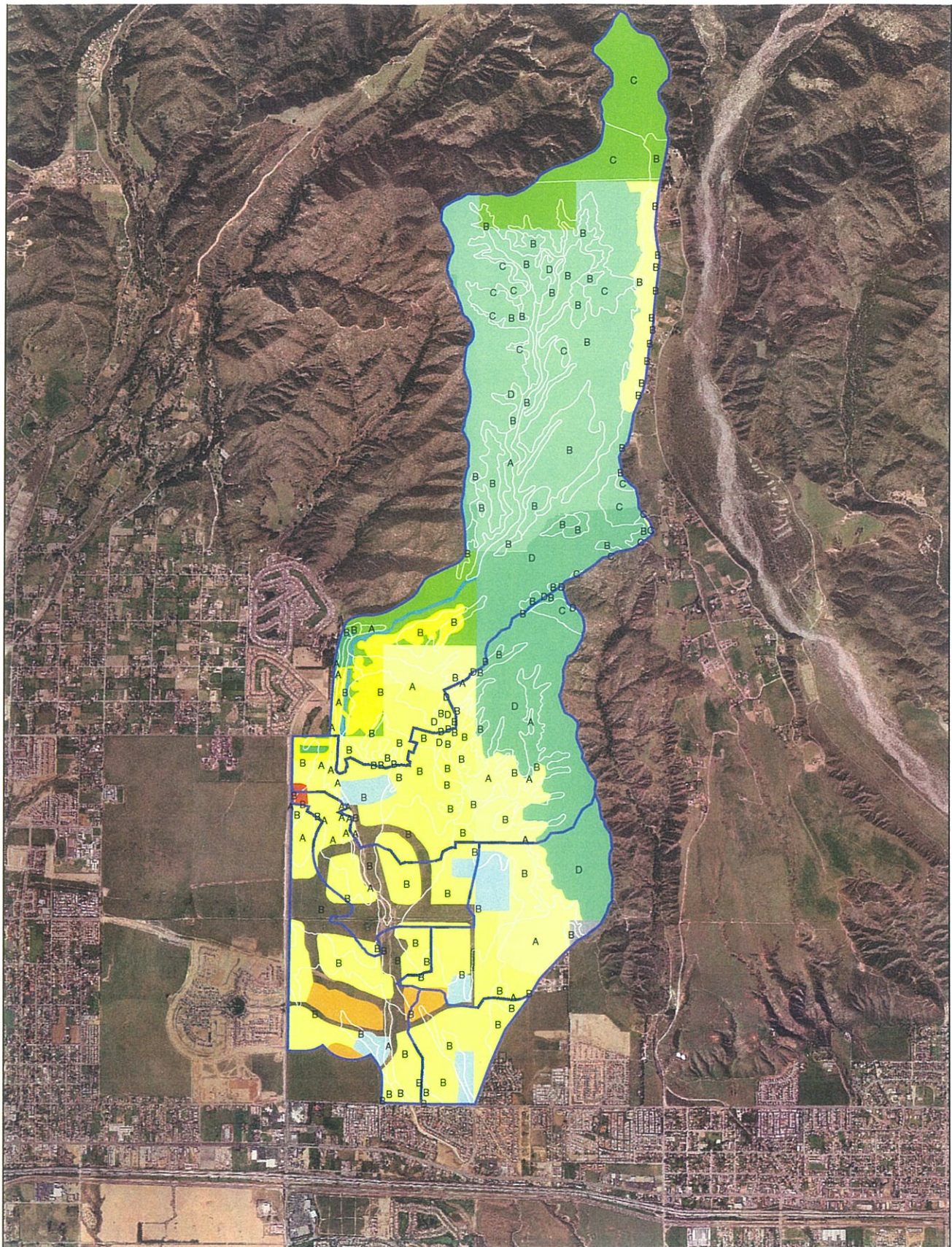
Figures

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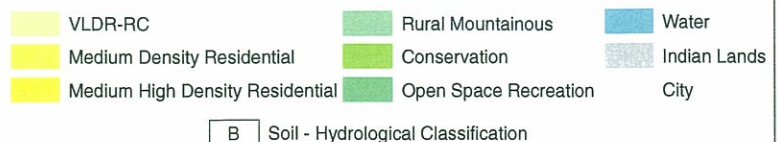


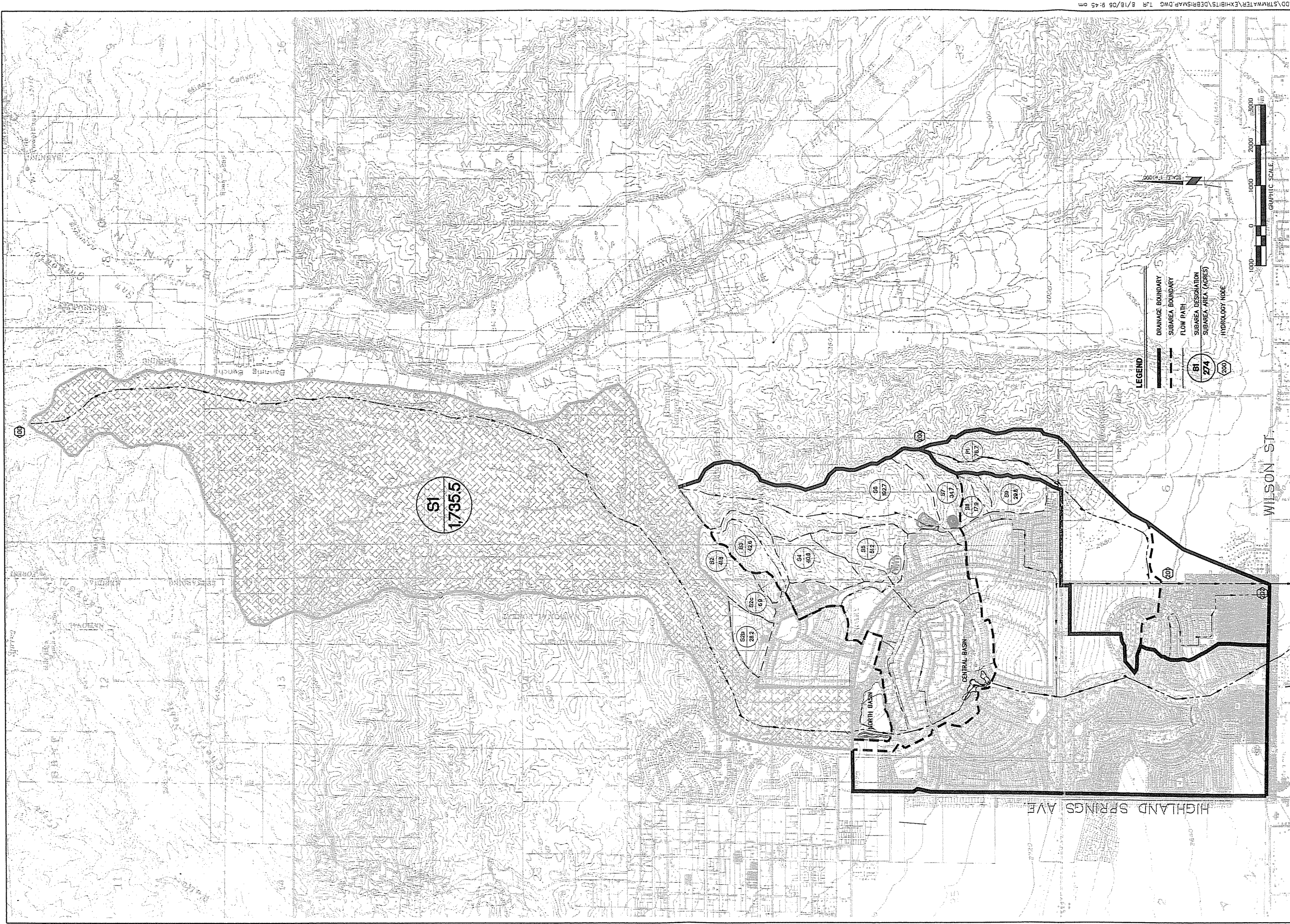
Land Use and Soil Overlay

FIGURE 4

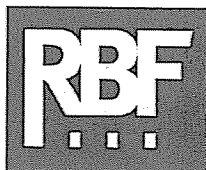


Sources: Riverside County General Plan - 2003
USDA - The Natural Resources Conservation Service
Eagle Aerial





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TECHNICAL APPENDIX A

Hydrology Calculations - 100-Year Unit Hydrograph

- 1 - Smith Creek Existing Conditions 6-hr (HEC-1 Output)
- 2 - Pershing Channel Existing Conditions 6-hr(HEC-1 Output)
- 3 - Smith Creek Proposed Conditions 6-hr (HEC-1 Output)
- 4 - Pershing Channel Proposed Conditions 3-hr (HEC-1 Output)
- 5 - Pershing Channel Proposed Conditions 6-hr (HEC-1 Output)
- 6 - Proposed Basins Outlet Rating Curves

**1 – Smith Creek Existing Condition
100-yr/6-hr
(HEC-1 Output)**

```

*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 21JUL06 TIME 17:06:10
*
*****

```

```

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

```

```

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

```

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

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSK- 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

HEC-1 INPUT

PAGE 1

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

*** FREE ***

```

1 ID RBF Consulting
2 ID
3 ID *****
4 ID EXISTING CONDITION ANALYSIS
5 ID BANNING - 100-yr/6-Hr
6 ID *****
7 ID
8 ID JULY 19, 2005 (Final Run)
9 ID Filename: BanEx6hr.in/dat
10 ID Concentration Point: Smith Creek @ Wilson St.
11 ID Single Area Unit Hydrograph - Find Qmax (existing)6-hr
12 ID BASED ON SOUTHERN CALIFORNIA INTERMEDIATE STORM
13 ID
    *DIAGRAM

```

** NOLIST ***

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT

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

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

***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

*****
FLOOD HYDROGRAPH PACKAGE (HEC-1)
      JUN 1998
      VERSION 4.1
RUN DATE 21JUL06 TIME 17:06:10
*****
  
```

```

*****
*
* U.S. ARMY CORPS OF ENGINEERS
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* DAVIS, CALIFORNIA 95616
* (916) 756-1104
*
*****
  
```

RBF Consulting

```

*****
EXISTING CONDITION ANALYSIS
BANNING - 100-yr/6-Hr
*****
  
```

JULY 19, 2005 (Final Run)
 Filename: BanEx6hr.in/dat
 Concentration Point: Smith Creek @ Wilson St.
 Single Area Unit Hydrograph - Find Qmax (existing)6-hr
 BASED ON SOUTHERN CALIFORNIA INTERMEDIATE STORM

15 IO

OUTPUT CONTROL VARIABLES

```

IPRNT      0 PRINT CONTROL
IPLOT      0 PLOT CONTROL
QSCAL      0. HYDROGRAPH PLOT SCALE
  
```

IT

HYDROGRAPH TIME DATA

```

NMIN      5 MINUTES IN COMPUTATION INTERVAL
IDATE     1 0 STARTING DATE
ITIME     0000 STARTING TIME
NQ        288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE     1 0 ENDING DATE
NDTIME    2355 ENDING TIME
ICENT     19 CENTURY MARK
  
```

```

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS
  
```

ENGLISH UNITS

```

DRAINAGE AREA      SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION  FEET
FLOW               CUBIC FEET PER SECOND
STORAGE VOLUME     ACRE-FEET
SURFACE AREA       ACRES
TEMPERATURE        DEGREES FAHRENHEIT
  
```

16 KK *
 *
 * 101 *
 *

101 HYDROGRAPH DEVELOPMENT
POINT RAINFALL DEPTH = 3.50 INCHES
DEPTH-AREA REDUCTION FACTOR = 0.986
F = 0.314 IN/HR
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

22 BA SUBBASIN CHARACTERISTICS
 TAREA 5.23 SUBBASIN AREA

PRECIPITATION DATA

23 PB STORM 3.45 BASIN TOTAL PRECIPITATION

24 PI INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

32 LU UNIFORM LOSS RATE

STRTL	.00	INITIAL LOSS
CNSTL	.35	UNIFORM LOSS RATE
RTIMP	10.00	PERCENT IMPERVIOUS AREA

32 UI INPUT UNITGRAPH, 46 ORDINATES, VOLUME = 1.00

833.0	1203.0	1703.0	2183.0	3214.0	6151.0	6895.0	3322.0	1999.0	1775.0
1605.0	1190.0	1126.0	943.0	859.0	744.0	620.0	570.0	516.0	459.0
373.0	335.0	298.0	200.0	200.0	200.0	164.0	43.0	43.0	43.0
42.8	42.7	42.8	42.8	42.7	42.8	42.8	42.7	42.8	42.7
42.8	42.8	42.7	42.8	42.8	30.4				

HYDROGRAPH AT STATION 101

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q		DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
								*								
1	0000	1		.00	.00	.00	0.	*	1	1200	145		.00	.00	.00	0.
1	0005	2		.02	.02	.00	1.	*	1	1205	146		.00	.00	.00	0.
1	0010	3		.02	.02	.00	4.	*	1	1210	147		.00	.00	.00	0.
1	0015	4		.02	.02	.00	7.	*	1	1215	148		.00	.00	.00	0.

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1	0030	7	.02	.02	.00	30.	*	1	1230	151	.00	.00	.00	0.
1	0035	8	.02	.02	.00	44.	*	1	1235	152	.00	.00	.00	0.
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1	0050	11	.02	.02	.00	63.	*	1	1250	155	.00	.00	.00	0.
1	0055	12	.02	.02	.00	69.	*	1	1255	156	.00	.00	.00	0.
1	0100	13	.03	.02	.00	74.	*	1	1300	157	.00	.00	.00	0.
1	0105	14	.03	.02	.00	78.	*	1	1305	158	.00	.00	.00	0.
1	0110	15	.03	.02	.00	81.	*	1	1310	159	.00	.00	.00	0.
1	0115	16	.03	.02	.00	84.	*	1	1315	160	.00	.00	.00	0.
1	0120	17	.03	.02	.00	88.	*	1	1320	161	.00	.00	.00	0.
1	0125	18	.03	.02	.00	91.	*	1	1325	162	.00	.00	.00	0.
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1	0215	28	.03	.03	.00	117.	*	1	1415	172	.00	.00	.00	0.
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1	0245	34	.03	.03	.01	170.	*	1	1445	178	.00	.00	.00	0.
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1	0255	36	.03	.03	.01	187.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.03	.03	.01	198.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.03	.03	.01	212.	*	1	1505	182	.00	.00	.00	0.
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1	0330	43	.04	.03	.02	331.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.03	.02	372.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.03	.02	419.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.03	.03	463.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.03	.03	517.	*	1	1550	191	.00	.00	.00	0.
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1	0400	49	.06	.03	.03	669.	*	1	1600	193	.00	.00	.00	0.
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1	0410	51	.06	.03	.04	804.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.03	.04	876.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.03	.04	949.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.03	.05	1029.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.03	.05	1111.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.03	.05	1209.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.03	.05	1313.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.03	.06	1420.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.03	.06	1523.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.03	.06	1619.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.03	.06	1712.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.03	.08	1830.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.12	.03	.10	1967.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.13	.03	.11	2115.	*	1	1715	208	.00	.00	.00	0.

1	0520	65	.14	.03	.12	2284.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.03	.14	2505.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.19	.03	.17	2823.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.03	.04	3112.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.03	.00	3331.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	3454.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	3518.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	3474.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	2950.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	2077.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	1567.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	1324.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	1141.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	968.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	843.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	730.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	638.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	554.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	480.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	420.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	365.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	313.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	265.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	227.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	191.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	156.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	133.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	112.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	88.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	65.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	59.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	56.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	54.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	52.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	50.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	48.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	46.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	44.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	42.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	39.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	37.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	34.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	31.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	28.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	23.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	19.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	13.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	7.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	2.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.

1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

*

TOTAL RAINFALL = 3.45, TOTAL LOSS = 1.74, TOTAL EXCESS = 1.71

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	23.92-HR	
3518.	5.83	932.	241.	241.	241.	
		(INCHES)	1.658	1.704	1.704	1.704
		(AC-FT)	462.	475.	475.	475.

CUMULATIVE AREA = 5.23 SQ MI

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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	101	3518.	5.83	932.	241.	241.	5.23		

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

**2 – Pershing Channel Existing Condition
100-yr/6-hr
(HEC-1 Output)**

```

*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 21JUL06 TIME 17:27:19
*
*****

```

```

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

```

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X   X XXXXXXXX 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 XXXXXXXX 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

1

HEC-1 INPUT

PAGE 1

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

*** FREE ***

```

1      ID   RBF Consulting
2      ID
3      ID   *****
4      ID   EXISTING CONDITION ANALYSIS
5      ID   BANNING - 100-yr/6-Hr
6      ID   *****
7      ID
8      ID   Sept 22, 2005
9      ID   Filename: BPex6hr.in/dat   No Diversion in Existing Cond.
10     ID   Concentration Point: Pershing Channel @ Wilson St.
11     ID   Single Area Unit Hydrograph - Find Qmax (existing)6-hr
12     ID
13     ID
      *DIAGRAM

```

*** NOLIST ***

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT

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

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

***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*   JUN 1998                      *
*   VERSION 4.1                   *
*
* RUN DATE 21JUL06 TIME 17:27:19 *
*
*****

```

```

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

```

RBF Consulting

```

*****
EXISTING CONDITION ANALYSIS
BANNING - 100-yr/6-Hr
*****

```

Sept 22, 2005

Filename: BPex6hr.in/dat No Diversion in Existing Cond.
 Concentration Point: Pershing Channel @ Wilson St.
 Single Area Unit Hydrograph - Find Qmax (existing)6-hr

15 10

OUTPUT CONTROL VARIABLES

```

IPRNT      0 PRINT CONTROL
IPLOT      0 PLOT CONTROL
QSCAL      0. HYDROGRAPH PLOT SCALE

```

IT

HYDROGRAPH TIME DATA

```

NMIN      5 MINUTES IN COMPUTATION INTERVAL
IDATE      1 0 STARTING DATE
ITIME      0000 STARTING TIME
NQ         288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE      1 0 ENDING DATE
NDTIME      2355 ENDING TIME
ICENT      19 CENTURY MARK

```

```

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS

```

ENGLISH UNITS

```

DRAINAGE AREA      SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION  FEET
FLOW               CUBIC FEET PER SECOND
STORAGE VOLUME     ACRE-FEET
SURFACE AREA       ACRES
TEMPERATURE        DEGREES FAHRENHEIT

```

*** **

* *

16 KK * 101 *

* *

101 HYDROGRAPH DEVELOPMENT
POINT RAINFALL DEPTH = 3.50 INCHES
DEPTH-AREA REDUCTION FACTOR = 0.997
F = 0.344 IN/HR
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

22 BA SUBBASIN CHARACTERISTICS
TAREA 1.04 SUBBASIN AREA

PRECIPITATION DATA

23 PB STORM 3.49 BASIN TOTAL PRECIPITATION

24 PI INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

32 LU UNIFORM LOSS RATE
STRTL .00 INITIAL LOSS
CNSTL .38 UNIFORM LOSS RATE
RTIMP 10.00 PERCENT IMPERVIOUS AREA

32 UI INPUT UNITGRAPH, 18 ORDINATES, VOLUME = 1.00

595.0	1357.0	2908.0	1045.0	651.0	459.0	320.0	243.0	162.0	102.0
58.8	21.8	21.8	21.8	21.8	21.8	21.8	18.8		

HYDROGRAPH AT STATION 101

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q		DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1	.00	.00	.00	0.	*		1	1200	145	.00	.00	.00	0.	
1	0005	2	.02	.02	.00	1.	*		1	1205	146	.00	.00	.00	0.	
1	0010	3	.02	.02	.00	4.	*		1	1210	147	.00	.00	.00	0.	
1	0015	4	.02	.02	.00	9.	*		1	1215	148	.00	.00	.00	0.	
1	0020	5	.02	.02	.00	12.	*		1	1220	149	.00	.00	.00	0.	
1	0025	6	.02	.02	.00	14.	*		1	1225	150	.00	.00	.00	0.	
1	0030	7	.02	.02	.00	15.	*		1	1230	151	.00	.00	.00	0.	

1	0035	8	.02	.02	.00	16.	*	1	1235	152	.00	.00	.00	0.
1	0040	9	.02	.02	.00	17.	*	1	1240	153	.00	.00	.00	0.
1	0045	10	.02	.02	.00	18.	*	1	1245	154	.00	.00	.00	0.
1	0050	11	.02	.02	.00	19.	*	1	1250	155	.00	.00	.00	0.
1	0055	12	.02	.02	.00	19.	*	1	1255	156	.00	.00	.00	0.
1	0100	13	.03	.03	.00	19.	*	1	1300	157	.00	.00	.00	0.
1	0105	14	.03	.03	.00	20.	*	1	1305	158	.00	.00	.00	0.
1	0110	15	.03	.03	.00	21.	*	1	1310	159	.00	.00	.00	0.
1	0115	16	.03	.03	.00	22.	*	1	1315	160	.00	.00	.00	0.
1	0120	17	.03	.03	.00	22.	*	1	1320	161	.00	.00	.00	0.
1	0125	18	.03	.03	.00	22.	*	1	1325	162	.00	.00	.00	0.
1	0130	19	.03	.03	.00	22.	*	1	1330	163	.00	.00	.00	0.
1	0135	20	.03	.03	.00	22.	*	1	1335	164	.00	.00	.00	0.
1	0140	21	.03	.03	.00	22.	*	1	1340	165	.00	.00	.00	0.
1	0145	22	.03	.03	.00	22.	*	1	1345	166	.00	.00	.00	0.
1	0150	23	.03	.03	.00	22.	*	1	1350	167	.00	.00	.00	0.
1	0155	24	.03	.03	.00	22.	*	1	1355	168	.00	.00	.00	0.
1	0200	25	.03	.03	.00	23.	*	1	1400	169	.00	.00	.00	0.
1	0205	26	.03	.03	.00	23.	*	1	1405	170	.00	.00	.00	0.
1	0210	27	.03	.03	.00	24.	*	1	1410	171	.00	.00	.00	0.
1	0215	28	.03	.03	.00	24.	*	1	1415	172	.00	.00	.00	0.
1	0220	29	.03	.03	.00	24.	*	1	1420	173	.00	.00	.00	0.
1	0225	30	.03	.03	.00	25.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.03	.03	.00	25.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.03	.03	.00	25.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.03	.03	.00	25.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.03	.03	.01	27.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.03	.03	.01	31.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.03	.03	.01	40.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.03	.03	.01	44.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.03	.03	.01	46.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.04	.03	.01	49.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.04	.03	.01	55.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.04	.03	.01	66.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.04	.03	.01	72.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.05	.03	.02	81.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.03	.02	100.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.03	.02	120.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.03	.02	139.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.03	.02	152.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.06	.03	.03	169.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.06	.03	.03	182.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.06	.03	.03	199.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.06	.03	.03	213.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.03	.04	234.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.03	.04	258.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.03	.04	283.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.03	.04	307.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.03	.05	329.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.03	.05	346.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.03	.06	370.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.03	.06	393.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.03	.06	415.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.03	.06	431.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.03	.08	463.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.13	.03	.10	515.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.03	.11	605.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.03	.12	701.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.03	.14	789.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.20	.03	.17	896.	*	1	1730	211	.00	.00	.00	0.

1	0535	68	.07	.03	.04	946.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.03	.00	882.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	519.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	322.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	225.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	159.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	111.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	74.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	47.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	30.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	20.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	17.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	15.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	12.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	10.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	7.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	4.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	1.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.

1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

TOTAL RAINFALL = 3.49, TOTAL LOSS = 1.86, TOTAL EXCESS = 1.63

PEAK FLOW + (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
946.	5.58	(CFS)	181.	46.	46.	46.
		(INCHES)	1.619	1.632	1.632	1.632
		(AC-FT)	90.	91.	91.	91.

CUMULATIVE AREA = 1.04 SQ MI

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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	101	946.	5.58	181.	46.	46.	1.04		

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

**3 – Smith Creek Proposed Condition
100-yr/6-hr
(HEC-1 Output)**


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*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 21JUL06 TIME 16:37:14
*
*****

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

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X   X XXXXXXX XXXXX   X
X   X X   X   X   X   XX
X   X X   X   X   X   X
XXXXXXX XXXX   X   XXXXX X
X   X 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

HEC-1 INPUT

PAGE 1

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

*** FREE ***

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1      ID  RBF Consulting
2      ID
3      ID  *****
4      ID  PROPOSED CONDITION ANALYSIS
5      ID  BANNING - 100-yr/6-Hr
6      ID  *****
7      ID
8      ID  February 19, 2006
9      ID  Filename: SCP6hr.in/SC6hr.dat (Revised Upper Basin grading) Debris Volume IN
10     ID  Concentration Point: Smith Creek @ Wilson St.
11     ID  Unit Hydrograph - Find Qex via modification to basins.
12     ID  BASED ON SOUTHERN CALIFORNIA INTERMEDIATE STORM
13     ID
      *DIAGRAM

```

*** NOLIST ***

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT

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

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

```

16      101
      V
      V
38      DB-1
      V
      V
44      R101-102
      .
      .
47      .      102
      .      .
      .      .
66      HC-1.....
      V
      V
69      DB-2
      V
      V
75      R102-103
      .
      .
78      .      103
      .      .
      .      .
96      HC-2.....
      V
      V
99      R103-104
      .
      .
102     .      104
      .      .
      .      .
120     .      .      105
      .      .      .
      .      .      .
137     HC-3.....

```

****) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*****
*                                     *
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*      JUN  1998                  *
*      VERSION 4.1                 *
*                                     *
* RUN DATE  21JUL06  TIME 16:37:14 *
*                                     *
*****

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

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RBF Consulting

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*****
PROPOSED CONDITION ANALYSIS
BANNING - 100-yr/6-Hr
*****

```

February 19, 2006

Filename: SCP6hr.in/SC6hr.dat (Revised Upper Basin grading) Debris Volume IN

Concentration Point: Smith Creek @ Wilson St.

Unit Hydrograph - Find Qex via modification to basins.

BASED ON SOUTHERN CALIFORNIA INTERMEDIATE STORM

15 IO

OUTPUT CONTROL VARIABLES

IPRNT 0 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE

IT

HYDROGRAPH TIME DATA

NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 1 0 ENDING DATE
NDTIME 2355 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS

ENGLISH UNITS

DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-FEET
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

*** **

16 KK

* *
* 101 *
* *

101 HYDROGRAPH DEVELOPMENT AREA "S-1" NODE 100 TO 101
POINT RAINFALL DEPTH = 3.50 INCHES
DEPTH-AREA REDUCTION FACTOR = 0.992
F = 0.297 IN/HR
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

22 BA

SUBBASIN CHARACTERISTICS

TAREA 3.04 SUBBASIN AREA

PRECIPITATION DATA

23 PB

STORM 3.47 BASIN TOTAL PRECIPITATION

24 PI

INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

32 LU

UNIFORM LOSS RATE

STRTL .00 INITIAL LOSS
 CNSTL .33 UNIFORM LOSS RATE
 RTIMP 10.00 PERCENT IMPERVIOUS AREA

32 UI

INPUT UNITGRAPH, 37 ORDINATES, VOLUME = 1.00

652.0	1032.0	1394.0	2317.0	5231.0	3303.0	1807.0	1331.0	1103.0	839.0
740.0	628.0	519.0	437.0	394.0	335.0	260.0	245.0	155.0	146.0
146.0	68.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
31.2	31.2	31.2	31.2	31.2	31.2	12.5			

HYDROGRAPH AT STATION 101

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1	.00	.00	.00	0.	*	1	1200	145	.00	.00	.00	0.		
1	0005	2	.02	.02	.00	1.	*	1	1205	146	.00	.00	.00	0.		
1	0010	3	.02	.02	.00	3.	*	1	1210	147	.00	.00	.00	0.		
1	0015	4	.02	.02	.00	6.	*	1	1215	148	.00	.00	.00	0.		
1	0020	5	.02	.02	.00	10.	*	1	1220	149	.00	.00	.00	0.		
1	0025	6	.02	.02	.00	20.	*	1	1225	150	.00	.00	.00	0.		
1	0030	7	.02	.02	.00	28.	*	1	1230	151	.00	.00	.00	0.		
1	0035	8	.02	.02	.00	33.	*	1	1235	152	.00	.00	.00	0.		
1	0040	9	.02	.02	.00	36.	*	1	1240	153	.00	.00	.00	0.		
1	0045	10	.02	.02	.00	39.	*	1	1245	154	.00	.00	.00	0.		
1	0050	11	.02	.02	.00	43.	*	1	1250	155	.00	.00	.00	0.		
1	0055	12	.02	.02	.00	46.	*	1	1255	156	.00	.00	.00	0.		
1	0100	13	.03	.02	.00	48.	*	1	1300	157	.00	.00	.00	0.		
1	0105	14	.03	.02	.00	50.	*	1	1305	158	.00	.00	.00	0.		
1	0110	15	.03	.02	.00	52.	*	1	1310	159	.00	.00	.00	0.		
1	0115	16	.03	.02	.00	55.	*	1	1315	160	.00	.00	.00	0.		
1	0120	17	.03	.02	.00	59.	*	1	1320	161	.00	.00	.00	0.		
1	0125	18	.03	.02	.00	62.	*	1	1325	162	.00	.00	.00	0.		
1	0130	19	.03	.02	.00	63.	*	1	1330	163	.00	.00	.00	0.		
1	0135	20	.03	.02	.00	65.	*	1	1335	164	.00	.00	.00	0.		
1	0140	21	.03	.02	.00	66.	*	1	1340	165	.00	.00	.00	0.		
1	0145	22	.03	.02	.00	67.	*	1	1345	166	.00	.00	.00	0.		
1	0150	23	.03	.02	.00	67.	*	1	1350	167	.00	.00	.00	0.		
1	0155	24	.03	.02	.00	68.	*	1	1355	168	.00	.00	.00	0.		
1	0200	25	.03	.02	.01	70.	*	1	1400	169	.00	.00	.00	0.		
1	0205	26	.03	.02	.00	72.	*	1	1405	170	.00	.00	.00	0.		
1	0210	27	.03	.02	.01	76.	*	1	1410	171	.00	.00	.00	0.		
1	0215	28	.03	.02	.01	83.	*	1	1415	172	.00	.00	.00	0.		
1	0220	29	.03	.02	.01	98.	*	1	1420	173	.00	.00	.00	0.		

1	0225	30	.03	.02	.01	100.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.03	.02	.01	113.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.03	.02	.01	123.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.03	.02	.01	129.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.03	.02	.01	135.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.03	.02	.01	142.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.03	.02	.01	149.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.03	.02	.01	160.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.03	.02	.01	180.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.04	.02	.01	195.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.04	.02	.01	206.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.04	.02	.01	217.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.04	.02	.02	232.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.05	.02	.02	260.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.02	.02	285.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.02	.02	311.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.02	.03	351.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.02	.03	398.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.06	.02	.03	445.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.06	.02	.03	483.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.06	.02	.03	526.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.06	.02	.04	566.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.02	.04	612.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.02	.04	657.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.02	.05	712.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.02	.05	772.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.02	.05	835.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.02	.06	900.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.02	.06	963.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.02	.06	1016.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.02	.06	1075.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.02	.07	1140.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.02	.08	1213.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.12	.02	.10	1292.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.02	.11	1394.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.02	.12	1526.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.02	.14	1729.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.19	.02	.17	1980.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.02	.04	2141.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.02	.01	2230.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	2285.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	2233.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	1672.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	1186.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	918.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	751.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	619.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	521.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	436.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	365.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	306.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	257.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	213.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	174.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	142.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	111.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	90.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	73.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	53.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	42.	*	1	1920	233	.00	.00	.00	0.

1	0725	90	.00	.00	.00	38.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	36.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	34.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	33.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	31.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	29.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	27.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	25.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	23.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	20.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	16.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	13.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	9.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	4.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	1.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

*

TOTAL RAINFALL = 3.47, TOTAL LOSS = 1.68, TOTAL EXCESS = 1.79

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
2285.	5.75	572.	147.	147.	147.
		(INCHES) 1.751	1.787	1.787	1.787
		(AC-FT) 284.	290.	290.	290.

CUMULATIVE AREA = 3.04 SQ MI

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 * *
 38 KK * DB-1 *
 * *

DETENTION BASIN 101 (Basin lowered to 2850 w/ .5% slope, bottom of spillway=2

HYDROGRAPH ROUTING DATA

40 RS	STORAGE ROUTING						
	NSTPS	1 NUMBER OF SUBREACHES					
	ITYP	ELEV	TYPE OF INITIAL CONDITION				
	RSVRIC	2856.00	INITIAL CONDITION				
	X	.00	WORKING R AND D COEFFICIENT				
41 SV	STORAGE	.0	14.3	29.5	45.4	62.3	97.8
42 SE	ELEVATION	2856.00	2857.00	2858.00	2859.00	2860.00	2862.00
43 SQ	DISCHARGE	0.	57.	202.	446.	803.	1903.

HYDROGRAPH AT STATION DB-1

* * *																						
DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
* * *																						
1	0000	1	0.	.0	2856.0	*	1	0800	97	176.	26.7	2857.8	*	1	1600	193	7.	1.7	2856.1			
1	0005	2	0.	.0	2856.0	*	1	0805	98	166.	25.7	2857.8	*	1	1605	194	6.	1.6	2856.1			
1	0010	3	0.	.0	2856.0	*	1	0810	99	157.	24.8	2857.7	*	1	1610	195	6.	1.6	2856.1			
1	0015	4	0.	.0	2856.0	*	1	0815	100	148.	23.8	2857.6	*	1	1615	196	6.	1.5	2856.1			
1	0020	5	0.	.1	2856.0	*	1	0820	101	140.	23.0	2857.6	*	1	1620	197	6.	1.5	2856.1			
1	0025	6	1.	.2	2856.0	*	1	0825	102	131.	22.1	2857.5	*	1	1625	198	6.	1.5	2856.1			
1	0030	7	1.	.4	2856.0	*	1	0830	103	123.	21.3	2857.5	*	1	1630	199	6.	1.4	2856.1			
1	0035	8	2.	.6	2856.0	*	1	0835	104	116.	20.5	2857.4	*	1	1635	200	5.	1.4	2856.1			
1	0040	9	3.	.8	2856.1	*	1	0840	105	108.	19.7	2857.4	*	1	1640	201	5.	1.3	2856.1			
1	0045	10	4.	1.0	2856.1	*	1	0845	106	101.	19.0	2857.3	*	1	1645	202	5.	1.3	2856.1			
1	0050	11	5.	1.3	2856.1	*	1	0850	107	95.	18.3	2857.3	*	1	1650	203	5.	1.3	2856.1			
1	0055	12	6.	1.5	2856.1	*	1	0855	108	89.	17.7	2857.2	*	1	1655	204	5.	1.2	2856.1			
1	0100	13	7.	1.8	2856.1	*	1	0900	109	83.	17.1	2857.2	*	1	1700	205	5.	1.2	2856.1			

1	0105	14	8.	2.1	2856.1	*	1	0905	110	78.	16.5	2857.1	*	1	1705	206	5.	1.2	2856.1
1	0110	15	10.	2.4	2856.2	*	1	0910	111	73.	16.0	2857.1	*	1	1710	207	5.	1.1	2856.1
1	0115	16	11.	2.7	2856.2	*	1	0915	112	68.	15.5	2857.1	*	1	1715	208	4.	1.1	2856.1
1	0120	17	12.	3.0	2856.2	*	1	0920	113	64.	15.0	2857.0	*	1	1720	209	4.	1.1	2856.1
1	0125	18	13.	3.3	2856.2	*	1	0925	114	60.	14.6	2857.0	*	1	1725	210	4.	1.0	2856.1
1	0130	19	15.	3.7	2856.3	*	1	0930	115	57.	14.2	2857.0	*	1	1730	211	4.	1.0	2856.1
1	0135	20	16.	4.0	2856.3	*	1	0935	116	55.	13.8	2857.0	*	1	1735	212	4.	1.0	2856.1
1	0140	21	17.	4.3	2856.3	*	1	0940	117	54.	13.5	2856.9	*	1	1740	213	4.	1.0	2856.1
1	0145	22	19.	4.7	2856.3	*	1	0945	118	52.	13.1	2856.9	*	1	1745	214	4.	.9	2856.1
1	0150	23	20.	5.0	2856.3	*	1	0950	119	51.	12.7	2856.9	*	1	1750	215	4.	.9	2856.1
1	0155	24	21.	5.3	2856.4	*	1	0955	120	49.	12.4	2856.9	*	1	1755	216	4.	.9	2856.1
1	0200	25	22.	5.6	2856.4	*	1	1000	121	48.	12.1	2856.8	*	1	1800	217	3.	.9	2856.1
1	0205	26	24.	6.0	2856.4	*	1	1005	122	47.	11.7	2856.8	*	1	1805	218	3.	.8	2856.1
1	0210	27	25.	6.3	2856.4	*	1	1010	123	45.	11.4	2856.8	*	1	1810	219	3.	.8	2856.1
1	0215	28	27.	6.7	2856.5	*	1	1015	124	44.	11.1	2856.8	*	1	1815	220	3.	.8	2856.1
1	0220	29	28.	7.1	2856.5	*	1	1020	125	43.	10.8	2856.8	*	1	1820	221	3.	.8	2856.1
1	0225	30	30.	7.6	2856.5	*	1	1025	126	42.	10.5	2856.7	*	1	1825	222	3.	.8	2856.1
1	0230	31	32.	8.1	2856.6	*	1	1030	127	41.	10.2	2856.7	*	1	1830	223	3.	.7	2856.1
1	0235	32	35.	8.7	2856.6	*	1	1035	128	40.	9.9	2856.7	*	1	1835	224	3.	.7	2856.0
1	0240	33	37.	9.3	2856.7	*	1	1040	129	39.	9.7	2856.7	*	1	1840	225	3.	.7	2856.0
1	0245	34	40.	10.0	2856.7	*	1	1045	130	38.	9.4	2856.7	*	1	1845	226	3.	.7	2856.0
1	0250	35	42.	10.6	2856.7	*	1	1050	131	37.	9.2	2856.6	*	1	1850	227	3.	.7	2856.0
1	0255	36	45.	11.3	2856.8	*	1	1055	132	36.	8.9	2856.6	*	1	1855	228	3.	.6	2856.0
1	0300	37	48.	12.1	2856.8	*	1	1100	133	35.	8.7	2856.6	*	1	1900	229	2.	.6	2856.0
1	0305	38	51.	12.9	2856.9	*	1	1105	134	34.	8.4	2856.6	*	1	1905	230	2.	.6	2856.0
1	0310	39	55.	13.8	2857.0	*	1	1110	135	33.	8.2	2856.6	*	1	1910	231	2.	.6	2856.0
1	0315	40	62.	14.8	2857.0	*	1	1115	136	32.	8.0	2856.6	*	1	1915	232	2.	.6	2856.0
1	0320	41	71.	15.8	2857.1	*	1	1120	137	31.	7.8	2856.5	*	1	1920	233	2.	.6	2856.0
1	0325	42	81.	16.8	2857.2	*	1	1125	138	30.	7.6	2856.5	*	1	1925	234	2.	.5	2856.0
1	0330	43	92.	17.9	2857.2	*	1	1130	139	29.	7.4	2856.5	*	1	1930	235	2.	.5	2856.0
1	0335	44	103.	19.1	2857.3	*	1	1135	140	29.	7.2	2856.5	*	1	1935	236	2.	.5	2856.0
1	0340	45	115.	20.4	2857.4	*	1	1140	141	28.	7.0	2856.5	*	1	1940	237	2.	.5	2856.0
1	0345	46	129.	21.9	2857.5	*	1	1145	142	27.	6.8	2856.5	*	1	1945	238	2.	.5	2856.0
1	0350	47	145.	23.5	2857.6	*	1	1150	143	26.	6.6	2856.5	*	1	1950	239	2.	.5	2856.0
1	0355	48	162.	25.3	2857.7	*	1	1155	144	26.	6.4	2856.4	*	1	1955	240	2.	.5	2856.0
1	0400	49	181.	27.4	2857.9	*	1	1200	145	25.	6.2	2856.4	*	1	2000	241	2.	.4	2856.0
1	0405	50	202.	29.5	2858.0	*	1	1205	146	24.	6.1	2856.4	*	1	2005	242	2.	.4	2856.0
1	0410	51	237.	31.8	2858.1	*	1	1210	147	24.	5.9	2856.4	*	1	2010	243	2.	.4	2856.0
1	0415	52	272.	34.1	2858.3	*	1	1215	148	23.	5.7	2856.4	*	1	2015	244	2.	.4	2856.0
1	0420	53	308.	36.4	2858.4	*	1	1220	149	22.	5.6	2856.4	*	1	2020	245	2.	.4	2856.0
1	0425	54	346.	38.9	2858.6	*	1	1225	150	22.	5.4	2856.4	*	1	2025	246	2.	.4	2856.0
1	0430	55	386.	41.5	2858.8	*	1	1230	151	21.	5.3	2856.4	*	1	2030	247	2.	.4	2856.0
1	0435	56	428.	44.2	2858.9	*	1	1235	152	21.	5.1	2856.4	*	1	2035	248	1.	.4	2856.0
1	0440	57	481.	47.1	2859.1	*	1	1240	153	20.	5.0	2856.4	*	1	2040	249	1.	.4	2856.0
1	0445	58	542.	49.9	2859.3	*	1	1245	154	19.	4.9	2856.3	*	1	2045	250	1.	.3	2856.0
1	0450	59	603.	52.8	2859.4	*	1	1250	155	19.	4.7	2856.3	*	1	2050	251	1.	.3	2856.0
1	0455	60	663.	55.7	2859.6	*	1	1255	156	18.	4.6	2856.3	*	1	2055	252	1.	.3	2856.0
1	0500	61	723.	58.5	2859.8	*	1	1300	157	18.	4.5	2856.3	*	1	2100	253	1.	.3	2856.0
1	0505	62	785.	61.4	2859.9	*	1	1305	158	17.	4.4	2856.3	*	1	2105	254	1.	.3	2856.0
1	0510	63	867.	64.4	2860.1	*	1	1310	159	17.	4.2	2856.3	*	1	2110	255	1.	.3	2856.0
1	0515	64	959.	67.3	2860.3	*	1	1315	160	16.	4.1	2856.3	*	1	2115	256	1.	.3	2856.0
1	0520	65	1055.	70.4	2860.5	*	1	1320	161	16.	4.0	2856.3	*	1	2120	257	1.	.3	2856.0
1	0525	66	1166.	74.0	2860.7	*	1	1325	162	16.	3.9	2856.3	*	1	2125	258	1.	.3	2856.0
1	0530	67	1299.	78.3	2860.9	*	1	1330	163	15.	3.8	2856.3	*	1	2130	259	1.	.3	2856.0
1	0535	68	1446.	83.0	2861.2	*	1	1335	164	15.	3.7	2856.3	*	1	2135	260	1.	.3	2856.0
1	0540	69	1588.	87.6	2861.4	*	1	1340	165	14.	3.6	2856.3	*	1	2140	261	1.	.3	2856.0
1	0545	70	1717.	91.8	2861.7	*	1	1345	166	14.	3.5	2856.2	*	1	2145	262	1.	.3	2856.0
1	0550	71	1822.	95.2	2861.9	*	1	1350	167	14.	3.4	2856.2	*	1	2150	263	1.	.2	2856.0
1	0555	72	1847.	96.0	2861.9	*	1	1355	168	13.	3.3	2856.2	*	1	2155	264	1.	.2	2856.0
1	0600	73	1766.	93.4	2861.8	*	1	1400	169	13.	3.2	2856.2	*	1	2200	265	1.	.2	2856.0

1	0605	74	1629.	88.9	2861.5	*	1	1405	170	13.	3.1	2856.2	*	1	2205	266	1.	.2	2856.0
1	0610	75	1475.	84.0	2861.2	*	1	1410	171	12.	3.1	2856.2	*	1	2210	267	1.	.2	2856.0
1	0615	76	1323.	79.1	2860.9	*	1	1415	172	12.	3.0	2856.2	*	1	2215	268	1.	.2	2856.0
1	0620	77	1178.	74.4	2860.7	*	1	1420	173	12.	2.9	2856.2	*	1	2220	269	1.	.2	2856.0
1	0625	78	1043.	70.0	2860.4	*	1	1425	174	11.	2.8	2856.2	*	1	2225	270	1.	.2	2856.0
1	0630	79	919.	66.0	2860.2	*	1	1430	175	11.	2.7	2856.2	*	1	2230	271	1.	.2	2856.0
1	0635	80	807.	62.4	2860.0	*	1	1435	176	11.	2.7	2856.2	*	1	2235	272	1.	.2	2856.0
1	0640	81	734.	59.0	2859.8	*	1	1440	177	10.	2.6	2856.2	*	1	2240	273	1.	.2	2856.0
1	0645	82	667.	55.8	2859.6	*	1	1445	178	10.	2.5	2856.2	*	1	2245	274	1.	.2	2856.0
1	0650	83	602.	52.8	2859.4	*	1	1450	179	10.	2.5	2856.2	*	1	2250	275	1.	.2	2856.0
1	0655	84	542.	50.0	2859.3	*	1	1455	180	10.	2.4	2856.2	*	1	2255	276	1.	.2	2856.0
1	0700	85	486.	47.3	2859.1	*	1	1500	181	9.	2.3	2856.2	*	1	2300	277	1.	.2	2856.0
1	0705	86	437.	44.8	2859.0	*	1	1505	182	9.	2.3	2856.2	*	1	2305	278	1.	.2	2856.0
1	0710	87	401.	42.5	2858.8	*	1	1510	183	9.	2.2	2856.2	*	1	2310	279	1.	.2	2856.0
1	0715	88	367.	40.3	2858.7	*	1	1515	184	9.	2.1	2856.1	*	1	2315	280	1.	.2	2856.0
1	0720	89	335.	38.2	2858.5	*	1	1520	185	8.	2.1	2856.1	*	1	2320	281	1.	.1	2856.0
1	0725	90	305.	36.2	2858.4	*	1	1525	186	8.	2.0	2856.1	*	1	2325	282	1.	.1	2856.0
1	0730	91	278.	34.5	2858.3	*	1	1530	187	8.	2.0	2856.1	*	1	2330	283	1.	.1	2856.0
1	0735	92	254.	32.9	2858.2	*	1	1535	188	8.	1.9	2856.1	*	1	2335	284	1.	.1	2856.0
1	0740	93	232.	31.4	2858.1	*	1	1540	189	7.	1.9	2856.1	*	1	2340	285	1.	.1	2856.0
1	0745	94	212.	30.1	2858.0	*	1	1545	190	7.	1.8	2856.1	*	1	2345	286	1.	.1	2856.0
1	0750	95	197.	28.9	2858.0	*	1	1550	191	7.	1.8	2856.1	*	1	2350	287	1.	.1	2856.0
1	0755	96	186.	27.8	2857.9	*	1	1555	192	7.	1.7	2856.1	*	1	2355	288	0.	.1	2856.0

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
+	(CFS)	(HR)				
		(CFS)				
	1847.	5.92	542.	146.	146.	146.
		(INCHES)	1.659	1.786	1.786	1.786
		(AC-FT)	269.	290.	290.	290.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	23.92-HR
	(AC-FT)	(HR)				
	96.	5.92	44.	14.	14.	14.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	23.92-HR
+	(FEET)	(HR)				
	2861.90	5.92	2858.86	2856.90	2856.90	2856.90

CUMULATIVE AREA = 3.04 SQ MI

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ROUTE HYDROGRAPH FROM DB1 TO 102 (CHANNEL)

HYDROGRAPH ROUTING DATA

46 RD

MUSKINGUM-CUNGE CHANNEL ROUTING

L 2200. CHANNEL LENGTH
 S .0160 SLOPE
 N .030 CHANNEL ROUGHNESS COEFFICIENT
 CA .00 CONTRIBUTING AREA
 SHAPE TRAP CHANNEL SHAPE
 WD 60.00 BOTTOM WIDTH OR DIAMETER
 Z 2.00 SIDE SLOPE

COMPUTED MUSKINGUM-CUNGE PARAMETERS

ELEMENT	ALPHA	COMPUTATION TIME STEP			PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
		M	DT (MIN)	DX (FT)				
MAIN	.52	1.59	2.76	1100.00	1840.54	356.20	1.79	13.28

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.52	1.59	5.00	1835.42	355.00	1.79
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .2895E+03 EXCESS= .0000E+00 OUTFLOW= .2895E+03 BASIN STORAGE= .4994E-01 PERCENT ERROR= .0

HYDROGRAPH AT STATION R101-102

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0600	73	1801.	*	1	1200	145	26.	*	1	1800	217	4.	
1	0005	2	0.	*	1	0605	74	1689.	*	1	1205	146	25.	*	1	1805	218	3.	
1	0010	3	0.	*	1	0610	75	1545.	*	1	1210	147	24.	*	1	1810	219	3.	
1	0015	4	0.	*	1	0615	76	1395.	*	1	1215	148	24.	*	1	1815	220	3.	
1	0020	5	0.	*	1	0620	77	1249.	*	1	1220	149	23.	*	1	1820	221	3.	
1	0025	6	0.	*	1	0625	78	1113.	*	1	1225	150	22.	*	1	1825	222	3.	
1	0030	7	1.	*	1	0630	79	986.	*	1	1230	151	22.	*	1	1830	223	3.	
1	0035	8	1.	*	1	0635	80	870.	*	1	1235	152	21.	*	1	1835	224	3.	
1	0040	9	2.	*	1	0640	81	775.	*	1	1240	153	21.	*	1	1840	225	3.	
1	0045	10	3.	*	1	0645	82	708.	*	1	1245	154	20.	*	1	1845	226	3.	
1	0050	11	4.	*	1	0650	83	643.	*	1	1250	155	20.	*	1	1850	227	3.	
1	0055	12	5.	*	1	0655	84	582.	*	1	1255	156	19.	*	1	1855	228	3.	
1	0100	13	6.	*	1	0700	85	524.	*	1	1300	157	19.	*	1	1900	229	3.	
1	0105	14	7.	*	1	0705	86	471.	*	1	1305	158	18.	*	1	1905	230	3.	
1	0110	15	8.	*	1	0710	87	427.	*	1	1310	159	18.	*	1	1910	231	2.	
1	0115	16	9.	*	1	0715	88	393.	*	1	1315	160	17.	*	1	1915	232	2.	
1	0120	17	10.	*	1	0720	89	360.	*	1	1320	161	17.	*	1	1920	233	2.	
1	0125	18	11.	*	1	0725	90	329.	*	1	1325	162	16.	*	1	1925	234	2.	
1	0130	19	13.	*	1	0730	91	301.	*	1	1330	163	16.	*	1	1930	235	2.	
1	0135	20	14.	*	1	0735	92	275.	*	1	1335	164	15.	*	1	1935	236	2.	
1	0140	21	15.	*	1	0740	93	252.	*	1	1340	165	15.	*	1	1940	237	2.	
1	0145	22	17.	*	1	0745	94	231.	*	1	1345	166	15.	*	1	1945	238	2.	

1	0150	23	18.	*	1	0750	95	212.	*	1	1350	167	14.	*	1	1950	239	2.
1	0155	24	19.	*	1	0755	96	197.	*	1	1355	168	14.	*	1	1955	240	2.
1	0200	25	21.	*	1	0800	97	186.	*	1	1400	169	13.	*	1	2000	241	2.
1	0205	26	22.	*	1	0805	98	176.	*	1	1405	170	13.	*	1	2005	242	2.
1	0210	27	23.	*	1	0810	99	167.	*	1	1410	171	13.	*	1	2010	243	2.
1	0215	28	25.	*	1	0815	100	157.	*	1	1415	172	12.	*	1	2015	244	2.
1	0220	29	26.	*	1	0820	101	149.	*	1	1420	173	12.	*	1	2020	245	2.
1	0225	30	28.	*	1	0825	102	140.	*	1	1425	174	12.	*	1	2025	246	2.
1	0230	31	30.	*	1	0830	103	132.	*	1	1430	175	11.	*	1	2030	247	2.
1	0235	32	32.	*	1	0835	104	124.	*	1	1435	176	11.	*	1	2035	248	2.
1	0240	33	34.	*	1	0840	105	117.	*	1	1440	177	11.	*	1	2040	249	1.
1	0245	34	36.	*	1	0845	106	109.	*	1	1445	178	10.	*	1	2045	250	1.
1	0250	35	39.	*	1	0850	107	103.	*	1	1450	179	10.	*	1	2050	251	1.
1	0255	36	42.	*	1	0855	108	96.	*	1	1455	180	10.	*	1	2055	252	1.
1	0300	37	44.	*	1	0900	109	90.	*	1	1500	181	10.	*	1	2100	253	1.
1	0305	38	47.	*	1	0905	110	84.	*	1	1505	182	9.	*	1	2105	254	1.
1	0310	39	51.	*	1	0910	111	79.	*	1	1510	183	9.	*	1	2110	255	1.
1	0315	40	54.	*	1	0915	112	74.	*	1	1515	184	9.	*	1	2115	256	1.
1	0320	41	61.	*	1	0920	113	69.	*	1	1520	185	9.	*	1	2120	257	1.
1	0325	42	69.	*	1	0925	114	65.	*	1	1525	186	8.	*	1	2125	258	1.
1	0330	43	79.	*	1	0930	115	61.	*	1	1530	187	8.	*	1	2130	259	1.
1	0335	44	90.	*	1	0935	116	57.	*	1	1535	188	8.	*	1	2135	260	1.
1	0340	45	101.	*	1	0940	117	55.	*	1	1540	189	8.	*	1	2140	261	1.
1	0345	46	114.	*	1	0945	118	54.	*	1	1545	190	8.	*	1	2145	262	1.
1	0350	47	127.	*	1	0950	119	53.	*	1	1550	191	7.	*	1	2150	263	1.
1	0355	48	143.	*	1	0955	120	51.	*	1	1555	192	7.	*	1	2155	264	1.
1	0400	49	161.	*	1	1000	121	50.	*	1	1600	193	7.	*	1	2200	265	1.
1	0405	50	181.	*	1	1005	122	48.	*	1	1605	194	7.	*	1	2205	266	1.
1	0410	51	205.	*	1	1010	123	47.	*	1	1610	195	7.	*	1	2210	267	1.
1	0415	52	240.	*	1	1015	124	46.	*	1	1615	196	6.	*	1	2215	268	1.
1	0420	53	277.	*	1	1020	125	45.	*	1	1620	197	6.	*	1	2220	269	1.
1	0425	54	315.	*	1	1025	126	43.	*	1	1625	198	6.	*	1	2225	270	1.
1	0430	55	354.	*	1	1030	127	42.	*	1	1630	199	6.	*	1	2230	271	1.
1	0435	56	396.	*	1	1035	128	41.	*	1	1635	200	6.	*	1	2235	272	1.
1	0440	57	443.	*	1	1040	129	40.	*	1	1640	201	6.	*	1	2240	273	1.
1	0445	58	500.	*	1	1045	130	39.	*	1	1645	202	5.	*	1	2245	274	1.
1	0450	59	563.	*	1	1050	131	38.	*	1	1650	203	5.	*	1	2250	275	1.
1	0455	60	625.	*	1	1055	132	37.	*	1	1655	204	5.	*	1	2255	276	1.
1	0500	61	686.	*	1	1100	133	36.	*	1	1700	205	5.	*	1	2300	277	1.
1	0505	62	748.	*	1	1105	134	35.	*	1	1705	206	5.	*	1	2305	278	1.
1	0510	63	819.	*	1	1110	135	34.	*	1	1710	207	5.	*	1	2310	279	1.
1	0515	64	908.	*	1	1115	136	33.	*	1	1715	208	5.	*	1	2315	280	1.
1	0520	65	1003.	*	1	1120	137	32.	*	1	1720	209	4.	*	1	2320	281	1.
1	0525	66	1109.	*	1	1125	138	31.	*	1	1725	210	4.	*	1	2325	282	1.
1	0530	67	1233.	*	1	1130	139	30.	*	1	1730	211	4.	*	1	2330	283	1.
1	0535	68	1376.	*	1	1135	140	30.	*	1	1735	212	4.	*	1	2335	284	1.
1	0540	69	1523.	*	1	1140	141	29.	*	1	1740	213	4.	*	1	2340	285	1.
1	0545	70	1661.	*	1	1145	142	28.	*	1	1745	214	4.	*	1	2345	286	1.
1	0550	71	1776.	*	1	1150	143	27.	*	1	1750	215	4.	*	1	2350	287	1.
1	0555	72	1835.	*	1	1155	144	26.	*	1	1755	216	4.	*	1	2355	288	1.
				*					*					*				

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
1835.	5.92	(CFS)	542.	146.	146.
		(INCHES)	1.658	1.786	1.786
		(AC-FT)	269.	290.	290.

CUMULATIVE AREA = 3.04 SQ MI

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* 102 *

102 HYDROGRAPH DEVELOPMENT AREA "S-2"
F = 0.296 IN/HR, Depth Area Red = .996
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

51 BA SUBBASIN CHARACTERISTICS
TAREA 1.08 SUBBASIN AREA

PRECIPITATION DATA

52 PB STORM 3.49 BASIN TOTAL PRECIPITATION

53 PI INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

61 LU UNIFORM LOSS RATE
STRTL .00 INITIAL LOSS
CNSTL .33 UNIFORM LOSS RATE
RTIMP 10.00 PERCENT IMPERVIOUS AREA

61 UI INPUT UNITGRAPH, 19 ORDINATES, VOLUME = 1.00

594.0	1298.0	3038.0	1119.0	693.0	488.0	341.0	259.0	181.0	109.0
79.0	22.1	22.1	22.1	22.1	22.1	22.1	22.1	5.9	

HYDROGRAPH AT STATION 102

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1		.00	.00	.00	0.	*	1	1200	145		.00	.00	.00	0.
1	0005	2		.02	.02	.00	1.	*	1	1205	146		.00	.00	.00	0.

1	0010	3	.02	.02	.00	4.	*	1	1210	147	.00	.00	.00	0.
1	0015	4	.02	.02	.00	9.	*	1	1215	148	.00	.00	.00	0.
1	0020	5	.02	.02	.00	12.	*	1	1220	149	.00	.00	.00	0.
1	0025	6	.02	.02	.00	14.	*	1	1225	150	.00	.00	.00	0.
1	0030	7	.02	.02	.00	15.	*	1	1230	151	.00	.00	.00	0.
1	0035	8	.02	.02	.00	16.	*	1	1235	152	.00	.00	.00	0.
1	0040	9	.02	.02	.00	18.	*	1	1240	153	.00	.00	.00	0.
1	0045	10	.02	.02	.00	19.	*	1	1245	154	.00	.00	.00	0.
1	0050	11	.02	.02	.00	19.	*	1	1250	155	.00	.00	.00	0.
1	0055	12	.02	.02	.00	20.	*	1	1255	156	.00	.00	.00	0.
1	0100	13	.03	.02	.00	20.	*	1	1300	157	.00	.00	.00	0.
1	0105	14	.03	.02	.00	22.	*	1	1305	158	.00	.00	.00	0.
1	0110	15	.03	.02	.00	24.	*	1	1310	159	.00	.00	.00	0.
1	0115	16	.03	.02	.00	25.	*	1	1315	160	.00	.00	.00	0.
1	0120	17	.03	.02	.00	26.	*	1	1320	161	.00	.00	.00	0.
1	0125	18	.03	.02	.00	26.	*	1	1325	162	.00	.00	.00	0.
1	0130	19	.03	.02	.00	26.	*	1	1330	163	.00	.00	.00	0.
1	0135	20	.03	.02	.00	27.	*	1	1335	164	.00	.00	.00	0.
1	0140	21	.03	.02	.00	27.	*	1	1340	165	.00	.00	.00	0.
1	0145	22	.03	.02	.00	27.	*	1	1345	166	.00	.00	.00	0.
1	0150	23	.03	.02	.00	27.	*	1	1350	167	.00	.00	.00	0.
1	0155	24	.03	.02	.00	27.	*	1	1355	168	.00	.00	.00	0.
1	0200	25	.03	.02	.01	29.	*	1	1400	169	.00	.00	.00	0.
1	0205	26	.03	.02	.00	32.	*	1	1405	170	.00	.00	.00	0.
1	0210	27	.03	.02	.01	40.	*	1	1410	171	.00	.00	.00	0.
1	0215	28	.03	.02	.01	38.	*	1	1415	172	.00	.00	.00	0.
1	0220	29	.03	.02	.01	47.	*	1	1420	173	.00	.00	.00	0.
1	0225	30	.03	.02	.01	50.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.03	.02	.01	52.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.03	.02	.01	53.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.03	.02	.01	54.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.03	.02	.01	57.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.03	.02	.01	62.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.03	.02	.01	73.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.03	.02	.01	77.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.03	.02	.01	79.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.04	.02	.01	83.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.04	.02	.01	89.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.04	.02	.01	101.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.04	.02	.02	107.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.05	.02	.02	117.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.02	.02	136.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.02	.02	156.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.02	.03	176.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.02	.03	190.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.06	.02	.03	208.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.06	.02	.03	221.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.06	.02	.03	239.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.06	.02	.04	253.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.02	.04	275.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.02	.05	300.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.02	.05	325.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.02	.05	350.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.02	.05	373.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.02	.06	391.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.02	.06	415.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.02	.06	440.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.02	.06	462.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.02	.07	479.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.02	.08	512.	*	1	1705	206	.00	.00	.00	0.

1	0510	63	.13	.02	.10	564.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.02	.11	656.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.02	.12	755.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.02	.14	847.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.20	.02	.17	955.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.02	.04	1008.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.02	.01	959.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	583.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	369.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	255.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	181.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	128.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	87.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	56.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	37.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	23.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	19.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	17.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	14.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	12.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	9.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	6.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	2.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	1.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.

1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

*

TOTAL RAINFALL = 3.49, TOTAL LOSS = 1.68, TOTAL EXCESS = 1.81

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
+ 1008.	5.58	209.	53.	53.	53.
	(INCHES)	1.796	1.809	1.809	1.809
	(AC-FT)	103.	104.	104.	104.

CUMULATIVE AREA = 1.08 SQ MI

*** **

66 KK

*
* HC-1 *
*

COMBINE HYDROGRAPHS BASIN 101 & AREA "S-2"

68 HC

HYDROGRAPH COMBINATION

1COMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION HC-1
SUM OF 2 HYDROGRAPHS

					*						*						*						
DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	
					*						*						*						
1		0000	1	0.	*	1		0600	73	1982.	*	1		1200	145	26.	*	1		1800	217	4.	
1		0005	2	1.	*	1		0605	74	1817.	*	1		1205	146	25.	*	1		1805	218	3.	
1		0010	3	4.	*	1		0610	75	1632.	*	1		1210	147	24.	*	1		1810	219	3.	
1		0015	4	9.	*	1		0615	76	1451.	*	1		1215	148	24.	*	1		1815	220	3.	
1		0020	5	12.	*	1		0620	77	1286.	*	1		1220	149	23.	*	1		1820	221	3.	
1		0025	6	14.	*	1		0625	78	1136.	*	1		1225	150	22.	*	1		1825	222	3.	
1		0030	7	16.	*	1		0630	79	1005.	*	1		1230	151	22.	*	1		1830	223	3.	
1		0035	8	17.	*	1		0635	80	886.	*	1		1235	152	21.	*	1		1835	224	3.	
1		0040	9	20.	*	1		0640	81	789.	*	1		1240	153	21.	*	1		1840	225	3.	
1		0045	10	21.	*	1		0645	82	719.	*	1		1245	154	20.	*	1		1845	226	3.	
1		0050	11	23.	*	1		0650	83	652.	*	1		1250	155	20.	*	1		1850	227	3.	
1		0055	12	24.	*	1		0655	84	588.	*	1		1255	156	19.	*	1		1855	228	3.	
1		0100	13	26.	*	1		0700	85	526.	*	1		1300	157	19.	*	1		1900	229	3.	
1		0105	14	28.	*	1		0705	86	472.	*	1		1305	158	18.	*	1		1905	230	3.	
1		0110	15	32.	*	1		0710	87	427.	*	1		1310	159	18.	*	1		1910	231	2.	
1		0115	16	34.	*	1		0715	88	393.	*	1		1315	160	17.	*	1		1915	232	2.	
1		0120	17	36.	*	1		0720	89	360.	*	1		1320	161	17.	*	1		1920	233	2.	
1		0125	18	38.	*	1		0725	90	329.	*	1		1325	162	16.	*	1		1925	234	2.	
1		0130	19	39.	*	1		0730	91	301.	*	1		1330	163	16.	*	1		1930	235	2.	
1		0135	20	41.	*	1		0735	92	275.	*	1		1335	164	15.	*	1		1935	236	2.	
1		0140	21	42.	*	1		0740	93	252.	*	1		1340	165	15.	*	1		1940	237	2.	
1		0145	22	44.	*	1		0745	94	231.	*	1		1345	166	15.	*	1		1945	238	2.	
1		0150	23	45.	*	1		0750	95	212.	*	1		1350	167	14.	*	1		1950	239	2.	
1		0155	24	46.	*	1		0755	96	197.	*	1		1355	168	14.	*	1		1955	240	2.	
1		0200	25	50.	*	1		0800	97	186.	*	1		1400	169	13.	*	1		2000	241	2.	
1		0205	26	54.	*	1		0805	98	176.	*	1		1405	170	13.	*	1		2005	242	2.	
1		0210	27	63.	*	1		0810	99	167.	*	1		1410	171	13.	*	1		2010	243	2.	
1		0215	28	62.	*	1		0815	100	157.	*	1		1415	172	12.	*	1		2015	244	2.	
1		0220	29	73.	*	1		0820	101	149.	*	1		1420	173	12.	*	1		2020	245	2.	
1		0225	30	78.	*	1		0825	102	140.	*	1		1425	174	12.	*	1		2025	246	2.	
1		0230	31	82.	*	1		0830	103	132.	*	1		1430	175	11.	*	1		2030	247	2.	
1		0235	32	85.	*	1		0835	104	124.	*	1		1435	176	11.	*	1		2035	248	2.	
1		0240	33	88.	*	1		0840	105	117.	*	1		1440	177	11.	*	1		2040	249	1.	
1		0245	34	93.	*	1		0845	106	109.	*	1		1445	178	10.	*	1		2045	250	1.	
1		0250	35	101.	*	1		0850	107	103.	*	1		1450	179	10.	*	1		2050	251	1.	
1		0255	36	114.	*	1		0855	108	96.	*	1		1455	180	10.	*	1		2055	252	1.	
1		0300	37	121.	*	1		0900	109	90.	*	1		1500	181	10.	*	1		2100	253	1.	
1		0305	38	127.	*	1		0905	110	84.	*	1		1505	182	9.	*	1		2105	254	1.	
1		0310	39	134.	*	1		0910	111	79.	*	1		1510	183	9.	*	1		2110	255	1.	
1		0315	40	143.	*	1		0915	112	74.	*	1		1515	184	9.	*	1		2115	256	1.	
1		0320	41	161.	*	1		0920	113	69.	*	1		1520	185	9.	*	1		2120	257	1.	
1		0325	42	177.	*	1		0925	114	65.	*	1		1525	186	8.	*	1		2125	258	1.	
1		0330	43	196.	*	1		0930	115	61.	*	1		1530	187	8.	*	1		2130	259	1.	
1		0335	44	226.	*	1		0935	116	57.	*	1		1535	188	8.	*	1		2135	260	1.	
1		0340	45	258.	*	1		0940	117	55.	*	1		1540	189	8.	*	1		2140	261	1.	
1		0345	46	290.	*	1		0945	118	54.	*	1		1545	190	8.	*	1		2145	262	1.	
1		0350	47	317.	*	1		0950	119	53.	*	1		1550	191	7.	*	1		2150	263	1.	
1		0355	48	351.	*	1		0955	120	51.	*	1		1555	192	7.	*	1		2155	264	1.	
1		0400	49	382.	*	1		1000	121	50.	*	1		1600	193	7.	*	1		2200	265	1.	
1		0405	50	420.	*	1		1005	122	48.	*	1		1605	194	7.	*	1		2205	266	1.	
1		0410	51	458.	*	1		1010	123	47.	*	1		1610	195	7.	*	1		2210	267	1.	
1		0415	52	515.	*	1		1015	124	46.	*	1		1615	196	6.	*	1		2215	268	1.	
1		0420	53	577.	*	1		1020	125	45.	*	1		1620	197	6.	*	1		2220	269	1.	
1		0425	54	640.	*	1		1025	126	43.	*	1		1625	198	6.	*	1		2225	270	1.	
1		0430	55	705.	*	1		1030	127	42.	*	1		1630	199	6.	*	1		2230	271	1.	
1		0435	56	769.	*	1		1035	128	41.	*	1		1635	200	6.	*	1		2235	272	1.	

1	0440	57	834.	*	1	1040	129	40.	*	1	1640	201	6.	*	1	2240	273	1.
1	0445	58	915.	*	1	1045	130	39.	*	1	1645	202	5.	*	1	2245	274	1.
1	0450	59	1002.	*	1	1050	131	38.	*	1	1650	203	5.	*	1	2250	275	1.
1	0455	60	1087.	*	1	1055	132	37.	*	1	1655	204	5.	*	1	2255	276	1.
1	0500	61	1165.	*	1	1100	133	36.	*	1	1700	205	5.	*	1	2300	277	1.
1	0505	62	1260.	*	1	1105	134	35.	*	1	1705	206	5.	*	1	2305	278	1.
1	0510	63	1384.	*	1	1110	135	34.	*	1	1710	207	5.	*	1	2310	279	1.
1	0515	64	1564.	*	1	1115	136	33.	*	1	1715	208	5.	*	1	2315	280	1.
1	0520	65	1758.	*	1	1120	137	32.	*	1	1720	209	4.	*	1	2320	281	1.
1	0525	66	1955.	*	1	1125	138	31.	*	1	1725	210	4.	*	1	2325	282	1.
1	0530	67	2188.	*	1	1130	139	30.	*	1	1730	211	4.	*	1	2330	283	1.
1	0535	68	2384.	*	1	1135	140	30.	*	1	1735	212	4.	*	1	2335	284	1.
1	0540	69	2482.	*	1	1140	141	29.	*	1	1740	213	4.	*	1	2340	285	1.
1	0545	70	2244.	*	1	1145	142	28.	*	1	1745	214	4.	*	1	2345	286	1.
1	0550	71	2145.	*	1	1150	143	27.	*	1	1750	215	4.	*	1	2350	287	1.
1	0555	72	2090.	*	1	1155	144	26.	*	1	1755	216	4.	*	1	2355	288	1.
			*					*					*					

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
2482.	5.67	736.	199.	199.	199.
		(CFS)			
		(INCHES)	1.662	1.792	1.792
		(AC-FT)	365.	394.	394.

CUMULATIVE AREA = 4.12 SQ MI

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69 KK * DB-2 *
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DETENTION BASIN 102

HYDROGRAPH ROUTING DATA

71 RS	STORAGE ROUTING											
	NSTPS	1	NUMBER OF SUBREACHES									
	ITYP	ELEV	TYPE OF INITIAL CONDITION									
	RSVRIC	2742.00	INITIAL CONDITION									
	X	.00	WORKING R AND D COEFFICIENT									
72 SV	STORAGE	.0	.3	1.3	1.5	3.2	5.6	8.3	11.2	14.3	17.6	
73 SE	ELEVATION	2742.00	2743.00	2744.00	2744.10	2745.00	2746.00	2747.00	2748.00	2749.00	2750.00	
74 SQ	DISCHARGE	0.	20.	72.	82.	265.	518.	836.	1226.	1710.	2276.	

WARNING --- ROUTED OUTFLOW (2373.) IS GREATER THAN MAXIMUM OUTFLOW (2276.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (2366.) IS GREATER THAN MAXIMUM OUTFLOW (2276.) IN STORAGE-OUTFLOW TABLE

HYDROGRAPH AT STATION DB-2

*****															*****														
DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE							
*****															*****														
1		0000	1	0.	.0	2742.0	*	1		0800	97	205.	2.6	2744.7	*	1		1600	193	7.	.1	2742.4							
1		0005	2	0.	.0	2742.0	*	1		0805	98	192.	2.5	2744.6	*	1		1605	194	7.	.1	2742.4							
1		0010	3	1.	.0	2742.1	*	1		0810	99	181.	2.4	2744.6	*	1		1610	195	7.	.1	2742.4							
1		0015	4	3.	.0	2742.2	*	1		0815	100	171.	2.3	2744.5	*	1		1615	196	7.	.1	2742.3							
1		0020	5	6.	.1	2742.3	*	1		0820	101	162.	2.2	2744.5	*	1		1620	197	7.	.1	2742.3							
1		0025	6	9.	.1	2742.4	*	1		0825	102	153.	2.1	2744.4	*	1		1625	198	6.	.1	2742.3							
1		0030	7	11.	.2	2742.6	*	1		0830	103	144.	2.1	2744.4	*	1		1630	199	6.	.1	2742.3							
1		0035	8	13.	.2	2742.7	*	1		0835	104	136.	2.0	2744.4	*	1		1635	200	6.	.1	2742.3							
1		0040	9	15.	.2	2742.8	*	1		0840	105	128.	1.9	2744.3	*	1		1640	201	6.	.1	2742.3							
1		0045	10	17.	.3	2742.9	*	1		0845	106	120.	1.8	2744.3	*	1		1645	202	6.	.1	2742.3							
1		0050	11	19.	.3	2743.0	*	1		0850	107	113.	1.8	2744.3	*	1		1650	203	6.	.1	2742.3							
1		0055	12	21.	.3	2743.0	*	1		0855	108	106.	1.7	2744.2	*	1		1655	204	5.	.1	2742.3							
1		0100	13	22.	.3	2743.0	*	1		0900	109	99.	1.6	2744.2	*	1		1700	205	5.	.1	2742.3							
1		0105	14	23.	.4	2743.1	*	1		0905	110	93.	1.6	2744.2	*	1		1705	206	5.	.1	2742.3							
1		0110	15	25.	.4	2743.1	*	1		0910	111	87.	1.5	2744.1	*	1		1710	207	5.	.1	2742.3							
1		0115	16	28.	.4	2743.2	*	1		0915	112	81.	1.5	2744.1	*	1		1715	208	5.	.1	2742.2							
1		0120	17	30.	.5	2743.2	*	1		0920	113	78.	1.4	2744.1	*	1		1720	209	5.	.1	2742.2							
1		0125	18	32.	.5	2743.2	*	1		0925	114	74.	1.3	2744.0	*	1		1725	210	5.	.1	2742.2							
1		0130	19	34.	.6	2743.3	*	1		0930	115	70.	1.3	2744.0	*	1		1730	211	5.	.1	2742.2							
1		0135	20	36.	.6	2743.3	*	1		0935	116	67.	1.2	2743.9	*	1		1735	212	4.	.1	2742.2							
1		0140	21	37.	.6	2743.3	*	1		0940	117	64.	1.1	2743.8	*	1		1740	213	4.	.1	2742.2							
1		0145	22	39.	.7	2743.4	*	1		0945	118	61.	1.1	2743.8	*	1		1745	214	4.	.1	2742.2							
1		0150	23	41.	.7	2743.4	*	1		0950	119	59.	1.0	2743.7	*	1		1750	215	4.	.1	2742.2							
1		0155	24	42.	.7	2743.4	*	1		0955	120	57.	1.0	2743.7	*	1		1755	216	4.	.1	2742.2							
1		0200	25	44.	.8	2743.5	*	1		1000	121	55.	1.0	2743.7	*	1		1800	217	4.	.1	2742.2							
1		0205	26	46.	.8	2743.5	*	1		1005	122	53.	.9	2743.6	*	1		1805	218	4.	.1	2742.2							
1		0210	27	50.	.9	2743.6	*	1		1010	123	51.	.9	2743.6	*	1		1810	219	4.	.1	2742.2							
1		0215	28	54.	1.0	2743.7	*	1		1015	124	50.	.9	2743.6	*	1		1815	220	4.	.1	2742.2							
1		0220	29	58.	1.0	2743.7	*	1		1020	125	48.	.8	2743.6	*	1		1820	221	3.	.1	2742.2							
1		0225	30	63.	1.1	2743.8	*	1		1025	126	47.	.8	2743.5	*	1		1825	222	3.	.0	2742.2							
1		0230	31	68.	1.2	2743.9	*	1		1030	127	46.	.8	2743.5	*	1		1830	223	3.	.0	2742.2							
1		0235	32	73.	1.3	2744.0	*	1		1035	128	45.	.8	2743.5	*	1		1835	224	3.	.0	2742.2							
1		0240	33	78.	1.4	2744.1	*	1		1040	129	43.	.7	2743.5	*	1		1840	225	3.	.0	2742.2							
1		0245	34	83.	1.5	2744.1	*	1		1045	130	42.	.7	2743.4	*	1		1845	226	3.	.0	2742.2							
1		0250	35	90.	1.5	2744.1	*	1		1050	131	41.	.7	2743.4	*	1		1850	227	3.	.0	2742.1							
1		0255	36	100.	1.6	2744.2	*	1		1055	132	40.	.7	2743.4	*	1		1855	228	3.	.0	2742.1							
1		0300	37	109.	1.7	2744.2	*	1		1100	133	39.	.7	2743.4	*	1		1900	229	3.	.0	2742.1							
1		0305	38	117.	1.8	2744.3	*	1		1105	134	38.	.6	2743.3	*	1		1905	230	3.	.0	2742.1							
1		0310	39	124.	1.9	2744.3	*	1		1110	135	37.	.6	2743.3	*	1		1910	231	3.	.0	2742.1							
1		0315	40	132.	1.9	2744.3	*	1		1115	136	36.	.6	2743.3	*	1		1915	232	3.	.0	2742.1							
1		0320	41	143.	2.0	2744.4	*	1		1120	137	35.	.6	2743.3	*	1		1920	233	2.	.0	2742.1							
1		0325	42	157.	2.2	2744.5	*	1		1125	138	34.	.6	2743.3	*	1		1925	234	2.	.0	2742.1							
1		0330	43	172.	2.3	2744.5	*	1		1130	139	33.	.5	2743.3	*	1		1930	235	2.	.0	2742.1							
1		0335	44	193.	2.5	2744.6	*	1		1135	140	32.	.5	2743.2	*	1		1935	236	2.	.0	2742.1							
1		0340	45	219.	2.8	2744.8	*	1		1140	141	31.	.5	2743.2	*	1		1940	237	2.	.0	2742.1							
1		0345	46	248.	3.0	2744.9	*	1		1145	142	30.	.5	2743.2	*	1		1945	238	2.	.0	2742.1							
1		0350	47	277.	3.3	2745.0	*	1		1150	143	29.	.5	2743.2	*	1		1950	239	2.	.0	2742.1							

1	0355	48	307.	3.6	2745.2 *	1	1155	144	29.	.5	2743.2 *	1	1955	240	2.	.0	2742.1
1	0400	49	339.	3.9	2745.3 *	1	1200	145	28.	.4	2743.2 *	1	2000	241	2.	.0	2742.1
1	0405	50	372.	4.2	2745.4 *	1	1205	146	27.	.4	2743.1 *	1	2005	242	2.	.0	2742.1
1	0410	51	407.	4.6	2745.6 *	1	1210	147	26.	.4	2743.1 *	1	2010	243	2.	.0	2742.1
1	0415	52	449.	5.0	2745.7 *	1	1215	148	26.	.4	2743.1 *	1	2015	244	2.	.0	2742.1
1	0420	53	500.	5.5	2745.9 *	1	1220	149	25.	.4	2743.1 *	1	2020	245	2.	.0	2742.1
1	0425	54	562.	6.0	2746.1 *	1	1225	150	24.	.4	2743.1 *	1	2025	246	2.	.0	2742.1
1	0430	55	627.	6.5	2746.3 *	1	1230	151	24.	.4	2743.1 *	1	2030	247	2.	.0	2742.1
1	0435	56	691.	7.1	2746.5 *	1	1235	152	23.	.4	2743.1 *	1	2035	248	2.	.0	2742.1
1	0440	57	756.	7.6	2746.7 *	1	1240	153	22.	.3	2743.1 *	1	2040	249	2.	.0	2742.1
1	0445	58	825.	8.2	2747.0 *	1	1245	154	22.	.3	2743.0 *	1	2045	250	2.	.0	2742.1
1	0450	59	909.	8.8	2747.2 *	1	1250	155	21.	.3	2743.0 *	1	2050	251	2.	.0	2742.1
1	0455	60	995.	9.5	2747.4 *	1	1255	156	21.	.3	2743.0 *	1	2055	252	1.	.0	2742.1
1	0500	61	1078.	10.1	2747.6 *	1	1300	157	20.	.3	2743.0 *	1	2100	253	1.	.0	2742.1
1	0505	62	1164.	10.7	2747.8 *	1	1305	158	20.	.3	2743.0 *	1	2105	254	1.	.0	2742.1
1	0510	63	1268.	11.4	2748.1 *	1	1310	159	19.	.3	2743.0 *	1	2110	255	1.	.0	2742.1
1	0515	64	1411.	12.4	2748.4 *	1	1315	160	18.	.3	2742.9 *	1	2115	256	1.	.0	2742.1
1	0520	65	1585.	13.5	2748.7 *	1	1320	161	18.	.3	2742.9 *	1	2120	257	1.	.0	2742.1
1	0525	66	1778.	14.7	2749.1 *	1	1325	162	17.	.3	2742.9 *	1	2125	258	1.	.0	2742.1
1	0530	67	1994.	16.0	2749.5 *	1	1330	163	17.	.2	2742.9 *	1	2130	259	1.	.0	2742.1
1	0535	68	2208.	17.2	2749.9 *	1	1335	164	16.	.2	2742.8 *	1	2135	260	1.	.0	2742.1
1	0540	69	2373.	18.2	2750.2 *	1	1340	165	16.	.2	2742.8 *	1	2140	261	1.	.0	2742.1
1	0545	70	2366.	18.2	2750.2 *	1	1345	166	15.	.2	2742.8 *	1	2145	262	1.	.0	2742.1
1	0550	71	2240.	17.4	2749.9 *	1	1350	167	15.	.2	2742.8 *	1	2150	263	1.	.0	2742.1
1	0555	72	2150.	16.9	2749.8 *	1	1355	168	15.	.2	2742.7 *	1	2155	264	1.	.0	2742.1
1	0600	73	2066.	16.4	2749.6 *	1	1400	169	14.	.2	2742.7 *	1	2200	265	1.	.0	2742.1
1	0605	74	1944.	15.7	2749.4 *	1	1405	170	14.	.2	2742.7 *	1	2205	266	1.	.0	2742.1
1	0610	75	1782.	14.7	2749.1 *	1	1410	171	13.	.2	2742.7 *	1	2210	267	1.	.0	2742.0
1	0615	76	1611.	13.6	2748.8 *	1	1415	172	13.	.2	2742.7 *	1	2215	268	1.	.0	2742.0
1	0620	77	1442.	12.6	2748.4 *	1	1420	173	13.	.2	2742.6 *	1	2220	269	1.	.0	2742.0
1	0625	78	1281.	11.5	2748.1 *	1	1425	174	12.	.2	2742.6 *	1	2225	270	1.	.0	2742.0
1	0630	79	1142.	10.5	2747.8 *	1	1430	175	12.	.2	2742.6 *	1	2230	271	1.	.0	2742.0
1	0635	80	1017.	9.6	2747.5 *	1	1435	176	12.	.2	2742.6 *	1	2235	272	1.	.0	2742.0
1	0640	81	903.	8.8	2747.2 *	1	1440	177	11.	.2	2742.6 *	1	2240	273	1.	.0	2742.0
1	0645	82	810.	8.1	2746.9 *	1	1445	178	11.	.2	2742.6 *	1	2245	274	1.	.0	2742.0
1	0650	83	737.	7.5	2746.7 *	1	1450	179	11.	.2	2742.5 *	1	2250	275	1.	.0	2742.0
1	0655	84	669.	6.9	2746.5 *	1	1455	180	11.	.2	2742.5 *	1	2255	276	1.	.0	2742.0
1	0700	85	603.	6.3	2746.3 *	1	1500	181	10.	.2	2742.5 *	1	2300	277	1.	.0	2742.0
1	0705	86	542.	5.8	2746.1 *	1	1505	182	10.	.1	2742.5 *	1	2305	278	1.	.0	2742.0
1	0710	87	491.	5.4	2745.9 *	1	1510	183	10.	.1	2742.5 *	1	2310	279	1.	.0	2742.0
1	0715	88	448.	5.0	2745.7 *	1	1515	184	9.	.1	2742.5 *	1	2315	280	1.	.0	2742.0
1	0720	89	410.	4.6	2745.6 *	1	1520	185	9.	.1	2742.5 *	1	2320	281	1.	.0	2742.0
1	0725	90	376.	4.3	2745.4 *	1	1525	186	9.	.1	2742.5 *	1	2325	282	1.	.0	2742.0
1	0730	91	344.	4.0	2745.3 *	1	1530	187	9.	.1	2742.4 *	1	2330	283	1.	.0	2742.0
1	0735	92	314.	3.7	2745.2 *	1	1535	188	8.	.1	2742.4 *	1	2335	284	1.	.0	2742.0
1	0740	93	287.	3.4	2745.1 *	1	1540	189	8.	.1	2742.4 *	1	2340	285	1.	.0	2742.0
1	0745	94	263.	3.2	2745.0 *	1	1545	190	8.	.1	2742.4 *	1	2345	286	1.	.0	2742.0
1	0750	95	241.	3.0	2744.9 *	1	1550	191	8.	.1	2742.4 *	1	2350	287	1.	.0	2742.0
1	0755	96	221.	2.8	2744.8 *	1	1555	192	8.	.1	2742.4 *	1	2355	288	1.	.0	2742.0

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PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	23.92-HR	
2373.	5.67	736.	199.	199.	199.	
		(INCHES)	1.661	1.792	1.792	1.792
		(AC-FT)	365.	394.	394.	394.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	23.92-HR
(AC-FT)	(HR)				
18.	5.67	7.	2.	2.	2.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	23.92-HR
+	(FEET)				
	(HR)				
2750.17	5.67	2746.31	2743.60	2743.60	2743.60

CUMULATIVE AREA = 4.12 SQ MI

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 75 KK * R102-103 *
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ROUTE HYDROGRAPH FROM DB2 TO 103

HYDROGRAPH ROUTING DATA

77 RD MUSKINGUM-CUNGE CHANNEL ROUTING

L	4049.	CHANNEL LENGTH
S	.0250	SLOPE
N	.030	CHANNEL ROUGHNESS COEFFICIENT
CA	.00	CONTRIBUTING AREA
SHAPE	TRAP	CHANNEL SHAPE
WD	80.00	BOTTOM WIDTH OR DIAMETER
Z	2.00	SIDE SLOPE

COMPUTED MUSKINGUM-CUNGE PARAMETERS

ELEMENT	ALPHA	COMPUTATION TIME STEP			PEAK	TIME TO PEAK	VOLUME	MAXIMUM CELERITY
		M	DT	DX				
			(MIN)	(FT)	(CFS)	(MIN)	(IN)	(FPS)
MAIN	.52	1.61	4.37	2024.50	2379.36	345.08	1.79	15.45

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.52	1.61	5.00	2377.60	345.00	1.79
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .3938E+03 EXCESS= .0000E+00 OUTFLOW= .3938E+03 BASIN STORAGE= .9971E-01 PERCENT ERROR= .0

HYDROGRAPH AT STATION R102-103

					*						*						*						
DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	
					*						*						*						
1		0000	1	0.	*	1		0600	73	2122.	*	1		1200	145	30.	*	1		1800	217	4.	
1		0005	2	0.	*	1		0605	74	2027.	*	1		1205	146	29.	*	1		1805	218	4.	
1		0010	3	0.	*	1		0610	75	1898.	*	1		1210	147	28.	*	1		1810	219	4.	
1		0015	4	0.	*	1		0615	76	1741.	*	1		1215	148	27.	*	1		1815	220	4.	
1		0020	5	1.	*	1		0620	77	1575.	*	1		1220	149	27.	*	1		1820	221	4.	
1		0025	6	2.	*	1		0625	78	1413.	*	1		1225	150	26.	*	1		1825	222	4.	
1		0030	7	5.	*	1		0630	79	1263.	*	1		1230	151	25.	*	1		1830	223	3.	
1		0035	8	8.	*	1		0635	80	1130.	*	1		1235	152	24.	*	1		1835	224	3.	
1		0040	9	10.	*	1		0640	81	1011.	*	1		1240	153	24.	*	1		1840	225	3.	
1		0045	10	12.	*	1		0645	82	904.	*	1		1245	154	23.	*	1		1845	226	3.	
1		0050	11	15.	*	1		0650	83	814.	*	1		1250	155	23.	*	1		1850	227	3.	
1		0055	12	17.	*	1		0655	84	740.	*	1		1255	156	22.	*	1		1855	228	3.	
1		0100	13	19.	*	1		0700	85	675.	*	1		1300	157	21.	*	1		1900	229	3.	
1		0105	14	20.	*	1		0705	86	612.	*	1		1305	158	21.	*	1		1905	230	3.	
1		0110	15	22.	*	1		0710	87	554.	*	1		1310	159	20.	*	1		1910	231	3.	
1		0115	16	23.	*	1		0715	88	503.	*	1		1315	160	20.	*	1		1915	232	3.	
1		0120	17	25.	*	1		0720	89	459.	*	1		1320	161	19.	*	1		1920	233	3.	
1		0125	18	27.	*	1		0725	90	421.	*	1		1325	162	18.	*	1		1925	234	3.	
1		0130	19	30.	*	1		0730	91	387.	*	1		1330	163	18.	*	1		1930	235	3.	
1		0135	20	32.	*	1		0735	92	356.	*	1		1335	164	17.	*	1		1935	236	2.	
1		0140	21	34.	*	1		0740	93	327.	*	1		1340	165	17.	*	1		1940	237	2.	
1		0145	22	36.	*	1		0745	94	300.	*	1		1345	166	16.	*	1		1945	238	2.	
1		0150	23	37.	*	1		0750	95	276.	*	1		1350	167	16.	*	1		1950	239	2.	
1		0155	24	39.	*	1		0755	96	253.	*	1		1355	168	16.	*	1		1955	240	2.	
1		0200	25	41.	*	1		0800	97	233.	*	1		1400	169	15.	*	1		2000	241	2.	
1		0205	26	42.	*	1		0805	98	216.	*	1		1405	170	15.	*	1		2005	242	2.	
1		0210	27	44.	*	1		0810	99	202.	*	1		1410	171	14.	*	1		2010	243	2.	
1		0215	28	47.	*	1		0815	100	190.	*	1		1415	172	14.	*	1		2015	244	2.	
1		0220	29	50.	*	1		0820	101	179.	*	1		1420	173	14.	*	1		2020	245	2.	
1		0225	30	54.	*	1		0825	102	169.	*	1		1425	174	13.	*	1		2025	246	2.	
1		0230	31	58.	*	1		0830	103	160.	*	1		1430	175	13.	*	1		2030	247	2.	
1		0235	32	63.	*	1		0835	104	151.	*	1		1435	176	12.	*	1		2035	248	2.	
1		0240	33	68.	*	1		0840	105	142.	*	1		1440	177	12.	*	1		2040	249	2.	
1		0245	34	73.	*	1		0845	106	134.	*	1		1445	178	12.	*	1		2045	250	2.	
1		0250	35	78.	*	1		0850	107	126.	*	1		1450	179	12.	*	1		2050	251	2.	
1		0255	36	84.	*	1		0855	108	119.	*	1		1455	180	11.	*	1		2055	252	2.	
1		0300	37	92.	*	1		0900	109	112.	*	1		1500	181	11.	*	1		2100	253	2.	
1		0305	38	101.	*	1		0905	110	105.	*	1		1505	182	11.	*	1		2105	254	1.	
1		0310	39	110.	*	1		0910	111	98.	*	1		1510	183	10.	*	1		2110	255	1.	
1		0315	40	118.	*	1		0915	112	92.	*	1		1515	184	10.	*	1		2115	256	1.	
1		0320	41	126.	*	1		0920	113	86.	*	1		1520	185	10.	*	1		2120	257	1.	
1		0325	42	134.	*	1		0925	114	81.	*	1		1525	186	10.	*	1		2125	258	1.	
1		0330	43	146.	*	1		0930	115	78.	*	1		1530	187	9.	*	1		2130	259	1.	
1		0335	44	160.	*	1		0935	116	74.	*	1		1535	188	9.	*	1		2135	260	1.	
1		0340	45	178.	*	1		0940	117	70.	*	1		1540	189	9.	*	1		2140	261	1.	
1		0345	46	201.	*	1		0945	118	67.	*	1		1545	190	9.	*	1		2145	262	1.	
1		0350	47	230.	*	1		0950	119	64.	*	1		1550	191	8.	*	1		2150	263	1.	
1		0355	48	261.	*	1		0955	120	61.	*	1		1555	192	8.	*	1		2155	264	1.	
1		0400	49	293.	*	1		1000	121	59.	*	1		1600	193	8.	*	1		2200	265	1.	
1		0405	50	325.	*	1		1005	122	57.	*	1		1605	194	8.	*	1		2205	266	1.	
1		0410	51	360.	*	1		1010	123	55.	*	1		1610	195	7.	*	1		2210	267	1.	
1		0415	52	396.	*	1		1015	124	53.	*	1		1615	196	7.	*	1		2215	268	1.	
1		0420	53	439.	*	1		1020	125	51.	*	1		1620	197	7.	*	1		2220	269	1.	
1		0425	54	490.	*	1		1025	126	50.	*	1		1625	198	7.	*	1		2225	270	1.	
1		0430	55	552.	*	1		1030	127	49.	*	1		1630	199	7.	*	1		2230	271	1.	
1		0435	56	619.	*	1		1035	128	47.	*	1		1635	200	7.	*	1		2235	272	1.	

1	0440	57	687.	*	1	1040	129	46.	*	1	1640	201	6.	*	1	2240	273	1.
1	0445	58	754.	*	1	1045	130	45.	*	1	1645	202	6.	*	1	2245	274	1.
1	0450	59	828.	*	1	1050	131	43.	*	1	1650	203	6.	*	1	2250	275	1.
1	0455	60	912.	*	1	1055	132	42.	*	1	1655	204	6.	*	1	2255	276	1.
1	0500	61	1000.	*	1	1100	133	41.	*	1	1700	205	6.	*	1	2300	277	1.
1	0505	62	1087.	*	1	1105	134	40.	*	1	1705	206	6.	*	1	2305	278	1.
1	0510	63	1178.	*	1	1110	135	39.	*	1	1710	207	5.	*	1	2310	279	1.
1	0515	64	1291.	*	1	1115	136	38.	*	1	1715	208	5.	*	1	2315	280	1.
1	0520	65	1444.	*	1	1120	137	37.	*	1	1720	209	5.	*	1	2320	281	1.
1	0525	66	1631.	*	1	1125	138	36.	*	1	1725	210	5.	*	1	2325	282	1.
1	0530	67	1836.	*	1	1130	139	35.	*	1	1730	211	5.	*	1	2330	283	1.
1	0535	68	2054.	*	1	1135	140	34.	*	1	1735	212	5.	*	1	2335	284	1.
1	0540	69	2255.	*	1	1140	141	33.	*	1	1740	213	5.	*	1	2340	285	1.
1	0545	70	2378.	*	1	1145	142	32.	*	1	1745	214	4.	*	1	2345	286	1.
1	0550	71	2338.	*	1	1150	143	31.	*	1	1750	215	4.	*	1	2350	287	1.
1	0555	72	2213.	*	1	1155	144	30.	*	1	1755	216	4.	*	1	2355	288	1.
			*					*					*					

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
2378.	5.75	(CFS) 736.	199.	199.	199.
		(INCHES) 1.662	1.792	1.792	1.792
		(AC-FT) 365.	394.	394.	394.
CUMULATIVE AREA = 4.12 SQ MI					

*** **

* *
78 KK * 103 *
* *

103 HYDROGRAPH DEVELOPMENT AREA "S-3"
F = 0.237, Depth Area Red = 0.997
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

82 BA SUBBASIN CHARACTERISTICS
TAREA .82 SUBBASIN AREA

PRECIPITATION DATA

83 PB STORM 3.49 BASIN TOTAL PRECIPITATION

84 PI INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80

1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

92 LU UNIFORM LOSS RATE

STRTL	.00	INITIAL LOSS
CNSTL	.26	UNIFORM LOSS RATE
RTIMP	10.00	PERCENT IMPERVIOUS AREA

92 UI INPUT UNITGRAPH, 17 ORDINATES, VOLUME = 1.00

543.0	1422.0	2182.0	752.0	470.0	326.0	231.0	159.0	91.0	52.0
18.9	18.9	18.9	18.9	18.9	18.9	3.6			

HYDROGRAPH AT STATION 103

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
								*								
1		0000	1	.00	.00	.00	0.	*	1		1200	145	.00	.00	.00	0.
1		0005	2	.02	.02	.00	1.	*	1		1205	146	.00	.00	.00	0.
1		0010	3	.02	.02	.00	4.	*	1		1210	147	.00	.00	.00	0.
1		0015	4	.02	.02	.00	8.	*	1		1215	148	.00	.00	.00	0.
1		0020	5	.02	.02	.00	10.	*	1		1220	149	.00	.00	.00	0.
1		0025	6	.02	.02	.00	11.	*	1		1225	150	.00	.00	.00	0.
1		0030	7	.02	.02	.00	13.	*	1		1230	151	.00	.00	.00	0.
1		0035	8	.02	.02	.00	17.	*	1		1235	152	.00	.00	.00	0.
1		0040	9	.02	.02	.00	24.	*	1		1240	153	.00	.00	.00	0.
1		0045	10	.02	.02	.00	26.	*	1		1245	154	.00	.00	.00	0.
1		0050	11	.02	.02	.00	27.	*	1		1250	155	.00	.00	.00	0.
1		0055	12	.02	.02	.00	28.	*	1		1255	156	.00	.00	.00	0.
1		0100	13	.03	.02	.01	30.	*	1		1300	157	.00	.00	.00	0.
1		0105	14	.03	.02	.01	36.	*	1		1305	158	.00	.00	.00	0.
1		0110	15	.03	.02	.01	44.	*	1		1310	159	.00	.00	.00	0.
1		0115	16	.03	.02	.01	47.	*	1		1315	160	.00	.00	.00	0.
1		0120	17	.03	.02	.01	48.	*	1		1320	161	.00	.00	.00	0.
1		0125	18	.03	.02	.01	50.	*	1		1325	162	.00	.00	.00	0.
1		0130	19	.03	.02	.01	50.	*	1		1330	163	.00	.00	.00	0.
1		0135	20	.03	.02	.01	51.	*	1		1335	164	.00	.00	.00	0.
1		0140	21	.03	.02	.01	51.	*	1		1340	165	.00	.00	.00	0.
1		0145	22	.03	.02	.01	52.	*	1		1345	166	.00	.00	.00	0.
1		0150	23	.03	.02	.01	52.	*	1		1350	167	.00	.00	.00	0.
1		0155	24	.03	.02	.01	52.	*	1		1355	168	.00	.00	.00	0.
1		0200	25	.03	.02	.01	54.	*	1		1400	169	.00	.00	.00	0.
1		0205	26	.03	.02	.01	57.	*	1		1405	170	.00	.00	.00	0.
1		0210	27	.03	.02	.01	61.	*	1		1410	171	.00	.00	.00	0.
1		0215	28	.03	.02	.01	61.	*	1		1415	172	.00	.00	.00	0.
1		0220	29	.03	.02	.01	68.	*	1		1420	173	.00	.00	.00	0.
1		0225	30	.03	.02	.01	70.	*	1		1425	174	.00	.00	.00	0.
1		0230	31	.03	.02	.01	72.	*	1		1430	175	.00	.00	.00	0.
1		0235	32	.03	.02	.01	72.	*	1		1435	176	.00	.00	.00	0.
1		0240	33	.03	.02	.01	73.	*	1		1440	177	.00	.00	.00	0.
1		0245	34	.03	.02	.02	75.	*	1		1445	178	.00	.00	.00	0.
1		0250	35	.03	.02	.02	80.	*	1		1450	179	.00	.00	.00	0.
1		0255	36	.03	.02	.02	88.	*	1		1455	180	.00	.00	.00	0.
1		0300	37	.03	.02	.02	91.	*	1		1500	181	.00	.00	.00	0.

1	0305	38	.03	.02	.02	93.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.04	.02	.02	96.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.04	.02	.02	102.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.04	.02	.02	110.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.04	.02	.02	115.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.05	.02	.03	123.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.02	.03	139.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.02	.03	155.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.02	.03	170.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.02	.03	180.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.06	.02	.04	194.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.06	.02	.04	204.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.06	.02	.04	217.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.06	.02	.04	228.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.02	.05	246.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.02	.05	265.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.02	.05	285.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.02	.05	304.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.02	.06	321.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.02	.06	335.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.02	.06	354.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.02	.06	372.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.02	.07	388.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.02	.07	402.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.02	.09	428.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.13	.02	.11	476.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.02	.12	550.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.02	.13	626.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.02	.14	698.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.20	.02	.18	786.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.02	.05	822.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.02	.01	717.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	423.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	264.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	173.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	118.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	78.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	49.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	30.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	19.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	15.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	13.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	10.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	8.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	5.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	2.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	0.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.

1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.
								*						

TOTAL RAINFALL = 3.49, TOTAL LOSS = 1.38, TOTAL EXCESS = 2.11

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
822.	5.58	185.	47.	47.	47.
	(INCHES)	2.093	2.104	2.104	2.104
	(AC-FT)	92.	92.	92.	92.

CUMULATIVE AREA = .82 SQ MI

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96 KK * HC-2 *
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COMBINE HYDROGRAPHS BASIN 102 & AREA "S-3"

98 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION HC-2
SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
					*						*						*					
1		0000	1	0.	*	1		0600	73	2240.	*	1		1200	145	30.	*	1		1800	217	4.
1		0005	2	1.	*	1		0605	74	2105.	*	1		1205	146	29.	*	1		1805	218	4.
1		0010	3	4.	*	1		0610	75	1946.	*	1		1210	147	28.	*	1		1810	219	4.
1		0015	4	8.	*	1		0615	76	1770.	*	1		1215	148	27.	*	1		1815	220	4.
1		0020	5	11.	*	1		0620	77	1594.	*	1		1220	149	27.	*	1		1820	221	4.
1		0025	6	13.	*	1		0625	78	1428.	*	1		1225	150	26.	*	1		1825	222	4.
1		0030	7	18.	*	1		0630	79	1276.	*	1		1230	151	25.	*	1		1830	223	3.
1		0035	8	25.	*	1		0635	80	1141.	*	1		1235	152	24.	*	1		1835	224	3.
1		0040	9	34.	*	1		0640	81	1019.	*	1		1240	153	24.	*	1		1840	225	3.
1		0045	10	38.	*	1		0645	82	909.	*	1		1245	154	23.	*	1		1845	226	3.
1		0050	11	42.	*	1		0650	83	815.	*	1		1250	155	23.	*	1		1850	227	3.
1		0055	12	45.	*	1		0655	84	740.	*	1		1255	156	22.	*	1		1855	228	3.
1		0100	13	49.	*	1		0700	85	675.	*	1		1300	157	21.	*	1		1900	229	3.
1		0105	14	56.	*	1		0705	86	612.	*	1		1305	158	21.	*	1		1905	230	3.
1		0110	15	65.	*	1		0710	87	554.	*	1		1310	159	20.	*	1		1910	231	3.
1		0115	16	70.	*	1		0715	88	503.	*	1		1315	160	20.	*	1		1915	232	3.
1		0120	17	74.	*	1		0720	89	459.	*	1		1320	161	19.	*	1		1920	233	3.
1		0125	18	77.	*	1		0725	90	421.	*	1		1325	162	18.	*	1		1925	234	3.
1		0130	19	80.	*	1		0730	91	387.	*	1		1330	163	18.	*	1		1930	235	3.
1		0135	20	83.	*	1		0735	92	356.	*	1		1335	164	17.	*	1		1935	236	2.
1		0140	21	85.	*	1		0740	93	327.	*	1		1340	165	17.	*	1		1940	237	2.
1		0145	22	87.	*	1		0745	94	300.	*	1		1345	166	16.	*	1		1945	238	2.
1		0150	23	89.	*	1		0750	95	276.	*	1		1350	167	16.	*	1		1950	239	2.
1		0155	24	91.	*	1		0755	96	253.	*	1		1355	168	16.	*	1		1955	240	2.
1		0200	25	94.	*	1		0800	97	233.	*	1		1400	169	15.	*	1		2000	241	2.
1		0205	26	99.	*	1		0805	98	216.	*	1		1405	170	15.	*	1		2005	242	2.
1		0210	27	106.	*	1		0810	99	202.	*	1		1410	171	14.	*	1		2010	243	2.
1		0215	28	108.	*	1		0815	100	190.	*	1		1415	172	14.	*	1		2015	244	2.
1		0220	29	118.	*	1		0820	101	179.	*	1		1420	173	14.	*	1		2020	245	2.
1		0225	30	124.	*	1		0825	102	169.	*	1		1425	174	13.	*	1		2025	246	2.
1		0230	31	130.	*	1		0830	103	160.	*	1		1430	175	13.	*	1		2030	247	2.

1	0235	32	136.	*	1	0835	104	151.	*	1	1435	176	12.	*	1	2035	248	2.
1	0240	33	141.	*	1	0840	105	142.	*	1	1440	177	12.	*	1	2040	249	2.
1	0245	34	149.	*	1	0845	106	134.	*	1	1445	178	12.	*	1	2045	250	2.
1	0250	35	159.	*	1	0850	107	126.	*	1	1450	179	12.	*	1	2050	251	2.
1	0255	36	172.	*	1	0855	108	119.	*	1	1455	180	11.	*	1	2055	252	2.
1	0300	37	183.	*	1	0900	109	112.	*	1	1500	181	11.	*	1	2100	253	2.
1	0305	38	194.	*	1	0905	110	105.	*	1	1505	182	11.	*	1	2105	254	1.
1	0310	39	206.	*	1	0910	111	98.	*	1	1510	183	10.	*	1	2110	255	1.
1	0315	40	220.	*	1	0915	112	92.	*	1	1515	184	10.	*	1	2115	256	1.
1	0320	41	235.	*	1	0920	113	86.	*	1	1520	185	10.	*	1	2120	257	1.
1	0325	42	249.	*	1	0925	114	81.	*	1	1525	186	10.	*	1	2125	258	1.
1	0330	43	269.	*	1	0930	115	78.	*	1	1530	187	9.	*	1	2130	259	1.
1	0335	44	299.	*	1	0935	116	74.	*	1	1535	188	9.	*	1	2135	260	1.
1	0340	45	333.	*	1	0940	117	70.	*	1	1540	189	9.	*	1	2140	261	1.
1	0345	46	371.	*	1	0945	118	67.	*	1	1545	190	9.	*	1	2145	262	1.
1	0350	47	410.	*	1	0950	119	64.	*	1	1550	191	8.	*	1	2150	263	1.
1	0355	48	455.	*	1	0955	120	61.	*	1	1555	192	8.	*	1	2155	264	1.
1	0400	49	497.	*	1	1000	121	59.	*	1	1600	193	8.	*	1	2200	265	1.
1	0405	50	542.	*	1	1005	122	57.	*	1	1605	194	8.	*	1	2205	266	1.
1	0410	51	588.	*	1	1010	123	55.	*	1	1610	195	7.	*	1	2210	267	1.
1	0415	52	642.	*	1	1015	124	53.	*	1	1615	196	7.	*	1	2215	268	1.
1	0420	53	704.	*	1	1020	125	51.	*	1	1620	197	7.	*	1	2220	269	1.
1	0425	54	776.	*	1	1025	126	50.	*	1	1625	198	7.	*	1	2225	270	1.
1	0430	55	856.	*	1	1030	127	49.	*	1	1630	199	7.	*	1	2230	271	1.
1	0435	56	939.	*	1	1035	128	47.	*	1	1635	200	7.	*	1	2235	272	1.
1	0440	57	1021.	*	1	1040	129	46.	*	1	1640	201	6.	*	1	2240	273	1.
1	0445	58	1108.	*	1	1045	130	45.	*	1	1645	202	6.	*	1	2245	274	1.
1	0450	59	1200.	*	1	1050	131	43.	*	1	1650	203	6.	*	1	2250	275	1.
1	0455	60	1300.	*	1	1055	132	42.	*	1	1655	204	6.	*	1	2255	276	1.
1	0500	61	1402.	*	1	1100	133	41.	*	1	1700	205	6.	*	1	2300	277	1.
1	0505	62	1516.	*	1	1105	134	40.	*	1	1705	206	6.	*	1	2305	278	1.
1	0510	63	1654.	*	1	1110	135	39.	*	1	1710	207	5.	*	1	2310	279	1.
1	0515	64	1841.	*	1	1115	136	38.	*	1	1715	208	5.	*	1	2315	280	1.
1	0520	65	2071.	*	1	1120	137	37.	*	1	1720	209	5.	*	1	2320	281	1.
1	0525	66	2328.	*	1	1125	138	36.	*	1	1725	210	5.	*	1	2325	282	1.
1	0530	67	2622.	*	1	1130	139	35.	*	1	1730	211	5.	*	1	2330	283	1.
1	0535	68	2876.	*	1	1135	140	34.	*	1	1735	212	5.	*	1	2335	284	1.
1	0540	69	2972.	*	1	1140	141	33.	*	1	1740	213	5.	*	1	2340	285	1.
1	0545	70	2801.	*	1	1145	142	32.	*	1	1745	214	4.	*	1	2345	286	1.
1	0550	71	2601.	*	1	1150	143	31.	*	1	1750	215	4.	*	1	2350	287	1.
1	0555	72	2387.	*	1	1155	144	30.	*	1	1755	216	4.	*	1	2355	288	1.
			*					*					*					

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
(CFS)	(HR)	(CFS)			
+	2972.	901.	246.	246.	246.
		(INCHES)	1.696	1.844	1.844
		(AC-FT)	447.	486.	486.

CUMULATIVE AREA = 4.94 SQ MI

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 * *
 99 KK * R103-104 *
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ROUTE HYDROGRAPH FROM DB3 TO 104

HYDROGRAPH ROUTING DATA

101 RD MUSKINGUM-CUNGE CHANNEL ROUTING
 L 3560. CHANNEL LENGTH
 S .0270 SLOPE
 N .030 CHANNEL ROUGHNESS COEFFICIENT
 CA .00 CONTRIBUTING AREA
 SHAPE TRAP CHANNEL SHAPE
 WD 80.00 BOTTOM WIDTH OR DIAMETER
 Z 2.00 SIDE SLOPE

COMPUTED MUSKINGUM-CUNGE PARAMETERS

ELEMENT	ALPHA	M	COMPUTATION TIME STEP		PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
			DT (MIN)	DX (FT)				
MAIN	.54	1.61	3.44	1780.00	2938.09	341.01	1.84	17.23

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.54	1.61	5.00		2914.14	340.00	1.84	
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .4858E+03 EXCESS= .0000E+00 OUTFLOW= .4859E+03 BASIN STORAGE= .8943E-01 PERCENT ERROR= .0

HYDROGRAPH AT STATION R103-104

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0600	73	2323.	*	1	1200	145	31.	*	1	1800	217	4.	
1	0005	2	0.	*	1	0605	74	2188.	*	1	1205	146	30.	*	1	1805	218	4.	
1	0010	3	0.	*	1	0610	75	2042.	*	1	1210	147	29.	*	1	1810	219	4.	
1	0015	4	1.	*	1	0615	76	1880.	*	1	1215	148	29.	*	1	1815	220	4.	
1	0020	5	4.	*	1	0620	77	1710.	*	1	1220	149	28.	*	1	1820	221	4.	
1	0025	6	8.	*	1	0625	78	1541.	*	1	1225	150	27.	*	1	1825	222	4.	
1	0030	7	11.	*	1	0630	79	1384.	*	1	1230	151	26.	*	1	1830	223	4.	
1	0035	8	15.	*	1	0635	80	1241.	*	1	1235	152	26.	*	1	1835	224	4.	
1	0040	9	20.	*	1	0640	81	1113.	*	1	1240	153	25.	*	1	1840	225	3.	
1	0045	10	28.	*	1	0645	82	998.	*	1	1245	154	24.	*	1	1845	226	3.	
1	0050	11	35.	*	1	0650	83	895.	*	1	1250	155	24.	*	1	1850	227	3.	
1	0055	12	39.	*	1	0655	84	806.	*	1	1255	156	23.	*	1	1855	228	3.	
1	0100	13	43.	*	1	0700	85	735.	*	1	1300	157	22.	*	1	1900	229	3.	
1	0105	14	46.	*	1	0705	86	670.	*	1	1305	158	22.	*	1	1905	230	3.	

1	0110	15	52.	*	1	0710	87	610.	*	1	1310	159	21.	*	1	1910	231	3.
1	0115	16	60.	*	1	0715	88	555.	*	1	1315	160	21.	*	1	1915	232	3.
1	0120	17	67.	*	1	0720	89	505.	*	1	1320	161	20.	*	1	1920	233	3.
1	0125	18	71.	*	1	0725	90	463.	*	1	1325	162	19.	*	1	1925	234	3.
1	0130	19	75.	*	1	0730	91	426.	*	1	1330	163	19.	*	1	1930	235	3.
1	0135	20	78.	*	1	0735	92	392.	*	1	1335	164	18.	*	1	1935	236	3.
1	0140	21	81.	*	1	0740	93	361.	*	1	1340	165	18.	*	1	1940	237	3.
1	0145	22	84.	*	1	0745	94	333.	*	1	1345	166	17.	*	1	1945	238	2.
1	0150	23	86.	*	1	0750	95	307.	*	1	1350	167	17.	*	1	1950	239	2.
1	0155	24	88.	*	1	0755	96	283.	*	1	1355	168	16.	*	1	1955	240	2.
1	0200	25	90.	*	1	0800	97	261.	*	1	1400	169	16.	*	1	2000	241	2.
1	0205	26	93.	*	1	0805	98	241.	*	1	1405	170	15.	*	1	2005	242	2.
1	0210	27	97.	*	1	0810	99	223.	*	1	1410	171	15.	*	1	2010	243	2.
1	0215	28	102.	*	1	0815	100	207.	*	1	1415	172	15.	*	1	2015	244	2.
1	0220	29	107.	*	1	0820	101	195.	*	1	1420	173	14.	*	1	2020	245	2.
1	0225	30	113.	*	1	0825	102	183.	*	1	1425	174	14.	*	1	2025	246	2.
1	0230	31	121.	*	1	0830	103	173.	*	1	1430	175	13.	*	1	2030	247	2.
1	0235	32	127.	*	1	0835	104	164.	*	1	1435	176	13.	*	1	2035	248	2.
1	0240	33	133.	*	1	0840	105	155.	*	1	1440	177	13.	*	1	2040	249	2.
1	0245	34	139.	*	1	0845	106	146.	*	1	1445	178	12.	*	1	2045	250	2.
1	0250	35	145.	*	1	0850	107	138.	*	1	1450	179	12.	*	1	2050	251	2.
1	0255	36	154.	*	1	0855	108	130.	*	1	1455	180	12.	*	1	2055	252	2.
1	0300	37	166.	*	1	0900	109	122.	*	1	1500	181	11.	*	1	2100	253	2.
1	0305	38	178.	*	1	0905	110	115.	*	1	1505	182	11.	*	1	2105	254	2.
1	0310	39	189.	*	1	0910	111	108.	*	1	1510	183	11.	*	1	2110	255	2.
1	0315	40	201.	*	1	0915	112	101.	*	1	1515	184	11.	*	1	2115	256	2.
1	0320	41	214.	*	1	0920	113	95.	*	1	1520	185	10.	*	1	2120	257	1.
1	0325	42	229.	*	1	0925	114	89.	*	1	1525	186	10.	*	1	2125	258	1.
1	0330	43	244.	*	1	0930	115	84.	*	1	1530	187	10.	*	1	2130	259	1.
1	0335	44	263.	*	1	0935	116	80.	*	1	1535	188	9.	*	1	2135	260	1.
1	0340	45	291.	*	1	0940	117	76.	*	1	1540	189	9.	*	1	2140	261	1.
1	0345	46	326.	*	1	0945	118	72.	*	1	1545	190	9.	*	1	2145	262	1.
1	0350	47	364.	*	1	0950	119	69.	*	1	1550	191	9.	*	1	2150	263	1.
1	0355	48	406.	*	1	0955	120	66.	*	1	1555	192	9.	*	1	2155	264	1.
1	0400	49	451.	*	1	1000	121	63.	*	1	1600	193	8.	*	1	2200	265	1.
1	0405	50	496.	*	1	1005	122	60.	*	1	1605	194	8.	*	1	2205	266	1.
1	0410	51	542.	*	1	1010	123	58.	*	1	1610	195	8.	*	1	2210	267	1.
1	0415	52	590.	*	1	1015	124	56.	*	1	1615	196	8.	*	1	2215	268	1.
1	0420	53	646.	*	1	1020	125	54.	*	1	1620	197	7.	*	1	2220	269	1.
1	0425	54	712.	*	1	1025	126	52.	*	1	1625	198	7.	*	1	2225	270	1.
1	0430	55	786.	*	1	1030	127	51.	*	1	1630	199	7.	*	1	2230	271	1.
1	0435	56	869.	*	1	1035	128	49.	*	1	1635	200	7.	*	1	2235	272	1.
1	0440	57	954.	*	1	1040	129	48.	*	1	1640	201	7.	*	1	2240	273	1.
1	0445	58	1040.	*	1	1045	130	47.	*	1	1645	202	6.	*	1	2245	274	1.
1	0450	59	1130.	*	1	1050	131	45.	*	1	1650	203	6.	*	1	2250	275	1.
1	0455	60	1226.	*	1	1055	132	44.	*	1	1655	204	6.	*	1	2255	276	1.
1	0500	61	1329.	*	1	1100	133	43.	*	1	1700	205	6.	*	1	2300	277	1.
1	0505	62	1437.	*	1	1105	134	42.	*	1	1705	206	6.	*	1	2305	278	1.
1	0510	63	1560.	*	1	1110	135	41.	*	1	1710	207	6.	*	1	2310	279	1.
1	0515	64	1719.	*	1	1115	136	40.	*	1	1715	208	6.	*	1	2315	280	1.
1	0520	65	1930.	*	1	1120	137	38.	*	1	1720	209	5.	*	1	2320	281	1.
1	0525	66	2174.	*	1	1125	138	37.	*	1	1725	210	5.	*	1	2325	282	1.
1	0530	67	2454.	*	1	1130	139	36.	*	1	1730	211	5.	*	1	2330	283	1.
1	0535	68	2734.	*	1	1135	140	35.	*	1	1735	212	5.	*	1	2335	284	1.
1	0540	69	2914.	*	1	1140	141	35.	*	1	1740	213	5.	*	1	2340	285	1.
1	0545	70	2899.	*	1	1145	142	34.	*	1	1745	214	5.	*	1	2345	286	1.
1	0550	71	2709.	*	1	1150	143	33.	*	1	1750	215	5.	*	1	2350	287	1.
1	0555	72	2514.	*	1	1155	144	32.	*	1	1755	216	4.	*	1	2355	288	1.

* * *

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
2914.	5.67	901.	246.	246.	246.
		1.696	1.844	1.844	1.844
		447.	486.	486.	486.

CUMULATIVE AREA = 4.94 SQ MI

*** **

102 KK

*
* 104 *
*

104 HYDROGRAPH DEVELOPMENT AREA "S-4"
F = 0.258
DEPTH AREA REDUCT. = 0.999
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

106 BA

SUBBASIN CHARACTERISTICS
TAREA .50 SUBBASIN AREA

PRECIPITATION DATA

107 PB

STORM 3.50 BASIN TOTAL PRECIPITATION

108 PI

INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

116 LU

UNIFORM LOSS RATE
STRTL .00 INITIAL LOSS
CNSTL .29 UNIFORM LOSS RATE
RTIMP 10.00 PERCENT IMPERVIOUS AREA

116 UI

INPUT UNITGRAPH, 17 ORDINATES, VOLUME = 1.00

310.0	741.0	1398.0	466.0	296.0	211.0	148.0	104.0	68.0	50.0
11.0	11.0	11.0	11.0	11.0	11.0	11.0			

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1200	145	.00	.00	.00	0.
1		0005	2	.02	.02	.00	1.	*	1		1205	146	.00	.00	.00	0.
1		0010	3	.02	.02	.00	2.	*	1		1210	147	.00	.00	.00	0.
1		0015	4	.02	.02	.00	5.	*	1		1215	148	.00	.00	.00	0.
1		0020	5	.02	.02	.00	6.	*	1		1220	149	.00	.00	.00	0.
1		0025	6	.02	.02	.00	7.	*	1		1225	150	.00	.00	.00	0.
1		0030	7	.02	.02	.00	7.	*	1		1230	151	.00	.00	.00	0.
1		0035	8	.02	.02	.00	8.	*	1		1235	152	.00	.00	.00	0.
1		0040	9	.02	.02	.00	10.	*	1		1240	153	.00	.00	.00	0.
1		0045	10	.02	.02	.00	10.	*	1		1245	154	.00	.00	.00	0.
1		0050	11	.02	.02	.00	11.	*	1		1250	155	.00	.00	.00	0.
1		0055	12	.02	.02	.00	11.	*	1		1255	156	.00	.00	.00	0.
1		0100	13	.03	.02	.01	12.	*	1		1300	157	.00	.00	.00	0.
1		0105	14	.03	.02	.01	15.	*	1		1305	158	.00	.00	.00	0.
1		0110	15	.03	.02	.01	20.	*	1		1310	159	.00	.00	.00	0.
1		0115	16	.03	.02	.01	22.	*	1		1315	160	.00	.00	.00	0.
1		0120	17	.03	.02	.01	23.	*	1		1320	161	.00	.00	.00	0.
1		0125	18	.03	.02	.01	23.	*	1		1325	162	.00	.00	.00	0.
1		0130	19	.03	.02	.01	24.	*	1		1330	163	.00	.00	.00	0.
1		0135	20	.03	.02	.01	24.	*	1		1335	164	.00	.00	.00	0.
1		0140	21	.03	.02	.01	25.	*	1		1340	165	.00	.00	.00	0.
1		0145	22	.03	.02	.01	25.	*	1		1345	166	.00	.00	.00	0.
1		0150	23	.03	.02	.01	25.	*	1		1350	167	.00	.00	.00	0.
1		0155	24	.03	.02	.01	25.	*	1		1355	168	.00	.00	.00	0.
1		0200	25	.03	.02	.01	26.	*	1		1400	169	.00	.00	.00	0.
1		0205	26	.03	.02	.01	28.	*	1		1405	170	.00	.00	.00	0.
1		0210	27	.03	.02	.01	31.	*	1		1410	171	.00	.00	.00	0.
1		0215	28	.03	.02	.01	30.	*	1		1415	172	.00	.00	.00	0.
1		0220	29	.03	.02	.01	35.	*	1		1420	173	.00	.00	.00	0.
1		0225	30	.03	.02	.01	36.	*	1		1425	174	.00	.00	.00	0.
1		0230	31	.03	.02	.01	37.	*	1		1430	175	.00	.00	.00	0.
1		0235	32	.03	.02	.01	37.	*	1		1435	176	.00	.00	.00	0.
1		0240	33	.03	.02	.01	38.	*	1		1440	177	.00	.00	.00	0.
1		0245	34	.04	.02	.01	39.	*	1		1445	178	.00	.00	.00	0.
1		0250	35	.04	.02	.01	42.	*	1		1450	179	.00	.00	.00	0.
1		0255	36	.04	.02	.01	47.	*	1		1455	180	.00	.00	.00	0.
1		0300	37	.04	.02	.01	49.	*	1		1500	181	.00	.00	.00	0.
1		0305	38	.04	.02	.01	50.	*	1		1505	182	.00	.00	.00	0.
1		0310	39	.04	.02	.02	52.	*	1		1510	183	.00	.00	.00	0.
1		0315	40	.04	.02	.02	55.	*	1		1515	184	.00	.00	.00	0.
1		0320	41	.04	.02	.02	60.	*	1		1520	185	.00	.00	.00	0.
1		0325	42	.04	.02	.02	63.	*	1		1525	186	.00	.00	.00	0.
1		0330	43	.05	.02	.02	68.	*	1		1530	187	.00	.00	.00	0.
1		0335	44	.05	.02	.03	77.	*	1		1535	188	.00	.00	.00	0.
1		0340	45	.05	.02	.03	87.	*	1		1540	189	.00	.00	.00	0.
1		0345	46	.05	.02	.03	96.	*	1		1545	190	.00	.00	.00	0.
1		0350	47	.05	.02	.03	102.	*	1		1550	191	.00	.00	.00	0.
1		0355	48	.06	.02	.03	111.	*	1		1555	192	.00	.00	.00	0.
1		0400	49	.06	.02	.03	117.	*	1		1600	193	.00	.00	.00	0.
1		0405	50	.06	.02	.04	125.	*	1		1605	194	.00	.00	.00	0.
1		0410	51	.06	.02	.04	132.	*	1		1610	195	.00	.00	.00	0.
1		0415	52	.07	.02	.04	142.	*	1		1615	196	.00	.00	.00	0.
1		0420	53	.07	.02	.05	154.	*	1		1620	197	.00	.00	.00	0.
1		0425	54	.07	.02	.05	166.	*	1		1625	198	.00	.00	.00	0.
1		0430	55	.07	.02	.05	178.	*	1		1630	199	.00	.00	.00	0.

1	0435	56	.08	.02	.06	188.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.02	.06	196.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.02	.06	208.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.02	.06	219.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.02	.07	229.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.02	.07	237.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.02	.09	253.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.13	.02	.10	280.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.02	.11	325.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.02	.13	371.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.02	.14	414.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.20	.02	.17	467.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.02	.04	489.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.02	.01	445.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	263.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	165.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	112.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	77.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	53.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	35.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	22.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	13.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	10.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	8.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	7.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	6.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	4.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	3.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	1.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.

1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

*

TOTAL RAINFALL = 3.50, TOTAL LOSS = 1.50, TOTAL EXCESS = 2.00

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
+ 489.	5.58	107.	27.	27.	27.
		(INCHES) 1.988	2.001	2.001	2.001
		(AC-FT) 53.	53.	53.	53.

CUMULATIVE AREA = .50 SQ MI

*** **

*
120 KK * 105 *
*

105 is 104 HYDROGRAPH DEVELOPMENT AREA "S-5"

F = 0.134

DEPTH AREA REDUCT. = 0.999

UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

124 BA

SUBBASIN CHARACTERISTICS

TAREA .12 SUBBASIN AREA

PRECIPITATION DATA

125 PB

STORM 3.50 BASIN TOTAL PRECIPITATION

126 PI

INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

134 LU

UNIFORM LOSS RATE

STRTL .00 INITIAL LOSS

CNSTL .15 UNIFORM LOSS RATE

RTIMP 10.00 PERCENT IMPERVIOUS AREA

134 UI

INPUT UNITGRAPH, 7 ORDINATES, VOLUME = 1.00

474.0 294.0 101.0 40.0 7.0 7.0 6.0

HYDROGRAPH AT STATION 105

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q		DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1	.00	.00	.00	0.	*		1	1200	145	.00	.00	.00	0.	
1	0005	2	.02	.01	.01	3.	*		1	1205	146	.00	.00	.00	0.	
1	0010	3	.02	.01	.01	7.	*		1	1210	147	.00	.00	.00	0.	
1	0015	4	.02	.01	.01	8.	*		1	1215	148	.00	.00	.00	0.	
1	0020	5	.02	.01	.01	9.	*		1	1220	149	.00	.00	.00	0.	
1	0025	6	.02	.01	.01	9.	*		1	1225	150	.00	.00	.00	0.	
1	0030	7	.02	.01	.01	11.	*		1	1230	151	.00	.00	.00	0.	
1	0035	8	.02	.01	.01	12.	*		1	1235	152	.00	.00	.00	0.	
1	0040	9	.02	.01	.01	12.	*		1	1240	153	.00	.00	.00	0.	
1	0045	10	.02	.01	.01	12.	*		1	1245	154	.00	.00	.00	0.	
1	0050	11	.02	.01	.01	12.	*		1	1250	155	.00	.00	.00	0.	
1	0055	12	.02	.01	.01	12.	*		1	1255	156	.00	.00	.00	0.	
1	0100	13	.03	.01	.02	14.	*		1	1300	157	.00	.00	.00	0.	
1	0105	14	.03	.01	.02	15.	*		1	1305	158	.00	.00	.00	0.	
1	0110	15	.03	.01	.02	15.	*		1	1310	159	.00	.00	.00	0.	
1	0115	16	.03	.01	.02	16.	*		1	1315	160	.00	.00	.00	0.	
1	0120	17	.03	.01	.02	16.	*		1	1320	161	.00	.00	.00	0.	
1	0125	18	.03	.01	.02	16.	*		1	1325	162	.00	.00	.00	0.	
1	0130	19	.03	.01	.02	16.	*		1	1330	163	.00	.00	.00	0.	
1	0135	20	.03	.01	.02	16.	*		1	1335	164	.00	.00	.00	0.	
1	0140	21	.03	.01	.02	16.	*		1	1340	165	.00	.00	.00	0.	
1	0145	22	.03	.01	.02	16.	*		1	1345	166	.00	.00	.00	0.	
1	0150	23	.03	.01	.02	16.	*		1	1350	167	.00	.00	.00	0.	

1	0155	24	.03	.01	.02	16.	*	1	1355	168	.00	.00	.00	0.
1	0200	25	.03	.01	.02	17.	*	1	1400	169	.00	.00	.00	0.
1	0205	26	.03	.01	.02	17.	*	1	1405	170	.00	.00	.00	0.
1	0210	27	.03	.01	.02	18.	*	1	1410	171	.00	.00	.00	0.
1	0215	28	.03	.01	.02	18.	*	1	1415	172	.00	.00	.00	0.
1	0220	29	.03	.01	.02	19.	*	1	1420	173	.00	.00	.00	0.
1	0225	30	.03	.01	.02	19.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.03	.01	.02	19.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.03	.01	.02	19.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.03	.01	.02	19.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.04	.01	.02	21.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.04	.01	.02	22.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.04	.01	.02	22.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.04	.01	.02	22.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.04	.01	.02	22.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.04	.01	.03	24.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.04	.01	.03	25.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.04	.01	.03	25.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.04	.01	.03	27.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.05	.01	.03	30.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.01	.04	33.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.01	.04	34.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.01	.04	36.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.01	.04	38.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.06	.01	.04	40.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.06	.01	.04	41.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.06	.01	.05	43.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.06	.01	.05	46.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.01	.06	49.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.01	.06	52.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.01	.06	55.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.01	.06	57.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.01	.07	59.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.01	.07	62.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.01	.07	65.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.01	.07	67.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.01	.08	69.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.01	.08	72.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.01	.10	82.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.13	.01	.11	96.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.01	.13	108.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.01	.14	118.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.01	.15	132.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.20	.01	.18	153.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.01	.06	104.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.01	.02	53.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.01	.01	26.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.01	.01	13.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	7.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	3.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	1.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	0.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	0.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	0.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	0.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	0.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	0.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	0.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	0.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	0.	*	1	1850	227	.00	.00	.00	0.

1	0655	84	.00	.00	.00	0.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.

1 1155 144 .00 .00 .00 0. * 1 2355 288 .00 .00 .00 0.
*

TOTAL RAINFALL = 3.50, TOTAL LOSS = .80, TOTAL EXCESS = 2.70

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
(CFS)	(HR)	(CFS)				
153.	5.50		35.	9.	9.	9.
		(INCHES)	2.698	2.701	2.701	2.701
		(AC-FT)	17.	17.	17.	17.

CUMULATIVE AREA = .12 SQ MI

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137 KK
* HC-3 *
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COMBINE HYDROGRAPHS S-4,S-5

139 HC
HYDROGRAPH COMBINATION
ICOMP 3 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION HC-3
SUM OF 3 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
					*						*						*					
1	0000	1	0.	*	1	0600	73	2404.	*	1	1200	145	31.	*	1	1800	217	4.				
1	0005	2	4.	*	1	0605	74	2242.	*	1	1205	146	30.	*	1	1805	218	4.				
1	0010	3	9.	*	1	0610	75	2077.	*	1	1210	147	29.	*	1	1810	219	4.				
1	0015	4	14.	*	1	0615	76	1902.	*	1	1215	148	29.	*	1	1815	220	4.				
1	0020	5	19.	*	1	0620	77	1723.	*	1	1220	149	28.	*	1	1820	221	4.				
1	0025	6	24.	*	1	0625	78	1551.	*	1	1225	150	27.	*	1	1825	222	4.				
1	0030	7	29.	*	1	0630	79	1392.	*	1	1230	151	26.	*	1	1830	223	4.				
1	0035	8	35.	*	1	0635	80	1248.	*	1	1235	152	26.	*	1	1835	224	4.				
1	0040	9	42.	*	1	0640	81	1119.	*	1	1240	153	25.	*	1	1840	225	3.				
1	0045	10	50.	*	1	0645	82	1002.	*	1	1245	154	24.	*	1	1845	226	3.				
1	0050	11	58.	*	1	0650	83	897.	*	1	1250	155	24.	*	1	1850	227	3.				
1	0055	12	63.	*	1	0655	84	807.	*	1	1255	156	23.	*	1	1855	228	3.				
1	0100	13	69.	*	1	0700	85	735.	*	1	1300	157	22.	*	1	1900	229	3.				
1	0105	14	76.	*	1	0705	86	670.	*	1	1305	158	22.	*	1	1905	230	3.				
1	0110	15	87.	*	1	0710	87	610.	*	1	1310	159	21.	*	1	1910	231	3.				
1	0115	16	97.	*	1	0715	88	555.	*	1	1315	160	21.	*	1	1915	232	3.				
1	0120	17	105.	*	1	0720	89	505.	*	1	1320	161	20.	*	1	1920	233	3.				

1	0125	18	110.	*	1	0725	90	463.	*	1	1325	162	19.	*	1	1925	234	3.
1	0130	19	115.	*	1	0730	91	426.	*	1	1330	163	19.	*	1	1930	235	3.
1	0135	20	118.	*	1	0735	92	392.	*	1	1335	164	18.	*	1	1935	236	3.
1	0140	21	121.	*	1	0740	93	361.	*	1	1340	165	18.	*	1	1940	237	3.
1	0145	22	124.	*	1	0745	94	333.	*	1	1345	166	17.	*	1	1945	238	2.
1	0150	23	126.	*	1	0750	95	307.	*	1	1350	167	17.	*	1	1950	239	2.
1	0155	24	128.	*	1	0755	96	283.	*	1	1355	168	16.	*	1	1955	240	2.
1	0200	25	133.	*	1	0800	97	261.	*	1	1400	169	16.	*	1	2000	241	2.
1	0205	26	137.	*	1	0805	98	241.	*	1	1405	170	15.	*	1	2005	242	2.
1	0210	27	145.	*	1	0810	99	223.	*	1	1410	171	15.	*	1	2010	243	2.
1	0215	28	151.	*	1	0815	100	207.	*	1	1415	172	15.	*	1	2015	244	2.
1	0220	29	160.	*	1	0820	101	195.	*	1	1420	173	14.	*	1	2020	245	2.
1	0225	30	168.	*	1	0825	102	183.	*	1	1425	174	14.	*	1	2025	246	2.
1	0230	31	177.	*	1	0830	103	173.	*	1	1430	175	13.	*	1	2030	247	2.
1	0235	32	183.	*	1	0835	104	164.	*	1	1435	176	13.	*	1	2035	248	2.
1	0240	33	190.	*	1	0840	105	155.	*	1	1440	177	13.	*	1	2040	249	2.
1	0245	34	199.	*	1	0845	106	146.	*	1	1445	178	12.	*	1	2045	250	2.
1	0250	35	209.	*	1	0850	107	138.	*	1	1450	179	12.	*	1	2050	251	2.
1	0255	36	223.	*	1	0855	108	130.	*	1	1455	180	12.	*	1	2055	252	2.
1	0300	37	237.	*	1	0900	109	122.	*	1	1500	181	11.	*	1	2100	253	2.
1	0305	38	250.	*	1	0905	110	115.	*	1	1505	182	11.	*	1	2105	254	2.
1	0310	39	264.	*	1	0910	111	108.	*	1	1510	183	11.	*	1	2110	255	2.
1	0315	40	280.	*	1	0915	112	101.	*	1	1515	184	11.	*	1	2115	256	2.
1	0320	41	299.	*	1	0920	113	95.	*	1	1520	185	10.	*	1	2120	257	1.
1	0325	42	319.	*	1	0925	114	89.	*	1	1525	186	10.	*	1	2125	258	1.
1	0330	43	342.	*	1	0930	115	84.	*	1	1530	187	10.	*	1	2130	259	1.
1	0335	44	373.	*	1	0935	116	80.	*	1	1535	188	9.	*	1	2135	260	1.
1	0340	45	412.	*	1	0940	117	76.	*	1	1540	189	9.	*	1	2140	261	1.
1	0345	46	458.	*	1	0945	118	72.	*	1	1545	190	9.	*	1	2145	262	1.
1	0350	47	504.	*	1	0950	119	69.	*	1	1550	191	9.	*	1	2150	263	1.
1	0355	48	556.	*	1	0955	120	66.	*	1	1555	192	9.	*	1	2155	264	1.
1	0400	49	609.	*	1	1000	121	63.	*	1	1600	193	8.	*	1	2200	265	1.
1	0405	50	663.	*	1	1005	122	60.	*	1	1605	194	8.	*	1	2205	266	1.
1	0410	51	719.	*	1	1010	123	58.	*	1	1610	195	8.	*	1	2210	267	1.
1	0415	52	782.	*	1	1015	124	56.	*	1	1615	196	8.	*	1	2215	268	1.
1	0420	53	853.	*	1	1020	125	54.	*	1	1620	197	7.	*	1	2220	269	1.
1	0425	54	933.	*	1	1025	126	52.	*	1	1625	198	7.	*	1	2225	270	1.
1	0430	55	1021.	*	1	1030	127	51.	*	1	1630	199	7.	*	1	2230	271	1.
1	0435	56	1116.	*	1	1035	128	49.	*	1	1635	200	7.	*	1	2235	272	1.
1	0440	57	1213.	*	1	1040	129	48.	*	1	1640	201	7.	*	1	2240	273	1.
1	0445	58	1313.	*	1	1045	130	47.	*	1	1645	202	6.	*	1	2245	274	1.
1	0450	59	1416.	*	1	1050	131	45.	*	1	1650	203	6.	*	1	2250	275	1.
1	0455	60	1525.	*	1	1055	132	44.	*	1	1655	204	6.	*	1	2255	276	1.
1	0500	61	1638.	*	1	1100	133	43.	*	1	1700	205	6.	*	1	2300	277	1.
1	0505	62	1772.	*	1	1105	134	42.	*	1	1705	206	6.	*	1	2305	278	1.
1	0510	63	1936.	*	1	1110	135	41.	*	1	1710	207	6.	*	1	2310	279	1.
1	0515	64	2151.	*	1	1115	136	40.	*	1	1715	208	6.	*	1	2315	280	1.
1	0520	65	2419.	*	1	1120	137	38.	*	1	1720	209	5.	*	1	2320	281	1.
1	0525	66	2720.	*	1	1125	138	37.	*	1	1725	210	5.	*	1	2325	282	1.
1	0530	67	3074.	*	1	1130	139	36.	*	1	1730	211	5.	*	1	2330	283	1.
1	0535	68	3327.	*	1	1135	140	35.	*	1	1735	212	5.	*	1	2335	284	1.
1	0540	69	3413.	*	1	1140	141	35.	*	1	1740	213	5.	*	1	2340	285	1.
1	0545	70	3188.	*	1	1145	142	34.	*	1	1745	214	5.	*	1	2345	286	1.
1	0550	71	2888.	*	1	1150	143	33.	*	1	1750	215	5.	*	1	2350	287	1.
1	0555	72	2632.	*	1	1155	144	32.	*	1	1755	216	4.	*	1	2355	288	1.

*

*

*

PEAK FLOW TIME

MAXIMUM AVERAGE FLOW

6-HR

24-HR

72-HR

23.92-HR

(CFS)	(HR)	(CFS)				
3413.	5.67		1029.	282.	282.	282.
		(INCHES)	1.721	1.877	1.877	1.877
		(AC-FT)	510.	557.	557.	557.

CUMULATIVE AREA = 5.56 SQ MI

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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT									
	101	2285.	5.75	572.	147.	147.	3.04		
ROUTED TO									
	DB-1	1847.	5.92	542.	146.	146.	3.04		
								2861.90	5.92
ROUTED TO									
	R101-102	1835.	5.92	542.	146.	146.	3.04		
HYDROGRAPH AT									
	102	1008.	5.58	209.	53.	53.	1.08		
2 COMBINED AT									
	HC-1	2482.	5.67	736.	199.	199.	4.12		
ROUTED TO									
	DB-2	2373.	5.67	736.	199.	199.	4.12		
								2750.17	5.67
ROUTED TO									
	R102-103	2378.	5.75	736.	199.	199.	4.12		
HYDROGRAPH AT									
	103	822.	5.58	185.	47.	47.	.82		
2 COMBINED AT									
	HC-2	2972.	5.67	901.	246.	246.	4.94		
ROUTED TO									
	R103-104	2914.	5.67	901.	246.	246.	4.94		
HYDROGRAPH AT									
	104	489.	5.58	107.	27.	27.	.50		
HYDROGRAPH AT									
	105	153.	5.50	35.	9.	9.	.12		
3 COMBINED AT									
	HC-3	3413.	5.67	1029.	282.	282.	5.56		

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)
R101-102	MANE	2.76	1840.54	356.20	1.79	5.00	1835.42	355.00	1.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2895E+03 EXCESS= .0000E+00 OUTFLOW= .2895E+03 BASIN STORAGE= .4994E-01 PERCENT ERROR= .0

R102-103	MANE	4.37	2379.36	345.08	1.79	5.00	2377.60	345.00	1.79
----------	------	------	---------	--------	------	------	---------	--------	------

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3938E+03 EXCESS= .0000E+00 OUTFLOW= .3938E+03 BASIN STORAGE= .9971E-01 PERCENT ERROR= .0

R103-104	MANE	3.44	2938.09	341.01	1.84	5.00	2914.14	340.00	1.84
----------	------	------	---------	--------	------	------	---------	--------	------

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4858E+03 EXCESS= .0000E+00 OUTFLOW= .4859E+03 BASIN STORAGE= .8943E-01 PERCENT ERROR= .0

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

**4 – Pershing Channel Proposed Condition
100-yr/3-hr
(HEC-1 Output)**

```

*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 21JUL06 TIME 17:00:31
*
*****

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

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X   X XXXXXXXX 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 XXXXXXXX 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

1

HEC-1 INPUT

PAGE 1

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

*** FREE ***

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1      ID   RBF Consulting
2      ID
3      ID   *****
4      ID   PROPOSED CONDITION ANALYSIS
5      ID   BANNING - 100-yr/3-Hr
6      ID   *****
7      ID
8      ID   FEBRUARY 22, 2006  REVISED HYROLOGY
9      ID   Filename: PCP3hr.i/dat      WITH DIVERSION TO SMITH
10     ID   Concentration Point: Pershing Channel @ Wilson St.
11     ID   Complex Unit Hydrograph - Find Qmax (proposed)
12     ID
13     ID
      *DIAGRAM

```

*** NOLIST ***

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT

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

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

16 101
V
V
32 R102-103
.
.
35 . 103
.
.
51 HC-1.....

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

* *
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* *
* RUN DATE 21JUL06 TIME 17:00:31 *
* *

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

RBF Consulting

PROPOSED CONDITION ANALYSIS
BANNING - 100-yr/3-Hr

FEBRUARY 22, 2006 REVISED HYROLOGY
Filename: PCP3hr.i/dat WITH DIVERSION TO SMITH
Concentration Point: Pershing Channel @ Wilson St.
Complex Unit Hydrograph - Find Qmax (proposed)

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

IT HYDROGRAPH TIME DATA
NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 1 0 ENDING DATE
NDTIME 2355 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS

ENGLISH UNITS
DRAINAGE AREA SQUARE MILES

PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-FEET
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

*** **

16 KK * 101 *

101 HYDROGRAPH DEVELOPMENT AREA "P-1"
POINT RAINFALL DEPTH = 2.35 INCHES
DEPTH-AREA REDUCTION FACTOR = 0.999
F = 0.257 IN/HR
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

22 BA SUBBASIN CHARACTERISTICS
TAREA .43 SUBBASIN AREA

PRECIPITATION DATA

23 PB STORM 2.35 BASIN TOTAL PRECIPITATION

24 PI INCREMENTAL PRECIPITATION PATTERN
1.30 1.30 1.10 1.50 1.50 1.80 1.50 1.80 1.80 1.50
1.60 1.80 2.20 2.20 2.20 2.00 2.60 2.70 2.40 2.70
3.30 3.10 2.90 3.00 3.10 4.20 5.00 3.50 6.80 7.30
8.20 5.90 2.00 1.80 1.80 .60

28 LU UNIFORM LOSS RATE
STRTL .00 INITIAL LOSS
CNSTL .29 UNIFORM LOSS RATE
RTIMP 10.00 PERCENT IMPERVIOUS AREA

28 UI INPUT UNITGRAPH, 12 ORDINATES, VOLUME = 1.00
490.0 1612.0 539.0 301.0 178.0 98.0 49.0 14.0 14.0 14.0
14.1 5.6

HYDROGRAPH AT STATION 101

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q		DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1		.00	.00	.00	0.	*	1	1200	145		.00	.00	.00	0.
1	0005	2		.03	.02	.01	4.	*	1	1205	146		.00	.00	.00	0.

1	0010	3	.03	.02	.01	19.	*	1	1210	147	.00	.00	.00	0.
1	0015	4	.03	.02	.00	22.	*	1	1215	148	.00	.00	.00	0.
1	0020	5	.04	.02	.01	21.	*	1	1220	149	.00	.00	.00	0.
1	0025	6	.04	.02	.01	36.	*	1	1225	150	.00	.00	.00	0.
1	0030	7	.04	.02	.02	44.	*	1	1230	151	.00	.00	.00	0.
1	0035	8	.04	.02	.01	54.	*	1	1235	152	.00	.00	.00	0.
1	0040	9	.04	.02	.02	51.	*	1	1240	153	.00	.00	.00	0.
1	0045	10	.04	.02	.02	62.	*	1	1245	154	.00	.00	.00	0.
1	0050	11	.04	.02	.01	62.	*	1	1250	155	.00	.00	.00	0.
1	0055	12	.04	.02	.02	53.	*	1	1255	156	.00	.00	.00	0.
1	0100	13	.04	.02	.02	57.	*	1	1300	157	.00	.00	.00	0.
1	0105	14	.05	.02	.03	69.	*	1	1305	158	.00	.00	.00	0.
1	0110	15	.05	.02	.03	86.	*	1	1310	159	.00	.00	.00	0.
1	0115	16	.05	.02	.03	92.	*	1	1315	160	.00	.00	.00	0.
1	0120	17	.05	.02	.03	94.	*	1	1320	161	.00	.00	.00	0.
1	0125	18	.06	.02	.04	95.	*	1	1325	162	.00	.00	.00	0.
1	0130	19	.06	.02	.04	118.	*	1	1330	163	.00	.00	.00	0.
1	0135	20	.06	.02	.03	125.	*	1	1335	164	.00	.00	.00	0.
1	0140	21	.06	.02	.04	122.	*	1	1340	165	.00	.00	.00	0.
1	0145	22	.08	.02	.06	139.	*	1	1345	166	.00	.00	.00	0.
1	0150	23	.07	.02	.05	163.	*	1	1350	167	.00	.00	.00	0.
1	0155	24	.07	.02	.05	163.	*	1	1355	168	.00	.00	.00	0.
1	0200	25	.07	.02	.05	159.	*	1	1400	169	.00	.00	.00	0.
1	0205	26	.07	.02	.05	163.	*	1	1405	170	.00	.00	.00	0.
1	0210	27	.10	.02	.08	180.	*	1	1410	171	.00	.00	.00	0.
1	0215	28	.12	.02	.10	233.	*	1	1415	172	.00	.00	.00	0.
1	0220	29	.08	.02	.06	260.	*	1	1420	173	.00	.00	.00	0.
1	0225	30	.16	.02	.14	260.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.17	.02	.15	382.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.19	.02	.17	449.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.14	.02	.12	483.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.05	.02	.03	378.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.04	.02	.02	213.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.04	.02	.02	149.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.01	.01	.00	104.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.00	.00	.00	51.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.00	.00	.00	27.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.00	.00	.00	16.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.00	.00	.00	11.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.00	.00	.00	7.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.00	.00	.00	4.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.00	.00	.00	2.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.00	.00	.00	1.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.00	.00	.00	0.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.00	.00	.00	0.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.00	.00	.00	0.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.00	.00	.00	0.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.00	.00	.00	0.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.00	.00	.00	0.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.00	.00	.00	0.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.00	.00	.00	0.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.00	.00	.00	0.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.00	.00	.00	0.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.00	.00	.00	0.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.00	.00	.00	0.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.00	.00	.00	0.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.00	.00	.00	0.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.00	.00	.00	0.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.00	.00	.00	0.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.00	.00	.00	0.	*	1	1705	206	.00	.00	.00	0.

1	0510	63	.00	.00	.00	0.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.00	.00	.00	0.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.00	.00	.00	0.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.00	.00	.00	0.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.00	.00	.00	0.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.00	.00	.00	0.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.00	.00	.00	0.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.00	.00	.00	0.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.00	.00	.00	0.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.00	.00	.00	0.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.00	.00	.00	0.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	0.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	0.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	0.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	0.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	0.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	0.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	0.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	0.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	0.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	0.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	0.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.

1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

*

TOTAL RAINFALL = 2.35, TOTAL LOSS = .76, TOTAL EXCESS = 1.59

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
+ 483.	2.67	73.	18.	18.	18.
		(INCHES)	1.586	1.586	1.586
		(AC-FT)	36.	36.	36.

CUMULATIVE AREA = .43 SQ MI

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32 KK

*
* R102-103 *
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ROUTE HYDROGRAPH DEVELOPMENT AREA 1

HYDROGRAPH ROUTING DATA

34 RD

MUSKINGUM-CUNGE CHANNEL ROUTING
L 2776. CHANNEL LENGTH
S .0200 SLOPE
N .015 CHANNEL ROUGHNESS COEFFICIENT
CA .00 CONTRIBUTING AREA
SHAPE TRAP CHANNEL SHAPE
WD 10.00 BOTTOM WIDTH OR DIAMETER
Z 1.00 SIDE SLOPE

COMPUTED MUSKINGUM-CUNGE PARAMETERS

ELEMENT	ALPHA	COMPUTATION TIME STEP			PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
		M	DT	DX				
			(MIN)	(FT)				
MAIN	3.78	1.48	2.15	1388.00	471.73	161.43	1.59	21.50

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	3.78	1.48	5.00		469.86	160.00	1.59	
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .3637E+02 EXCESS= .0000E+00 OUTFLOW= .3637E+02 BASIN STORAGE= .1184E-02 PERCENT ERROR= .0

HYDROGRAPH AT STATION R102-103

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
					*						*						*					
1	0000	1		0.	*	1	0600	73		0.	*	1	1200	145		0.	*	1	1800	217		0.
1	0005	2		0.	*	1	0605	74		0.	*	1	1205	146		0.	*	1	1805	218		0.
1	0010	3		6.	*	1	0610	75		0.	*	1	1210	147		0.	*	1	1810	219		0.
1	0015	4		19.	*	1	0615	76		0.	*	1	1215	148		0.	*	1	1815	220		0.
1	0020	5		22.	*	1	0620	77		0.	*	1	1220	149		0.	*	1	1820	221		0.
1	0025	6		24.	*	1	0625	78		0.	*	1	1225	150		0.	*	1	1825	222		0.
1	0030	7		37.	*	1	0630	79		0.	*	1	1230	151		0.	*	1	1830	223		0.
1	0035	8		46.	*	1	0635	80		0.	*	1	1235	152		0.	*	1	1835	224		0.
1	0040	9		53.	*	1	0640	81		0.	*	1	1240	153		0.	*	1	1840	225		0.
1	0045	10		54.	*	1	0645	82		0.	*	1	1245	154		0.	*	1	1845	226		0.
1	0050	11		62.	*	1	0650	83		0.	*	1	1250	155		0.	*	1	1850	227		0.
1	0055	12		59.	*	1	0655	84		0.	*	1	1255	156		0.	*	1	1855	228		0.
1	0100	13		54.	*	1	0700	85		0.	*	1	1300	157		0.	*	1	1900	229		0.
1	0105	14		60.	*	1	0705	86		0.	*	1	1305	158		0.	*	1	1905	230		0.
1	0110	15		75.	*	1	0710	87		0.	*	1	1310	159		0.	*	1	1910	231		0.
1	0115	16		89.	*	1	0715	88		0.	*	1	1315	160		0.	*	1	1915	232		0.
1	0120	17		93.	*	1	0720	89		0.	*	1	1320	161		0.	*	1	1920	233		0.
1	0125	18		95.	*	1	0725	90		0.	*	1	1325	162		0.	*	1	1925	234		0.
1	0130	19		105.	*	1	0730	91		0.	*	1	1330	163		0.	*	1	1930	235		0.
1	0135	20		122.	*	1	0735	92		0.	*	1	1335	164		0.	*	1	1935	236		0.
1	0140	21		124.	*	1	0740	93		0.	*	1	1340	165		0.	*	1	1940	237		0.
1	0145	22		130.	*	1	0745	94		0.	*	1	1345	166		0.	*	1	1945	238		0.
1	0150	23		151.	*	1	0750	95		0.	*	1	1350	167		0.	*	1	1950	239		0.
1	0155	24		163.	*	1	0755	96		0.	*	1	1355	168		0.	*	1	1955	240		0.
1	0200	25		161.	*	1	0800	97		0.	*	1	1400	169		0.	*	1	2000	241		0.
1	0205	26		160.	*	1	0805	98		0.	*	1	1405	170		0.	*	1	2005	242		0.
1	0210	27		172.	*	1	0810	99		0.	*	1	1410	171		0.	*	1	2010	243		0.
1	0215	28		208.	*	1	0815	100		0.	*	1	1415	172		0.	*	1	2015	244		0.
1	0220	29		249.	*	1	0820	101		0.	*	1	1420	173		0.	*	1	2020	245		0.
1	0225	30		263.	*	1	0825	102		0.	*	1	1425	174		0.	*	1	2025	246		0.
1	0230	31		333.	*	1	0830	103		0.	*	1	1430	175		0.	*	1	2030	247		0.

1	0235	32	426.	*	1	0835	104	0.	*	1	1435	176	0.	*	1	2035	248	0.
1	0240	33	470.	*	1	0840	105	0.	*	1	1440	177	0.	*	1	2040	249	0.
1	0245	34	416.	*	1	0845	106	0.	*	1	1445	178	0.	*	1	2045	250	0.
1	0250	35	282.	*	1	0850	107	0.	*	1	1450	179	0.	*	1	2050	251	0.
1	0255	36	176.	*	1	0855	108	0.	*	1	1455	180	0.	*	1	2055	252	0.
1	0300	37	127.	*	1	0900	109	0.	*	1	1500	181	0.	*	1	2100	253	0.
1	0305	38	83.	*	1	0905	110	0.	*	1	1505	182	0.	*	1	2105	254	0.
1	0310	39	44.	*	1	0910	111	0.	*	1	1510	183	0.	*	1	2110	255	0.
1	0315	40	26.	*	1	0915	112	0.	*	1	1515	184	0.	*	1	2115	256	0.
1	0320	41	16.	*	1	0920	113	0.	*	1	1520	185	0.	*	1	2120	257	0.
1	0325	42	10.	*	1	0925	114	0.	*	1	1525	186	0.	*	1	2125	258	0.
1	0330	43	7.	*	1	0930	115	0.	*	1	1530	187	0.	*	1	2130	259	0.
1	0335	44	4.	*	1	0935	116	0.	*	1	1535	188	0.	*	1	2135	260	0.
1	0340	45	2.	*	1	0940	117	0.	*	1	1540	189	0.	*	1	2140	261	0.
1	0345	46	1.	*	1	0945	118	0.	*	1	1545	190	0.	*	1	2145	262	0.
1	0350	47	1.	*	1	0950	119	0.	*	1	1550	191	0.	*	1	2150	263	0.
1	0355	48	0.	*	1	0955	120	0.	*	1	1555	192	0.	*	1	2155	264	0.
1	0400	49	0.	*	1	1000	121	0.	*	1	1600	193	0.	*	1	2200	265	0.
1	0405	50	0.	*	1	1005	122	0.	*	1	1605	194	0.	*	1	2205	266	0.
1	0410	51	0.	*	1	1010	123	0.	*	1	1610	195	0.	*	1	2210	267	0.
1	0415	52	0.	*	1	1015	124	0.	*	1	1615	196	0.	*	1	2215	268	0.
1	0420	53	0.	*	1	1020	125	0.	*	1	1620	197	0.	*	1	2220	269	0.
1	0425	54	0.	*	1	1025	126	0.	*	1	1625	198	0.	*	1	2225	270	0.
1	0430	55	0.	*	1	1030	127	0.	*	1	1630	199	0.	*	1	2230	271	0.
1	0435	56	0.	*	1	1035	128	0.	*	1	1635	200	0.	*	1	2235	272	0.
1	0440	57	0.	*	1	1040	129	0.	*	1	1640	201	0.	*	1	2240	273	0.
1	0445	58	0.	*	1	1045	130	0.	*	1	1645	202	0.	*	1	2245	274	0.
1	0450	59	0.	*	1	1050	131	0.	*	1	1650	203	0.	*	1	2250	275	0.
1	0455	60	0.	*	1	1055	132	0.	*	1	1655	204	0.	*	1	2255	276	0.
1	0500	61	0.	*	1	1100	133	0.	*	1	1700	205	0.	*	1	2300	277	0.
1	0505	62	0.	*	1	1105	134	0.	*	1	1705	206	0.	*	1	2305	278	0.
1	0510	63	0.	*	1	1110	135	0.	*	1	1710	207	0.	*	1	2310	279	0.
1	0515	64	0.	*	1	1115	136	0.	*	1	1715	208	0.	*	1	2315	280	0.
1	0520	65	0.	*	1	1120	137	0.	*	1	1720	209	0.	*	1	2320	281	0.
1	0525	66	0.	*	1	1125	138	0.	*	1	1725	210	0.	*	1	2325	282	0.
1	0530	67	0.	*	1	1130	139	0.	*	1	1730	211	0.	*	1	2330	283	0.
1	0535	68	0.	*	1	1135	140	0.	*	1	1735	212	0.	*	1	2335	284	0.
1	0540	69	0.	*	1	1140	141	0.	*	1	1740	213	0.	*	1	2340	285	0.
1	0545	70	0.	*	1	1145	142	0.	*	1	1745	214	0.	*	1	2345	286	0.
1	0550	71	0.	*	1	1150	143	0.	*	1	1750	215	0.	*	1	2350	287	0.
1	0555	72	0.	*	1	1155	144	0.	*	1	1755	216	0.	*	1	2355	288	0.

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
+	470.	73.	18.	18.	18.
		(INCHES)	1.586	1.586	1.586
		(AC-FT)	36.	36.	36.

CUMULATIVE AREA = .43 SQ MI

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 35 KK * 103 *
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103 HYDROGRAPH DEVELOPMENT AREA "P-2"
 POINT RAINFALL DEPTH = 3.50 INCHES
 DEPTH-AREA REDUCTION FACTOR = 0.999
 F = 0.231 IN/HR
 LOW LOSS FRACTION = 0.9
 UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

41 BA SUBBASIN CHARACTERISTICS
 TAREA .24 SUBBASIN AREA

PRECIPITATION DATA

42 PB STORM 2.35 BASIN TOTAL PRECIPITATION

43 PI INCREMENTAL PRECIPITATION PATTERN

1.30	1.30	1.10	1.50	1.50	1.80	1.50	1.80	1.80	1.50
1.60	1.80	2.20	2.20	2.20	2.00	2.60	2.70	2.40	2.70
3.30	3.10	2.90	3.00	3.10	4.20	5.00	3.50	6.80	7.30
8.20	5.90	2.00	1.80	1.80	.60				

47 LU UNIFORM LOSS RATE

STRTL	.00	INITIAL LOSS
CNSTL	.26	UNIFORM LOSS RATE
RTIMP	10.00	PERCENT IMPERVIOUS AREA

47 UI INPUT UNITGRAPH, 13 ORDINATES, VOLUME = 1.00

234.0	843.0	344.0	177.0	109.0	68.0	38.0	14.0	7.0	7.0
7.2	7.2	2.9							

HYDROGRAPH AT STATION 103

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q		DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1	.00	.00	.00	0.			1	1200	145	.00	.00	.00	0.	
1	0005	2	.03	.02	.01	3.			1	1205	146	.00	.00	.00	0.	
1	0010	3	.03	.02	.01	12.			1	1210	147	.00	.00	.00	0.	
1	0015	4	.03	.02	.01	15.			1	1215	148	.00	.00	.00	0.	
1	0020	5	.04	.02	.02	15.			1	1220	149	.00	.00	.00	0.	
1	0025	6	.04	.02	.02	23.			1	1225	150	.00	.00	.00	0.	
1	0030	7	.04	.02	.02	28.			1	1230	151	.00	.00	.00	0.	
1	0035	8	.04	.02	.02	33.			1	1235	152	.00	.00	.00	0.	
1	0040	9	.04	.02	.02	32.			1	1240	153	.00	.00	.00	0.	
1	0045	10	.04	.02	.02	38.			1	1245	154	.00	.00	.00	0.	
1	0050	11	.04	.02	.02	38.			1	1250	155	.00	.00	.00	0.	
1	0055	12	.04	.02	.02	34.			1	1255	156	.00	.00	.00	0.	
1	0100	13	.04	.02	.02	35.			1	1300	157	.00	.00	.00	0.	
1	0105	14	.05	.02	.03	42.			1	1305	158	.00	.00	.00	0.	

1	0110	15	.05	.02	.03	51.	*	1	1310	159	.00	.00	.00	0.
1	0115	16	.05	.02	.03	55.	*	1	1315	160	.00	.00	.00	0.
1	0120	17	.05	.02	.03	56.	*	1	1320	161	.00	.00	.00	0.
1	0125	18	.06	.02	.04	57.	*	1	1325	162	.00	.00	.00	0.
1	0130	19	.06	.02	.04	68.	*	1	1330	163	.00	.00	.00	0.
1	0135	20	.06	.02	.04	73.	*	1	1335	164	.00	.00	.00	0.
1	0140	21	.06	.02	.04	72.	*	1	1340	165	.00	.00	.00	0.
1	0145	22	.08	.02	.06	80.	*	1	1345	166	.00	.00	.00	0.
1	0150	23	.07	.02	.05	93.	*	1	1350	167	.00	.00	.00	0.
1	0155	24	.07	.02	.05	94.	*	1	1355	168	.00	.00	.00	0.
1	0200	25	.07	.02	.05	92.	*	1	1400	169	.00	.00	.00	0.
1	0205	26	.07	.02	.05	94.	*	1	1405	170	.00	.00	.00	0.
1	0210	27	.10	.02	.08	103.	*	1	1410	171	.00	.00	.00	0.
1	0215	28	.12	.02	.10	130.	*	1	1415	172	.00	.00	.00	0.
1	0220	29	.08	.02	.06	147.	*	1	1420	173	.00	.00	.00	0.
1	0225	30	.16	.02	.14	147.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.17	.02	.15	210.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.19	.02	.17	249.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.14	.02	.12	270.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.05	.02	.03	220.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.04	.02	.02	132.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.04	.02	.02	93.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.01	.01	.00	67.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.00	.00	.00	36.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.00	.00	.00	19.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.00	.00	.00	11.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.00	.00	.00	7.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.00	.00	.00	5.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.00	.00	.00	3.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.00	.00	.00	2.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.00	.00	.00	1.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.00	.00	.00	0.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.00	.00	.00	0.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.00	.00	.00	0.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.00	.00	.00	0.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.00	.00	.00	0.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.00	.00	.00	0.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.00	.00	.00	0.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.00	.00	.00	0.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.00	.00	.00	0.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.00	.00	.00	0.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.00	.00	.00	0.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.00	.00	.00	0.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.00	.00	.00	0.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.00	.00	.00	0.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.00	.00	.00	0.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.00	.00	.00	0.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.00	.00	.00	0.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.00	.00	.00	0.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.00	.00	.00	0.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.00	.00	.00	0.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.00	.00	.00	0.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.00	.00	.00	0.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.00	.00	.00	0.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.00	.00	.00	0.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.00	.00	.00	0.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.00	.00	.00	0.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.00	.00	.00	0.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.00	.00	.00	0.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	0.	*	1	1805	218	.00	.00	.00	0.

1	0610	75	.00	.00	.00	0.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	0.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	0.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	0.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	0.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	0.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	0.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	0.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	0.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	0.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.

1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.
							*							

TOTAL RAINFALL = 2.35, TOTAL LOSS = .69, TOTAL EXCESS = 1.66

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
+	(CFS)	(HR)				
		(CFS)				
	270.	2.67	43.	11.	11.	11.
		(INCHES)	1.662	1.662	1.662	1.662
		(AC-FT)	21.	21.	21.	21.

CUMULATIVE AREA = .24 SQ MI

*** **

* *
 * HC-1 *
 * *

COMBINE HYDROGRAPHS AREA 1 AND AREA 2

53 HC HYDROGRAPH COMBINATION
 ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION HC-1
 SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
					*						*					
1	0000	1		0.	*	1	0600	73		0.	*	1	1200	145		0.
1	0005	2		3.	*	1	0605	74		0.	*	1	1205	146		0.
1	0010	3		18.	*	1	0610	75		0.	*	1	1210	147		0.
1	0015	4		34.	*	1	0615	76		0.	*	1	1215	148		0.
1	0020	5		37.	*	1	0620	77		0.	*	1	1220	149		0.
1	0025	6		47.	*	1	0625	78		0.	*	1	1225	150		0.
1	0030	7		65.	*	1	0630	79		0.	*	1	1230	151		0.
1	0035	8		80.	*	1	0635	80		0.	*	1	1235	152		0.

1	0040	9	86.	*	1	0640	81	0.	*	1	1240	153	0.	*	1	1840	225	0.
1	0045	10	92.	*	1	0645	82	0.	*	1	1245	154	0.	*	1	1845	226	0.
1	0050	11	101.	*	1	0650	83	0.	*	1	1250	155	0.	*	1	1850	227	0.
1	0055	12	93.	*	1	0655	84	0.	*	1	1255	156	0.	*	1	1855	228	0.
1	0100	13	90.	*	1	0700	85	0.	*	1	1300	157	0.	*	1	1900	229	0.
1	0105	14	102.	*	1	0705	86	0.	*	1	1305	158	0.	*	1	1905	230	0.
1	0110	15	126.	*	1	0710	87	0.	*	1	1310	159	0.	*	1	1910	231	0.
1	0115	16	144.	*	1	0715	88	0.	*	1	1315	160	0.	*	1	1915	232	0.
1	0120	17	149.	*	1	0720	89	0.	*	1	1320	161	0.	*	1	1920	233	0.
1	0125	18	151.	*	1	0725	90	0.	*	1	1325	162	0.	*	1	1925	234	0.
1	0130	19	173.	*	1	0730	91	0.	*	1	1330	163	0.	*	1	1930	235	0.
1	0135	20	195.	*	1	0735	92	0.	*	1	1335	164	0.	*	1	1935	236	0.
1	0140	21	196.	*	1	0740	93	0.	*	1	1340	165	0.	*	1	1940	237	0.
1	0145	22	210.	*	1	0745	94	0.	*	1	1345	166	0.	*	1	1945	238	0.
1	0150	23	244.	*	1	0750	95	0.	*	1	1350	167	0.	*	1	1950	239	0.
1	0155	24	258.	*	1	0755	96	0.	*	1	1355	168	0.	*	1	1955	240	0.
1	0200	25	253.	*	1	0800	97	0.	*	1	1400	169	0.	*	1	2000	241	0.
1	0205	26	255.	*	1	0805	98	0.	*	1	1405	170	0.	*	1	2005	242	0.
1	0210	27	275.	*	1	0810	99	0.	*	1	1410	171	0.	*	1	2010	243	0.
1	0215	28	339.	*	1	0815	100	0.	*	1	1415	172	0.	*	1	2015	244	0.
1	0220	29	397.	*	1	0820	101	0.	*	1	1420	173	0.	*	1	2020	245	0.
1	0225	30	410.	*	1	0825	102	0.	*	1	1425	174	0.	*	1	2025	246	0.
1	0230	31	543.	*	1	0830	103	0.	*	1	1430	175	0.	*	1	2030	247	0.
1	0235	32	675.	*	1	0835	104	0.	*	1	1435	176	0.	*	1	2035	248	0.
1	0240	33	740.	*	1	0840	105	0.	*	1	1440	177	0.	*	1	2040	249	0.
1	0245	34	635.	*	1	0845	106	0.	*	1	1445	178	0.	*	1	2045	250	0.
1	0250	35	414.	*	1	0850	107	0.	*	1	1450	179	0.	*	1	2050	251	0.
1	0255	36	269.	*	1	0855	108	0.	*	1	1455	180	0.	*	1	2055	252	0.
1	0300	37	195.	*	1	0900	109	0.	*	1	1500	181	0.	*	1	2100	253	0.
1	0305	38	119.	*	1	0905	110	0.	*	1	1505	182	0.	*	1	2105	254	0.
1	0310	39	63.	*	1	0910	111	0.	*	1	1510	183	0.	*	1	2110	255	0.
1	0315	40	37.	*	1	0915	112	0.	*	1	1515	184	0.	*	1	2115	256	0.
1	0320	41	23.	*	1	0920	113	0.	*	1	1520	185	0.	*	1	2120	257	0.
1	0325	42	16.	*	1	0925	114	0.	*	1	1525	186	0.	*	1	2125	258	0.
1	0330	43	10.	*	1	0930	115	0.	*	1	1530	187	0.	*	1	2130	259	0.
1	0335	44	6.	*	1	0935	116	0.	*	1	1535	188	0.	*	1	2135	260	0.
1	0340	45	3.	*	1	0940	117	0.	*	1	1540	189	0.	*	1	2140	261	0.
1	0345	46	1.	*	1	0945	118	0.	*	1	1545	190	0.	*	1	2145	262	0.
1	0350	47	1.	*	1	0950	119	0.	*	1	1550	191	0.	*	1	2150	263	0.
1	0355	48	0.	*	1	0955	120	0.	*	1	1555	192	0.	*	1	2155	264	0.
1	0400	49	0.	*	1	1000	121	0.	*	1	1600	193	0.	*	1	2200	265	0.
1	0405	50	0.	*	1	1005	122	0.	*	1	1605	194	0.	*	1	2205	266	0.
1	0410	51	0.	*	1	1010	123	0.	*	1	1610	195	0.	*	1	2210	267	0.
1	0415	52	0.	*	1	1015	124	0.	*	1	1615	196	0.	*	1	2215	268	0.
1	0420	53	0.	*	1	1020	125	0.	*	1	1620	197	0.	*	1	2220	269	0.
1	0425	54	0.	*	1	1025	126	0.	*	1	1625	198	0.	*	1	2225	270	0.
1	0430	55	0.	*	1	1030	127	0.	*	1	1630	199	0.	*	1	2230	271	0.
1	0435	56	0.	*	1	1035	128	0.	*	1	1635	200	0.	*	1	2235	272	0.
1	0440	57	0.	*	1	1040	129	0.	*	1	1640	201	0.	*	1	2240	273	0.
1	0445	58	0.	*	1	1045	130	0.	*	1	1645	202	0.	*	1	2245	274	0.
1	0450	59	0.	*	1	1050	131	0.	*	1	1650	203	0.	*	1	2250	275	0.
1	0455	60	0.	*	1	1055	132	0.	*	1	1655	204	0.	*	1	2255	276	0.
1	0500	61	0.	*	1	1100	133	0.	*	1	1700	205	0.	*	1	2300	277	0.
1	0505	62	0.	*	1	1105	134	0.	*	1	1705	206	0.	*	1	2305	278	0.
1	0510	63	0.	*	1	1110	135	0.	*	1	1710	207	0.	*	1	2310	279	0.
1	0515	64	0.	*	1	1115	136	0.	*	1	1715	208	0.	*	1	2315	280	0.
1	0520	65	0.	*	1	1120	137	0.	*	1	1720	209	0.	*	1	2320	281	0.
1	0525	66	0.	*	1	1125	138	0.	*	1	1725	210	0.	*	1	2325	282	0.
1	0530	67	0.	*	1	1130	139	0.	*	1	1730	211	0.	*	1	2330	283	0.
1	0535	68	0.	*	1	1135	140	0.	*	1	1735	212	0.	*	1	2335	284	0.

1	0540	69	0.	*	1	1140	141	0.	*	1	1740	213	0.	*	1	2340	285	0.
1	0545	70	0.	*	1	1145	142	0.	*	1	1745	214	0.	*	1	2345	286	0.
1	0550	71	0.	*	1	1150	143	0.	*	1	1750	215	0.	*	1	2350	287	0.
1	0555	72	0.	*	1	1155	144	0.	*	1	1755	216	0.	*	1	2355	288	0.
			*					*					*					

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
740.	2.67	116.	29.	29.	29.
		(INCHES)	1.613	1.613	1.613
		(AC-FT)	58.	58.	58.

CUMULATIVE AREA = .67 SQ MI

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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	101	483.	2.67	73.	18.	18.	.43		
ROUTED TO	R102-103	470.	2.67	73.	18.	18.	.43		
HYDROGRAPH AT	103	270.	2.67	43.	11.	11.	.24		
2 COMBINED AT	HC-1	740.	2.67	116.	29.	29.	.67		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
 (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	INTERPOLATED TO COMPUTATION INTERVAL		
							PEAK	TIME TO PEAK	VOLUME
							(MIN)	(CFS)	(MIN)
R102-103	MANE	2.15	471.73	161.43	1.59	5.00	469.86	160.00	1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3637E+02 EXCESS= .0000E+00 OUTFLOW= .3637E+02 BASIN STORAGE= .1184E-02 PERCENT ERROR= .0

** NORMAL END OF HEC-1 ***

**5 – Pershing Channel Proposed Condition
100-yr/6-hr
(HEC-1 Output)**

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*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 21JUL06 TIME 17:03:15
*
*****

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

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      X  X  XXXXXXXX  XXXXX      X
      X  X  X      X  X      XX
      X  X  X      X      X
      XXXXXXXX  XXXX  X      XXXXX  X
      X  X  X      X      X
      X  X  X      X  X      X
      X  X  XXXXXXXX  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 -AMSK- 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

HEC-1 INPUT

PAGE 1

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

*** FREE ***

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1      ID  RBF Consulting
2      ID
3      ID  *****
4      ID  PROPOSED CONDITION ANALYSIS
5      ID  BANNING - 100-yr/6-Hr
6      ID  *****
7      ID
8      ID  FEBRUARY 22, 2006  REVISED HYROLOGY
9      ID  Filename: PCP6hr.i/dat      WITH DIVERSION TO SMITH
10     ID  Concentration Point: Pershing Channel @ Wilson St.
11     ID  Complex Unit Hydrograph - Find Qmax (proposed)
12     ID
13     ID
      *DIAGRAM

```

*** NOLIST ***

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT

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

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

16 101
V
V
36 R102-103
.
.
39 . 103
.
.
59 HC-1.....

***) RUNOFF ALSO COMPUTED AT THIS LOCATION

*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
JUN 1998 *
VERSION 4.1 *
*
* RUN DATE 21JUL06 TIME 17:03:15 *
*

*
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* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*

RBF Consulting

PROPOSED CONDITION ANALYSIS
BANNING - 100-yr/6-Hr

FEBRUARY 22, 2006 REVISED HYROLOGY
Filename: PCP6hr.i/dat WITH DIVERSION TO SMITH
Concentration Point: Pershing Channel @ Wilson St.
Complex Unit Hydrograph - Find Qmax (proposed)

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

IT HYDROGRAPH TIME DATA
NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 1 0 ENDING DATE
NDTIME 2355 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS

ENGLISH UNITS
DRAINAGE AREA SQUARE MILES

PRECIPITATION DEPTH INCHES
 LENGTH, ELEVATION FEET
 FLOW CUBIC FEET PER SECOND
 STORAGE VOLUME ACRE-Feet
 SURFACE AREA ACRES
 TEMPERATURE DEGREES FAHRENHEIT

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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	101	457.	5.58	93.	23.	23.	.43		
ROUTED TO	R102-103	455.	5.58	93.	23.	23.	.43		
HYDROGRAPH AT	103	259.	5.58	55.	14.	14.	.24		
2 COMBINED AT	HC-1	714.	5.58	148.	37.	37.	.67		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
 (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	INTERPOLATED TO COMPUTATION INTERVAL		VOLUME
							PEAK	TIME TO PEAK	
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
R102-103	MANE	2.19	455.20	333.04	2.01	5.00	455.07	335.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4602E+02 EXCESS= .0000E+00 OUTFLOW= .4602E+02 BASIN STORAGE= .1266E-02 PERCENT ERROR= .0

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

```

*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 18AUG06 TIME 14:10:39
*
*****

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DETAILED OUTPUT

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

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X   X   XXXXXXXX   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   XXXXXXXX   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 -AMSK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
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 DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
 KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT

PAGE 1

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

*** FREE ***

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1      ID   RBF Consulting
2      ID
3      ID   *****
4      ID   PROPOSED CONDITION ANALYSIS
5      ID   BANNING - 100-yr/6-Hr
6      ID   *****
7      ID
8      ID   FEBRUARY 22, 2006   REVISED HYROLOGY
9      ID   Filename: PCP6hr.i/dat   WITH DIVERSION TO SMITH
10     ID   Concentration Point: Pershing Channel @ Wilson St.
11     ID   Complex Unit Hydrograph - Find Qmax (proposed)
12     ID
13     ID
      *DIAGRAM

```

*** NOLIST ***

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT

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

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

16 101
V
V
36 R102-103
.
.
39 . 103
.
.
59 HC-1.....

***) RUNOFF ALSO COMPUTED AT THIS LOCATION

*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 18AUG06 TIME 14:10:39 *
*

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

RBF Consulting

PROPOSED CONDITION ANALYSIS
BANNING - 100-yr/6-Hr

FEBRUARY 22, 2006 REVISED HYROLOGY
Filename: PCP6hr.i/dat WITH DIVERSION TO SMITH
Concentration Point: Pershing Channel @ Wilson St.
Complex Unit Hydrograph - Find Qmax (proposed)

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

IT HYDROGRAPH TIME DATA
NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 1 0 ENDING DATE
NDTIME 2355 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS

ENGLISH UNITS
DRAINAGE AREA SQUARE MILES

PRECIPITATION DEPTH INCHES
 LENGTH, ELEVATION FEET
 FLOW CUBIC FEET PER SECOND
 STORAGE VOLUME ACRE-FEET
 SURFACE AREA ACRES
 TEMPERATURE DEGREES FAHRENHEIT

 * *
 16 KK * 101 *
 * *

101 HYDROGRAPH DEVELOPMENT AREA "P-1"
 POINT RAINFALL DEPTH = 3.50 INCHES
 DEPTH-AREA REDUCTION FACTOR = 0.999
 F = 0.257 IN/HR
 LOW LOSS FRACTION = 0.9
 UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

22 BA SUBBASIN CHARACTERISTICS
 TAREA .43 SUBBASIN AREA

PRECIPITATION DATA

23 PB STORM 3.50 BASIN TOTAL PRECIPITATION

24 PI INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

32 LU UNIFORM LOSS RATE
 STRTL .00 INITIAL LOSS
 CNSTL .29 UNIFORM LOSS RATE
 RTIMP 10.00 PERCENT IMPERVIOUS AREA

32 UI INPUT UNITGRAPH, 12 ORDINATES, VOLUME = 1.00

490.0	1612.0	539.0	301.0	178.0	98.0	49.0	14.0	14.0	14.0
14.1	5.6								

HYDROGRAPH AT STATION 101

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
								*								
1		0000	1	.00	.00	.00	0.	*	1		1200	145	.00	.00	.00	0.
1		0005	2	.02	.02	.00	1.	*	1		1205	146	.00	.00	.00	0.
1		0010	3	.02	.02	.00	4.	*	1		1210	147	.00	.00	.00	0.
1		0015	4	.02	.02	.00	5.	*	1		1215	148	.00	.00	.00	0.
1		0020	5	.02	.02	.00	6.	*	1		1220	149	.00	.00	.00	0.
1		0025	6	.02	.02	.00	6.	*	1		1225	150	.00	.00	.00	0.
1		0030	7	.02	.02	.00	7.	*	1		1230	151	.00	.00	.00	0.
1		0035	8	.02	.02	.00	9.	*	1		1235	152	.00	.00	.00	0.
1		0040	9	.02	.02	.00	9.	*	1		1240	153	.00	.00	.00	0.
1		0045	10	.02	.02	.00	10.	*	1		1245	154	.00	.00	.00	0.
1		0050	11	.02	.02	.00	10.	*	1		1250	155	.00	.00	.00	0.
1		0055	12	.02	.02	.00	10.	*	1		1255	156	.00	.00	.00	0.
1		0100	13	.03	.02	.01	12.	*	1		1300	157	.00	.00	.00	0.
1		0105	14	.03	.02	.01	17.	*	1		1305	158	.00	.00	.00	0.
1		0110	15	.03	.02	.01	19.	*	1		1310	159	.00	.00	.00	0.
1		0115	16	.03	.02	.01	20.	*	1		1315	160	.00	.00	.00	0.
1		0120	17	.03	.02	.01	21.	*	1		1320	161	.00	.00	.00	0.
1		0125	18	.03	.02	.01	21.	*	1		1325	162	.00	.00	.00	0.
1		0130	19	.03	.02	.01	22.	*	1		1330	163	.00	.00	.00	0.
1		0135	20	.03	.02	.01	22.	*	1		1335	164	.00	.00	.00	0.
1		0140	21	.03	.02	.01	22.	*	1		1340	165	.00	.00	.00	0.
1		0145	22	.03	.02	.01	22.	*	1		1345	166	.00	.00	.00	0.
1		0150	23	.03	.02	.01	22.	*	1		1350	167	.00	.00	.00	0.
1		0155	24	.03	.02	.01	22.	*	1		1355	168	.00	.00	.00	0.
1		0200	25	.03	.02	.01	24.	*	1		1400	169	.00	.00	.00	0.
1		0205	26	.03	.02	.01	27.	*	1		1405	170	.00	.00	.00	0.
1		0210	27	.03	.02	.01	25.	*	1		1410	171	.00	.00	.00	0.
1		0215	28	.03	.02	.01	30.	*	1		1415	172	.00	.00	.00	0.
1		0220	29	.03	.02	.01	32.	*	1		1420	173	.00	.00	.00	0.
1		0225	30	.03	.02	.01	32.	*	1		1425	174	.00	.00	.00	0.
1		0230	31	.03	.02	.01	33.	*	1		1430	175	.00	.00	.00	0.
1		0235	32	.03	.02	.01	33.	*	1		1435	176	.00	.00	.00	0.
1		0240	33	.03	.02	.01	33.	*	1		1440	177	.00	.00	.00	0.
1		0245	34	.04	.02	.01	35.	*	1		1445	178	.00	.00	.00	0.
1		0250	35	.04	.02	.01	41.	*	1		1450	179	.00	.00	.00	0.
1		0255	36	.04	.02	.01	43.	*	1		1455	180	.00	.00	.00	0.
1		0300	37	.04	.02	.01	44.	*	1		1500	181	.00	.00	.00	0.
1		0305	38	.04	.02	.01	44.	*	1		1505	182	.00	.00	.00	0.
1		0310	39	.04	.02	.02	46.	*	1		1510	183	.00	.00	.00	0.
1		0315	40	.04	.02	.02	52.	*	1		1515	184	.00	.00	.00	0.
1		0320	41	.04	.02	.02	54.	*	1		1520	185	.00	.00	.00	0.
1		0325	42	.04	.02	.02	57.	*	1		1525	186	.00	.00	.00	0.
1		0330	43	.05	.02	.02	65.	*	1		1530	187	.00	.00	.00	0.
1		0335	44	.05	.02	.03	75.	*	1		1535	188	.00	.00	.00	0.
1		0340	45	.05	.02	.03	83.	*	1		1540	189	.00	.00	.00	0.
1		0345	46	.05	.02	.03	89.	*	1		1545	190	.00	.00	.00	0.
1		0350	47	.05	.02	.03	96.	*	1		1550	191	.00	.00	.00	0.
1		0355	48	.06	.02	.03	101.	*	1		1555	192	.00	.00	.00	0.
1		0400	49	.06	.02	.03	109.	*	1		1600	193	.00	.00	.00	0.
1		0405	50	.06	.02	.04	113.	*	1		1605	194	.00	.00	.00	0.
1		0410	51	.06	.02	.04	122.	*	1		1610	195	.00	.00	.00	0.
1		0415	52	.07	.02	.05	132.	*	1		1615	196	.00	.00	.00	0.
1		0420	53	.07	.02	.05	143.	*	1		1620	197	.00	.00	.00	0.
1		0425	54	.07	.02	.05	154.	*	1		1625	198	.00	.00	.00	0.
1		0430	55	.07	.02	.05	164.	*	1		1630	199	.00	.00	.00	0.
1		0435	56	.08	.02	.06	170.	*	1		1635	200	.00	.00	.00	0.
1		0440	57	.08	.02	.06	179.	*	1		1640	201	.00	.00	.00	0.
1		0445	58	.08	.02	.06	190.	*	1		1645	202	.00	.00	.00	0.

1	0450	59	.08	.02	.06	199.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.02	.07	205.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.02	.07	214.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.02	.09	232.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.13	.02	.10	272.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.02	.12	317.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.02	.13	355.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.02	.14	395.	*	1	1725	210	.00	.00	.00	0.
1	0530	67	.20	.02	.17	453.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.02	.05	457.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.02	.01	258.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	142.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	80.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	46.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	26.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	14.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	9.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	7.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	4.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	2.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	0.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	0.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	0.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	0.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	0.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	0.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.

1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.
1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.
								*						

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TOTAL RAINFALL = 3.50, TOTAL LOSS = 1.49, TOTAL EXCESS = 2.01

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
		(CFS)			
457.	5.58	93.	23.	23.	23.
		(INCHES)			
		2.001	2.006	2.006	2.006
		(AC-FT)			
		46.	46.	46.	46.

CUMULATIVE AREA = .43 SQ MI

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* R102-103 *
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ROUTE HYDROGRAPH DEVELOPMENT AREA 1

HYDROGRAPH ROUTING DATA

38 RD MUSKINGUM-CUNGE CHANNEL ROUTING
L 2776. CHANNEL LENGTH
S .0200 SLOPE
N .015 CHANNEL ROUGHNESS COEFFICIENT

CA .00 CONTRIBUTING AREA
 SHAPE TRAP CHANNEL SHAPE
 WD 10.00 BOTTOM WIDTH OR DIAMETER
 Z 1.00 SIDE SLOPE

COMPUTED MUSKINGUM-CUNGE PARAMETERS

ELEMENT	ALPHA	M	COMPUTATION TIME STEP		PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
			DT (MIN)	DX (FT)				
MAIN	3.78	1.48	2.19	1388.00	455.20	333.04	2.01	21.12

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	3.78	1.48	5.00	455.07	335.00	2.01
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .4602E+02 EXCESS= .0000E+00 OUTFLOW= .4602E+02 BASIN STORAGE= .1266E-02 PERCENT ERROR= .0

HYDROGRAPH AT STATION R102-103

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0600	73	41.	*	1	1200	145	0.	*	1	1800	217	0.				
1	0005	2	0.	*	1	0605	74	25.	*	1	1205	146	0.	*	1	1805	218	0.				
1	0010	3	1.	*	1	0610	75	14.	*	1	1210	147	0.	*	1	1810	219	0.				
1	0015	4	4.	*	1	0615	76	9.	*	1	1215	148	0.	*	1	1815	220	0.				
1	0020	5	5.	*	1	0620	77	7.	*	1	1220	149	0.	*	1	1820	221	0.				
1	0025	6	6.	*	1	0625	78	4.	*	1	1225	150	0.	*	1	1825	222	0.				
1	0030	7	7.	*	1	0630	79	2.	*	1	1230	151	0.	*	1	1830	223	0.				
1	0035	8	7.	*	1	0635	80	1.	*	1	1235	152	0.	*	1	1835	224	0.				
1	0040	9	9.	*	1	0640	81	0.	*	1	1240	153	0.	*	1	1840	225	0.				
1	0045	10	9.	*	1	0645	82	0.	*	1	1245	154	0.	*	1	1845	226	0.				
1	0050	11	10.	*	1	0650	83	0.	*	1	1250	155	0.	*	1	1850	227	0.				
1	0055	12	10.	*	1	0655	84	0.	*	1	1255	156	0.	*	1	1855	228	0.				
1	0100	13	10.	*	1	0700	85	0.	*	1	1300	157	0.	*	1	1900	229	0.				
1	0105	14	13.	*	1	0705	86	0.	*	1	1305	158	0.	*	1	1905	230	0.				
1	0110	15	17.	*	1	0710	87	0.	*	1	1310	159	0.	*	1	1910	231	0.				
1	0115	16	19.	*	1	0715	88	0.	*	1	1315	160	0.	*	1	1915	232	0.				
1	0120	17	20.	*	1	0720	89	0.	*	1	1320	161	0.	*	1	1920	233	0.				
1	0125	18	21.	*	1	0725	90	0.	*	1	1325	162	0.	*	1	1925	234	0.				
1	0130	19	21.	*	1	0730	91	0.	*	1	1330	163	0.	*	1	1930	235	0.				
1	0135	20	22.	*	1	0735	92	0.	*	1	1335	164	0.	*	1	1935	236	0.				
1	0140	21	22.	*	1	0740	93	0.	*	1	1340	165	0.	*	1	1940	237	0.				
1	0145	22	22.	*	1	0745	94	0.	*	1	1345	166	0.	*	1	1945	238	0.				
1	0150	23	22.	*	1	0750	95	0.	*	1	1350	167	0.	*	1	1950	239	0.				
1	0155	24	22.	*	1	0755	96	0.	*	1	1355	168	0.	*	1	1955	240	0.				
1	0200	25	22.	*	1	0800	97	0.	*	1	1400	169	0.	*	1	2000	241	0.				
1	0205	26	24.	*	1	0805	98	0.	*	1	1405	170	0.	*	1	2005	242	0.				
1	0210	27	27.	*	1	0810	99	0.	*	1	1410	171	0.	*	1	2010	243	0.				

1	0215	28	26.	*	1	0815	100	0.	*	1	1415	172	0.	*	1	2015	244	0.
1	0220	29	30.	*	1	0820	101	0.	*	1	1420	173	0.	*	1	2020	245	0.
1	0225	30	32.	*	1	0825	102	0.	*	1	1425	174	0.	*	1	2025	246	0.
1	0230	31	33.	*	1	0830	103	0.	*	1	1430	175	0.	*	1	2030	247	0.
1	0235	32	33.	*	1	0835	104	0.	*	1	1435	176	0.	*	1	2035	248	0.
1	0240	33	33.	*	1	0840	105	0.	*	1	1440	177	0.	*	1	2040	249	0.
1	0245	34	34.	*	1	0845	106	0.	*	1	1445	178	0.	*	1	2045	250	0.
1	0250	35	36.	*	1	0850	107	0.	*	1	1450	179	0.	*	1	2050	251	0.
1	0255	36	41.	*	1	0855	108	0.	*	1	1455	180	0.	*	1	2055	252	0.
1	0300	37	43.	*	1	0900	109	0.	*	1	1500	181	0.	*	1	2100	253	0.
1	0305	38	44.	*	1	0905	110	0.	*	1	1505	182	0.	*	1	2105	254	0.
1	0310	39	45.	*	1	0910	111	0.	*	1	1510	183	0.	*	1	2110	255	0.
1	0315	40	48.	*	1	0915	112	0.	*	1	1515	184	0.	*	1	2115	256	0.
1	0320	41	53.	*	1	0920	113	0.	*	1	1520	185	0.	*	1	2120	257	0.
1	0325	42	55.	*	1	0925	114	0.	*	1	1525	186	0.	*	1	2125	258	0.
1	0330	43	60.	*	1	0930	115	0.	*	1	1530	187	0.	*	1	2130	259	0.
1	0335	44	68.	*	1	0935	116	0.	*	1	1535	188	0.	*	1	2135	260	0.
1	0340	45	78.	*	1	0940	117	0.	*	1	1540	189	0.	*	1	2140	261	0.
1	0345	46	86.	*	1	0945	118	0.	*	1	1545	190	0.	*	1	2145	262	0.
1	0350	47	92.	*	1	0950	119	0.	*	1	1550	191	0.	*	1	2150	263	0.
1	0355	48	99.	*	1	0955	120	0.	*	1	1555	192	0.	*	1	2155	264	0.
1	0400	49	104.	*	1	1000	121	0.	*	1	1600	193	0.	*	1	2200	265	0.
1	0405	50	111.	*	1	1005	122	0.	*	1	1605	194	0.	*	1	2205	266	0.
1	0410	51	117.	*	1	1010	123	0.	*	1	1610	195	0.	*	1	2210	267	0.
1	0415	52	127.	*	1	1015	124	0.	*	1	1615	196	0.	*	1	2215	268	0.
1	0420	53	137.	*	1	1020	125	0.	*	1	1620	197	0.	*	1	2220	269	0.
1	0425	54	149.	*	1	1025	126	0.	*	1	1625	198	0.	*	1	2225	270	0.
1	0430	55	159.	*	1	1030	127	0.	*	1	1630	199	0.	*	1	2230	271	0.
1	0435	56	167.	*	1	1035	128	0.	*	1	1635	200	0.	*	1	2235	272	0.
1	0440	57	175.	*	1	1040	129	0.	*	1	1640	201	0.	*	1	2240	273	0.
1	0445	58	185.	*	1	1045	130	0.	*	1	1645	202	0.	*	1	2245	274	0.
1	0450	59	195.	*	1	1050	131	0.	*	1	1650	203	0.	*	1	2250	275	0.
1	0455	60	202.	*	1	1055	132	0.	*	1	1655	204	0.	*	1	2255	276	0.
1	0500	61	210.	*	1	1100	133	0.	*	1	1700	205	0.	*	1	2300	277	0.
1	0505	62	224.	*	1	1105	134	0.	*	1	1705	206	0.	*	1	2305	278	0.
1	0510	63	255.	*	1	1110	135	0.	*	1	1710	207	0.	*	1	2310	279	0.
1	0515	64	299.	*	1	1115	136	0.	*	1	1715	208	0.	*	1	2315	280	0.
1	0520	65	341.	*	1	1120	137	0.	*	1	1720	209	0.	*	1	2320	281	0.
1	0525	66	381.	*	1	1125	138	0.	*	1	1725	210	0.	*	1	2325	282	0.
1	0530	67	431.	*	1	1130	139	0.	*	1	1730	211	0.	*	1	2330	283	0.
1	0535	68	455.	*	1	1135	140	0.	*	1	1735	212	0.	*	1	2335	284	0.
1	0540	69	342.	*	1	1140	141	0.	*	1	1740	213	0.	*	1	2340	285	0.
1	0545	70	196.	*	1	1145	142	0.	*	1	1745	214	0.	*	1	2345	286	0.
1	0550	71	114.	*	1	1150	143	0.	*	1	1750	215	0.	*	1	2350	287	0.
1	0555	72	67.	*	1	1155	144	0.	*	1	1755	216	0.	*	1	2355	288	0.

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
(CFS)	(HR)	(CFS)			
455.	5.58	93.	23.	23.	23.
		(INCHES)	2.002	2.008	2.008
		(AC-FT)	46.	46.	46.

CUMULATIVE AREA = .43 SQ MI

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39 KK * 103 *

103 HYDROGRAPH DEVELOPMENT AREA "P-2"
POINT RAINFALL DEPTH = 3.50 INCHES
DEPTH-AREA REDUCTION FACTOR = 0.999
F = 0.231 IN/HR
LOW LOSS FRACTION = 0.9
UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH

SUBBASIN RUNOFF DATA

45 BA SUBBASIN CHARACTERISTICS
TAREA .24 SUBBASIN AREA

PRECIPITATION DATA

46 PB STORM 3.50 BASIN TOTAL PRECIPITATION

47 PI INCREMENTAL PRECIPITATION PATTERN

.50	.60	.60	.60	.60	.70	.70	.70	.70	.70
.70	.80	.80	.80	.80	.80	.80	.80	.80	.80
.80	.80	.80	.90	.80	.90	.90	.90	.90	.90
.90	.90	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.10
1.20	1.30	1.40	1.40	1.50	1.50	1.60	1.60	1.70	1.80
1.90	2.00	2.10	2.10	2.20	2.30	2.40	2.40	2.50	2.60
3.10	3.60	3.90	4.20	4.70	5.60	1.90	.90	.60	.50
.30	.20								

55 LU UNIFORM LOSS RATE
STRTL .00 INITIAL LOSS
CNSTL .26 UNIFORM LOSS RATE
RTIMP 10.00 PERCENT IMPERVIOUS AREA

55 UI INPUT UNITGRAPH, 13 ORDINATES, VOLUME = 1.00

234.0	843.0	344.0	177.0	109.0	68.0	38.0	14.0	7.0	7.0
7.2	7.2	2.9							

HYDROGRAPH AT STATION 103

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q		DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1	0000	1	.00	.00	.00	0.	*		1	1200	145	.00	.00	.00	0.	
1	0005	2	.02	.02	.00	0.	*		1	1205	146	.00	.00	.00	0.	
1	0010	3	.02	.02	.00	2.	*		1	1210	147	.00	.00	.00	0.	
1	0015	4	.02	.02	.00	3.	*		1	1215	148	.00	.00	.00	0.	
1	0020	5	.02	.02	.00	3.	*		1	1220	149	.00	.00	.00	0.	
1	0025	6	.02	.02	.00	4.	*		1	1225	150	.00	.00	.00	0.	

1	0030	7	.02	.02	.01	4.	*	1	1230	151	.00	.00	.00	0.
1	0035	8	.02	.02	.01	7.	*	1	1235	152	.00	.00	.00	0.
1	0040	9	.02	.02	.01	8.	*	1	1240	153	.00	.00	.00	0.
1	0045	10	.02	.02	.01	9.	*	1	1245	154	.00	.00	.00	0.
1	0050	11	.02	.02	.01	9.	*	1	1250	155	.00	.00	.00	0.
1	0055	12	.02	.02	.01	9.	*	1	1255	156	.00	.00	.00	0.
1	0100	13	.03	.02	.01	10.	*	1	1300	157	.00	.00	.00	0.
1	0105	14	.03	.02	.01	13.	*	1	1305	158	.00	.00	.00	0.
1	0110	15	.03	.02	.01	15.	*	1	1310	159	.00	.00	.00	0.
1	0115	16	.03	.02	.01	15.	*	1	1315	160	.00	.00	.00	0.
1	0120	17	.03	.02	.01	16.	*	1	1320	161	.00	.00	.00	0.
1	0125	18	.03	.02	.01	16.	*	1	1325	162	.00	.00	.00	0.
1	0130	19	.03	.02	.01	16.	*	1	1330	163	.00	.00	.00	0.
1	0135	20	.03	.02	.01	16.	*	1	1335	164	.00	.00	.00	0.
1	0140	21	.03	.02	.01	16.	*	1	1340	165	.00	.00	.00	0.
1	0145	22	.03	.02	.01	16.	*	1	1345	166	.00	.00	.00	0.
1	0150	23	.03	.02	.01	16.	*	1	1350	167	.00	.00	.00	0.
1	0155	24	.03	.02	.01	16.	*	1	1355	168	.00	.00	.00	0.
1	0200	25	.03	.02	.01	17.	*	1	1400	169	.00	.00	.00	0.
1	0205	26	.03	.02	.01	19.	*	1	1405	170	.00	.00	.00	0.
1	0210	27	.03	.02	.01	18.	*	1	1410	171	.00	.00	.00	0.
1	0215	28	.03	.02	.01	21.	*	1	1415	172	.00	.00	.00	0.
1	0220	29	.03	.02	.01	22.	*	1	1420	173	.00	.00	.00	0.
1	0225	30	.03	.02	.01	22.	*	1	1425	174	.00	.00	.00	0.
1	0230	31	.03	.02	.01	22.	*	1	1430	175	.00	.00	.00	0.
1	0235	32	.03	.02	.01	22.	*	1	1435	176	.00	.00	.00	0.
1	0240	33	.03	.02	.01	23.	*	1	1440	177	.00	.00	.00	0.
1	0245	34	.04	.02	.02	23.	*	1	1445	178	.00	.00	.00	0.
1	0250	35	.04	.02	.02	26.	*	1	1450	179	.00	.00	.00	0.
1	0255	36	.04	.02	.02	28.	*	1	1455	180	.00	.00	.00	0.
1	0300	37	.04	.02	.02	28.	*	1	1500	181	.00	.00	.00	0.
1	0305	38	.04	.02	.02	29.	*	1	1505	182	.00	.00	.00	0.
1	0310	39	.04	.02	.02	30.	*	1	1510	183	.00	.00	.00	0.
1	0315	40	.04	.02	.02	33.	*	1	1515	184	.00	.00	.00	0.
1	0320	41	.04	.02	.02	34.	*	1	1520	185	.00	.00	.00	0.
1	0325	42	.04	.02	.02	36.	*	1	1525	186	.00	.00	.00	0.
1	0330	43	.05	.02	.03	40.	*	1	1530	187	.00	.00	.00	0.
1	0335	44	.05	.02	.03	45.	*	1	1535	188	.00	.00	.00	0.
1	0340	45	.05	.02	.03	50.	*	1	1540	189	.00	.00	.00	0.
1	0345	46	.05	.02	.03	53.	*	1	1545	190	.00	.00	.00	0.
1	0350	47	.05	.02	.03	57.	*	1	1550	191	.00	.00	.00	0.
1	0355	48	.06	.02	.04	60.	*	1	1555	192	.00	.00	.00	0.
1	0400	49	.06	.02	.04	64.	*	1	1600	193	.00	.00	.00	0.
1	0405	50	.06	.02	.04	67.	*	1	1605	194	.00	.00	.00	0.
1	0410	51	.06	.02	.04	71.	*	1	1610	195	.00	.00	.00	0.
1	0415	52	.07	.02	.05	77.	*	1	1615	196	.00	.00	.00	0.
1	0420	53	.07	.02	.05	83.	*	1	1620	197	.00	.00	.00	0.
1	0425	54	.07	.02	.05	89.	*	1	1625	198	.00	.00	.00	0.
1	0430	55	.07	.02	.05	95.	*	1	1630	199	.00	.00	.00	0.
1	0435	56	.08	.02	.06	98.	*	1	1635	200	.00	.00	.00	0.
1	0440	57	.08	.02	.06	103.	*	1	1640	201	.00	.00	.00	0.
1	0445	58	.08	.02	.06	109.	*	1	1645	202	.00	.00	.00	0.
1	0450	59	.08	.02	.06	114.	*	1	1650	203	.00	.00	.00	0.
1	0455	60	.09	.02	.07	118.	*	1	1655	204	.00	.00	.00	0.
1	0500	61	.09	.02	.07	123.	*	1	1700	205	.00	.00	.00	0.
1	0505	62	.11	.02	.09	132.	*	1	1705	206	.00	.00	.00	0.
1	0510	63	.13	.02	.11	153.	*	1	1710	207	.00	.00	.00	0.
1	0515	64	.14	.02	.12	178.	*	1	1715	208	.00	.00	.00	0.
1	0520	65	.15	.02	.13	199.	*	1	1720	209	.00	.00	.00	0.
1	0525	66	.16	.02	.15	221.	*	1	1725	210	.00	.00	.00	0.

1	0530	67	.20	.02	.18	252.	*	1	1730	211	.00	.00	.00	0.
1	0535	68	.07	.02	.05	259.	*	1	1735	212	.00	.00	.00	0.
1	0540	69	.03	.02	.01	158.	*	1	1740	213	.00	.00	.00	0.
1	0545	70	.02	.02	.00	91.	*	1	1745	214	.00	.00	.00	0.
1	0550	71	.02	.02	.00	53.	*	1	1750	215	.00	.00	.00	0.
1	0555	72	.01	.01	.00	32.	*	1	1755	216	.00	.00	.00	0.
1	0600	73	.01	.01	.00	19.	*	1	1800	217	.00	.00	.00	0.
1	0605	74	.00	.00	.00	10.	*	1	1805	218	.00	.00	.00	0.
1	0610	75	.00	.00	.00	6.	*	1	1810	219	.00	.00	.00	0.
1	0615	76	.00	.00	.00	4.	*	1	1815	220	.00	.00	.00	0.
1	0620	77	.00	.00	.00	3.	*	1	1820	221	.00	.00	.00	0.
1	0625	78	.00	.00	.00	2.	*	1	1825	222	.00	.00	.00	0.
1	0630	79	.00	.00	.00	1.	*	1	1830	223	.00	.00	.00	0.
1	0635	80	.00	.00	.00	0.	*	1	1835	224	.00	.00	.00	0.
1	0640	81	.00	.00	.00	0.	*	1	1840	225	.00	.00	.00	0.
1	0645	82	.00	.00	.00	0.	*	1	1845	226	.00	.00	.00	0.
1	0650	83	.00	.00	.00	0.	*	1	1850	227	.00	.00	.00	0.
1	0655	84	.00	.00	.00	0.	*	1	1855	228	.00	.00	.00	0.
1	0700	85	.00	.00	.00	0.	*	1	1900	229	.00	.00	.00	0.
1	0705	86	.00	.00	.00	0.	*	1	1905	230	.00	.00	.00	0.
1	0710	87	.00	.00	.00	0.	*	1	1910	231	.00	.00	.00	0.
1	0715	88	.00	.00	.00	0.	*	1	1915	232	.00	.00	.00	0.
1	0720	89	.00	.00	.00	0.	*	1	1920	233	.00	.00	.00	0.
1	0725	90	.00	.00	.00	0.	*	1	1925	234	.00	.00	.00	0.
1	0730	91	.00	.00	.00	0.	*	1	1930	235	.00	.00	.00	0.
1	0735	92	.00	.00	.00	0.	*	1	1935	236	.00	.00	.00	0.
1	0740	93	.00	.00	.00	0.	*	1	1940	237	.00	.00	.00	0.
1	0745	94	.00	.00	.00	0.	*	1	1945	238	.00	.00	.00	0.
1	0750	95	.00	.00	.00	0.	*	1	1950	239	.00	.00	.00	0.
1	0755	96	.00	.00	.00	0.	*	1	1955	240	.00	.00	.00	0.
1	0800	97	.00	.00	.00	0.	*	1	2000	241	.00	.00	.00	0.
1	0805	98	.00	.00	.00	0.	*	1	2005	242	.00	.00	.00	0.
1	0810	99	.00	.00	.00	0.	*	1	2010	243	.00	.00	.00	0.
1	0815	100	.00	.00	.00	0.	*	1	2015	244	.00	.00	.00	0.
1	0820	101	.00	.00	.00	0.	*	1	2020	245	.00	.00	.00	0.
1	0825	102	.00	.00	.00	0.	*	1	2025	246	.00	.00	.00	0.
1	0830	103	.00	.00	.00	0.	*	1	2030	247	.00	.00	.00	0.
1	0835	104	.00	.00	.00	0.	*	1	2035	248	.00	.00	.00	0.
1	0840	105	.00	.00	.00	0.	*	1	2040	249	.00	.00	.00	0.
1	0845	106	.00	.00	.00	0.	*	1	2045	250	.00	.00	.00	0.
1	0850	107	.00	.00	.00	0.	*	1	2050	251	.00	.00	.00	0.
1	0855	108	.00	.00	.00	0.	*	1	2055	252	.00	.00	.00	0.
1	0900	109	.00	.00	.00	0.	*	1	2100	253	.00	.00	.00	0.
1	0905	110	.00	.00	.00	0.	*	1	2105	254	.00	.00	.00	0.
1	0910	111	.00	.00	.00	0.	*	1	2110	255	.00	.00	.00	0.
1	0915	112	.00	.00	.00	0.	*	1	2115	256	.00	.00	.00	0.
1	0920	113	.00	.00	.00	0.	*	1	2120	257	.00	.00	.00	0.
1	0925	114	.00	.00	.00	0.	*	1	2125	258	.00	.00	.00	0.
1	0930	115	.00	.00	.00	0.	*	1	2130	259	.00	.00	.00	0.
1	0935	116	.00	.00	.00	0.	*	1	2135	260	.00	.00	.00	0.
1	0940	117	.00	.00	.00	0.	*	1	2140	261	.00	.00	.00	0.
1	0945	118	.00	.00	.00	0.	*	1	2145	262	.00	.00	.00	0.
1	0950	119	.00	.00	.00	0.	*	1	2150	263	.00	.00	.00	0.
1	0955	120	.00	.00	.00	0.	*	1	2155	264	.00	.00	.00	0.
1	1000	121	.00	.00	.00	0.	*	1	2200	265	.00	.00	.00	0.
1	1005	122	.00	.00	.00	0.	*	1	2205	266	.00	.00	.00	0.
1	1010	123	.00	.00	.00	0.	*	1	2210	267	.00	.00	.00	0.
1	1015	124	.00	.00	.00	0.	*	1	2215	268	.00	.00	.00	0.
1	1020	125	.00	.00	.00	0.	*	1	2220	269	.00	.00	.00	0.
1	1025	126	.00	.00	.00	0.	*	1	2225	270	.00	.00	.00	0.

1	1030	127	.00	.00	.00	0.	*	1	2230	271	.00	.00	.00	0.
1	1035	128	.00	.00	.00	0.	*	1	2235	272	.00	.00	.00	0.
1	1040	129	.00	.00	.00	0.	*	1	2240	273	.00	.00	.00	0.
1	1045	130	.00	.00	.00	0.	*	1	2245	274	.00	.00	.00	0.
1	1050	131	.00	.00	.00	0.	*	1	2250	275	.00	.00	.00	0.
1	1055	132	.00	.00	.00	0.	*	1	2255	276	.00	.00	.00	0.
1	1100	133	.00	.00	.00	0.	*	1	2300	277	.00	.00	.00	0.
1	1105	134	.00	.00	.00	0.	*	1	2305	278	.00	.00	.00	0.
1	1110	135	.00	.00	.00	0.	*	1	2310	279	.00	.00	.00	0.
1	1115	136	.00	.00	.00	0.	*	1	2315	280	.00	.00	.00	0.
1	1120	137	.00	.00	.00	0.	*	1	2320	281	.00	.00	.00	0.
1	1125	138	.00	.00	.00	0.	*	1	2325	282	.00	.00	.00	0.
1	1130	139	.00	.00	.00	0.	*	1	2330	283	.00	.00	.00	0.
1	1135	140	.00	.00	.00	0.	*	1	2335	284	.00	.00	.00	0.
1	1140	141	.00	.00	.00	0.	*	1	2340	285	.00	.00	.00	0.
1	1145	142	.00	.00	.00	0.	*	1	2345	286	.00	.00	.00	0.
1	1150	143	.00	.00	.00	0.	*	1	2350	287	.00	.00	.00	0.
1	1155	144	.00	.00	.00	0.	*	1	2355	288	.00	.00	.00	0.

*

TOTAL RAINFALL = 3.50, TOTAL LOSS = 1.36, TOTAL EXCESS = 2.14

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	23.92-HR	
259.	5.58	55.	14.	14.	14.	
		(INCHES)	2.137	2.144	2.144	2.144
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = .24 SQ MI

* *
59 KK * HC-1 *
* *

COMBINE HYDROGRAPHS AREA 1 AND AREA 2

61 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION HC-1
SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
*					*					*					*				

1	0000	1	0.	*	1	0600	73	60.	*	1	1200	145	0.	*	1	1800	217	0.
1	0005	2	0.	*	1	0605	74	35.	*	1	1205	146	0.	*	1	1805	218	0.
1	0010	3	3.	*	1	0610	75	20.	*	1	1210	147	0.	*	1	1810	219	0.
1	0015	4	6.	*	1	0615	76	14.	*	1	1215	148	0.	*	1	1815	220	0.
1	0020	5	9.	*	1	0620	77	10.	*	1	1220	149	0.	*	1	1820	221	0.
1	0025	6	10.	*	1	0625	78	7.	*	1	1225	150	0.	*	1	1825	222	0.
1	0030	7	11.	*	1	0630	79	3.	*	1	1230	151	0.	*	1	1830	223	0.
1	0035	8	14.	*	1	0635	80	1.	*	1	1235	152	0.	*	1	1835	224	0.
1	0040	9	17.	*	1	0640	81	0.	*	1	1240	153	0.	*	1	1840	225	0.
1	0045	10	18.	*	1	0645	82	0.	*	1	1245	154	0.	*	1	1845	226	0.
1	0050	11	19.	*	1	0650	83	0.	*	1	1250	155	0.	*	1	1850	227	0.
1	0055	12	19.	*	1	0655	84	0.	*	1	1255	156	0.	*	1	1855	228	0.
1	0100	13	21.	*	1	0700	85	0.	*	1	1300	157	0.	*	1	1900	229	0.
1	0105	14	26.	*	1	0705	86	0.	*	1	1305	158	0.	*	1	1905	230	0.
1	0110	15	32.	*	1	0710	87	0.	*	1	1310	159	0.	*	1	1910	231	0.
1	0115	16	35.	*	1	0715	88	0.	*	1	1315	160	0.	*	1	1915	232	0.
1	0120	17	36.	*	1	0720	89	0.	*	1	1320	161	0.	*	1	1920	233	0.
1	0125	18	37.	*	1	0725	90	0.	*	1	1325	162	0.	*	1	1925	234	0.
1	0130	19	37.	*	1	0730	91	0.	*	1	1330	163	0.	*	1	1930	235	0.
1	0135	20	38.	*	1	0735	92	0.	*	1	1335	164	0.	*	1	1935	236	0.
1	0140	21	38.	*	1	0740	93	0.	*	1	1340	165	0.	*	1	1940	237	0.
1	0145	22	38.	*	1	0745	94	0.	*	1	1345	166	0.	*	1	1945	238	0.
1	0150	23	38.	*	1	0750	95	0.	*	1	1350	167	0.	*	1	1950	239	0.
1	0155	24	38.	*	1	0755	96	0.	*	1	1355	168	0.	*	1	1955	240	0.
1	0200	25	39.	*	1	0800	97	0.	*	1	1400	169	0.	*	1	2000	241	0.
1	0205	26	43.	*	1	0805	98	0.	*	1	1405	170	0.	*	1	2005	242	0.
1	0210	27	45.	*	1	0810	99	0.	*	1	1410	171	0.	*	1	2010	243	0.
1	0215	28	47.	*	1	0815	100	0.	*	1	1415	172	0.	*	1	2015	244	0.
1	0220	29	52.	*	1	0820	101	0.	*	1	1420	173	0.	*	1	2020	245	0.
1	0225	30	54.	*	1	0825	102	0.	*	1	1425	174	0.	*	1	2025	246	0.
1	0230	31	55.	*	1	0830	103	0.	*	1	1430	175	0.	*	1	2030	247	0.
1	0235	32	55.	*	1	0835	104	0.	*	1	1435	176	0.	*	1	2035	248	0.
1	0240	33	56.	*	1	0840	105	0.	*	1	1440	177	0.	*	1	2040	249	0.
1	0245	34	57.	*	1	0845	106	0.	*	1	1445	178	0.	*	1	2045	250	0.
1	0250	35	63.	*	1	0850	107	0.	*	1	1450	179	0.	*	1	2050	251	0.
1	0255	36	69.	*	1	0855	108	0.	*	1	1455	180	0.	*	1	2055	252	0.
1	0300	37	71.	*	1	0900	109	0.	*	1	1500	181	0.	*	1	2100	253	0.
1	0305	38	73.	*	1	0905	110	0.	*	1	1505	182	0.	*	1	2105	254	0.
1	0310	39	75.	*	1	0910	111	0.	*	1	1510	183	0.	*	1	2110	255	0.
1	0315	40	81.	*	1	0915	112	0.	*	1	1515	184	0.	*	1	2115	256	0.
1	0320	41	87.	*	1	0920	113	0.	*	1	1520	185	0.	*	1	2120	257	0.
1	0325	42	91.	*	1	0925	114	0.	*	1	1525	186	0.	*	1	2125	258	0.
1	0330	43	99.	*	1	0930	115	0.	*	1	1530	187	0.	*	1	2130	259	0.
1	0335	44	113.	*	1	0935	116	0.	*	1	1535	188	0.	*	1	2135	260	0.
1	0340	45	128.	*	1	0940	117	0.	*	1	1540	189	0.	*	1	2140	261	0.
1	0345	46	139.	*	1	0945	118	0.	*	1	1545	190	0.	*	1	2145	262	0.
1	0350	47	149.	*	1	0950	119	0.	*	1	1550	191	0.	*	1	2150	263	0.
1	0355	48	159.	*	1	0955	120	0.	*	1	1555	192	0.	*	1	2155	264	0.
1	0400	49	168.	*	1	1000	121	0.	*	1	1600	193	0.	*	1	2200	265	0.
1	0405	50	177.	*	1	1005	122	0.	*	1	1605	194	0.	*	1	2205	266	0.
1	0410	51	188.	*	1	1010	123	0.	*	1	1610	195	0.	*	1	2210	267	0.
1	0415	52	204.	*	1	1015	124	0.	*	1	1615	196	0.	*	1	2215	268	0.
1	0420	53	220.	*	1	1020	125	0.	*	1	1620	197	0.	*	1	2220	269	0.
1	0425	54	238.	*	1	1025	126	0.	*	1	1625	198	0.	*	1	2225	270	0.
1	0430	55	254.	*	1	1030	127	0.	*	1	1630	199	0.	*	1	2230	271	0.
1	0435	56	265.	*	1	1035	128	0.	*	1	1635	200	0.	*	1	2235	272	0.
1	0440	57	278.	*	1	1040	129	0.	*	1	1640	201	0.	*	1	2240	273	0.
1	0445	58	294.	*	1	1045	130	0.	*	1	1645	202	0.	*	1	2245	274	0.
1	0450	59	309.	*	1	1050	131	0.	*	1	1650	203	0.	*	1	2250	275	0.
1	0455	60	320.	*	1	1055	132	0.	*	1	1655	204	0.	*	1	2255	276	0.

1	0500	61	333.	*	1	1100	133	0.	*	1	1700	205	0.	*	1	2300	277	0.
1	0505	62	356.	*	1	1105	134	0.	*	1	1705	206	0.	*	1	2305	278	0.
1	0510	63	408.	*	1	1110	135	0.	*	1	1710	207	0.	*	1	2310	279	0.
1	0515	64	477.	*	1	1115	136	0.	*	1	1715	208	0.	*	1	2315	280	0.
1	0520	65	539.	*	1	1120	137	0.	*	1	1720	209	0.	*	1	2320	281	0.
1	0525	66	601.	*	1	1125	138	0.	*	1	1725	210	0.	*	1	2325	282	0.
1	0530	67	683.	*	1	1130	139	0.	*	1	1730	211	0.	*	1	2330	283	0.
1	0535	68	714.	*	1	1135	140	0.	*	1	1735	212	0.	*	1	2335	284	0.
1	0540	69	501.	*	1	1140	141	0.	*	1	1740	213	0.	*	1	2340	285	0.
1	0545	70	287.	*	1	1145	142	0.	*	1	1745	214	0.	*	1	2345	286	0.
1	0550	71	167.	*	1	1150	143	0.	*	1	1750	215	0.	*	1	2350	287	0.
1	0555	72	99.	*	1	1155	144	0.	*	1	1755	216	0.	*	1	2355	288	0.
				*					*					*				

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	23.92-HR
714.	5.58	148.	37.	37.	37.
		(INCHES)	2.050	2.056	2.056
		(AC-FT)	73.	73.	73.

CUMULATIVE AREA = .67 SQ MI

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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	101	457.	5.58	93.	23.	23.	.43		
ROUTED TO	R102-103	455.	5.58	93.	23.	23.	.43		
HYDROGRAPH AT	103	259.	5.58	55.	14.	14.	.24		
2 COMBINED AT	HC-1	714.	5.58	148.	37.	37.	.67		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
R102-103	MANE	2.19	455.20	333.04	2.01	5.00	455.07	335.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4602E+02 EXCESS= .0000E+00 OUTFLOW= .4602E+02 BASIN STORAGE= .1266E-02 PERCENT ERROR= .0

6 – Proposed Basins Outlet Rating Curves

BASIN #1 OUTLET

Upper Basin Outlet Rating Curve

Trapezoidal Weir Outlet

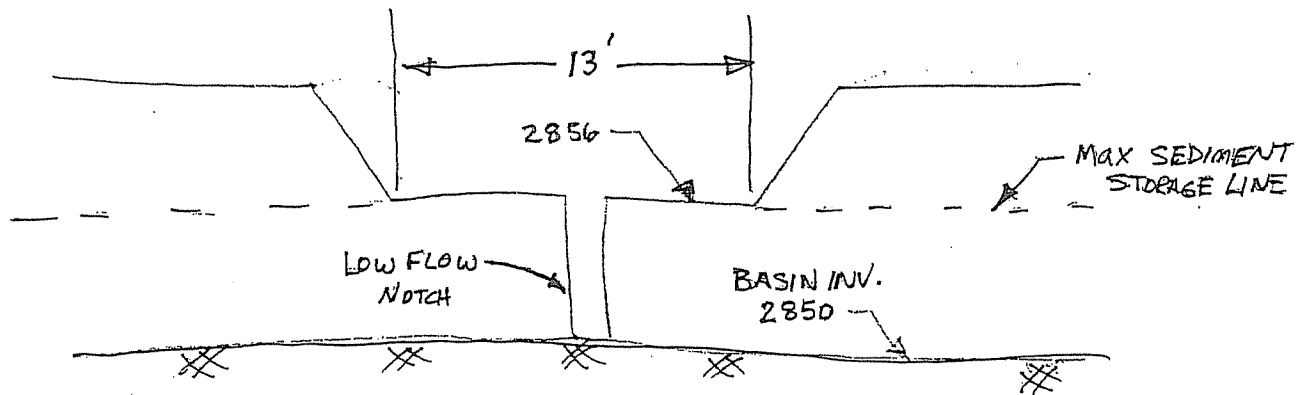
$v =$

5

APPROACH VELOCITY

Base Width	Z factor	C	Depth	Top Width	Wetted P	Flow Rate	
						$v = 0$	$v = 5$
13	2	3.25	7	41	44.30	2666.55	2891.42
13	2	3.25	6	37	39.83	1902.48	2090.07
13	2	3.25	5	33	35.36	1284.78	1437.28
13	2	3.25	4	29	30.89	803.05	922.75
13	2	3.25	3.35	26.4	27.98	557.57	657.24
13	2	3.25	3	25	26.42	446.08	535.41
13	2	3.25	2.5	23	24.18	310.62	385.71
13	2	3.25	2	21	21.94	201.71	263.20
13	2	3.25	1.5	19	19.71	117.67	166.18
13	2	3.25	1	17	17.47	56.78	92.87
13	2	3.25	0.5	15	15.24	17.51	41.45

USE $V=0$
(most conservative)

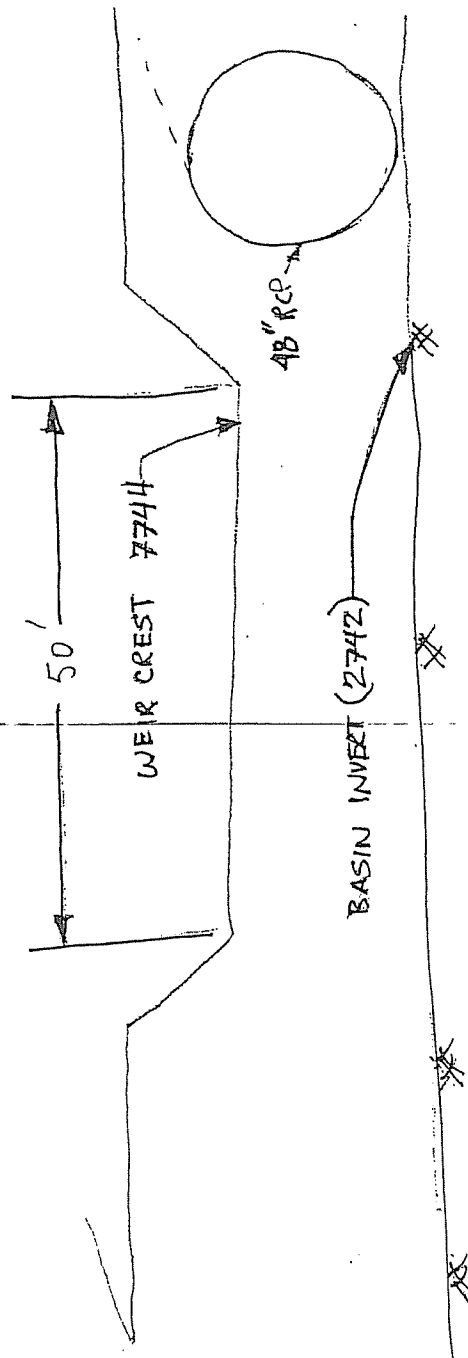


Basin #2 Rating Curve

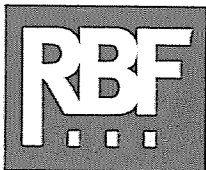
[illegible]

			sum'
Elev	Area	Volume	
2742	0.08	0.00	
2743	0.50	0.29	
2744	1.52	1.30	
2744.1	1.60	1.46	
2745	2.30	3.21	
2746	2.53	5.63	
2747	2.77	8.28	
2748	3.00	11.16	
2749	3.24	14.28	
2750	3.47	17.64	

BASIN OUTLET STRUCTURE



PARDEE HOMES
BANNING/DEUTCH PROPERTIES BACKBONE DRAINAGE REPORT



TECHNICAL APPENDIX B

Loss Rate Calculations

Existing Condition Loss Rate Calculations



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JOB NAME _____

JOB NO. _____

SHEET NO. _____ OF _____

DESIGNED BY _____ DATE _____

CHECKED BY _____ DATE _____

BANNAIL - EXISTING COND. HYDROLOGY
(SMITH CREEK)

1/2

OK

100-YR

COMPARE & USE GREATEST

- 3 & 6 HR STORMS TO FIND Q_{max} WHEN NO DETENTION EXIST
- 24 HR STORM TO FIND Q_{max} WHEN DETENTION EXISTS.
- TO FIND VOLUME MAX.

FOLLOW GUIDELINES IN RIVERSIDE CO. MANUAL PLATE E-1.1

PROCEDURE:

- FIRST DO ALL HAND. CALCS. & LOSSES.
- RUN LAPRE-1
- RUN HEC-11

② HAND CALCULATIONS. SMITH CREEK TRIBUTARY

- $A = 5.23 \text{ mi}^2$
- $L = 6.78 \text{ mi}$ (Longest Watercourse)
- $L_{ca} = 3.27 \text{ mi}$
- $S = 662.91 \text{ ft/mi}$
- $\bar{n} = 0.024$ → Area weighted average of all stream 'n' values within watercourse

③
$$\text{Lag} = 24 \bar{n} \left[\frac{L \cdot L_{ca}}{S^{1/2}} \right]^{0.38} = \boxed{0.54 \text{ hrs}}$$

④ SELECT UNIT TIME PERIOD: 25% Lag = suggestion $\Rightarrow (0.54 \text{ hr}) \cdot (25) = 8.1 \text{ min} \Rightarrow \text{USE } \boxed{5 \text{ min}}$

FLOOD HYDROGRAPH CALCS

PLATE E-5.8

① POINT RAINFALL $\begin{matrix} 100\text{-YR}/3\text{-HR} = 2.35'' \\ 100\text{-YR}/6\text{-HR} = 3.50'' \\ 100\text{-YR}/24\text{-HR} = 7.50'' \end{matrix}$ (PLATES E-5.1 - E-5.7) → DEPTH AREA RED. = 0.983
→ DEPTH AREA " = 0.986
→ DEPTH AREA " = 0.993

② PATTERN PERCENTAGES (PLATE E-5.9) mult by Adjusted Avg P. RAINFALL (SPREAD SHEET)

③ PERVIOUS AREA LOSS RATES (SPREAD SHEET)

$F = F_p (1.0 - 0.9A_i)$

F = Averaged loss rate (in/hr) $\frac{0.314}{0.70} \text{ in/hr}$
 F_p = Loss rate for pervious Area. (AMC II unless spillway or DSD DESIGN)
 A_i = Impervious Area (actual)

• USED FOR "LU" CARD

- INITIAL LOSS = 0.00 REFCO STANDARD
- UNIFORM LOSS = $(F/\text{Low Loss}) = 0.314/0.9 = 0.349$
- %IMPERVIOUS = 10% $= 0.099 \text{ USE } 10\%$ * Low Loss = 0.9 for 100-YR typ.

JOB NAME _____

JOB NO. _____

SHEET NO. _____ OF _____

DESIGNED BY _____ DATE _____

CHECKED BY _____ DATE _____

BANNING - EXISTING COND HYDROLOGY (PERSHING CHANNEL)

2/2

OK

100-YR (3 & 6 hr) *ONLY NEED 24-HR WHEN BASINS ARE USED
SINGLE AREA

LOSS CALCULATIONS:

$$\begin{aligned} A &= 1.04 \text{ mi}^2 \\ L &= 2.02 \text{ mi} \\ L_{ca} &= 1.07 \text{ mi} \\ S &= 339.11 \text{ ft/mi} \longrightarrow (3240-2555)/2.02 \text{ mi} \\ n &= 0.020 \end{aligned}$$

$$\text{LAG} = 24 n \left[\frac{L \cdot L_{ca}}{S^{1/2}} \right]^{0.38} = \boxed{0.21}$$

• SELECT UNIT TIME PERIOD $\approx 25\%$ LAG = 3.15 min $\rightarrow$ USE $\boxed{5.0 \text{ min}}$

FLOOD HYDROGRAPH CALCS.

① POINT RAINFALL 100-YR/3-HR = 2.35" (PLATES E-5.1 - E-5.7) $\rightarrow$ (PLATE E-5.8 2)
100-YR/6-HR = 3.50" $\rightarrow$ DEPTH AREA RED. = 0.995
DEPTH AREA RED. = 0.997

② PATTERN PERCENTAGES (PLATE E-5.9) mult by Adjusted Avg. Pt. Precip. (spread sheet)

③ PERVIOUS AREA LOSS RATES (SPREAD SHEET)

$$\begin{aligned} F &= \text{Adjusted loss rate (in/hr)} = \boxed{0.204} \quad 0.344 \\ F_p &= \text{Loss Rate for pervious Area (AMC II)} \\ A_i &= \text{Impervious Area (actual)} \end{aligned}$$

• USED FOR "LU" CARD

$$\begin{aligned} \text{INITIAL LOSS} &= 0.00 \text{ RCDD STANDARD} \\ \text{UNIFORM LOSS} &= (F / \text{low loss}) = (0.204 / 0.9) = 0.227 \quad 0.382 \\ \text{\% Impervious} &= \text{\% Impervious} = 0.045 \text{ vs } 18\% \end{aligned}$$

24 Area
4
Q_{100-3HR} = 963 cfs (1.45 cfs/ac) (Governs)

Q_{100-6HR} = 946 cfs

Q_{100 (mp)} = 825 cfs

BPEX3HR.OUT

BPEX6HR.OUT

Banning (Deutsch Properties) AMC II 100-Year Storm Event - Existing Condition (3-6 hr duration storms)

Table 3: Average Adjusted Infiltration Rates

Subarea ID	Landuse	Soil Group	Cover		RI Number	(1) Pervious Area Infiltration Rate(in/hr); Fp	(2) Impervious Area Fraction; Ai	(3) Adjusted Infiltration Rate(in/hr)	(4) Area (Ac.)	(5) Total Area Fraction	(6) Average Adjusted Infiltration
			Type	Condition							
A Smith		A	Open brush	Fair	46	0.61	0.05	0.58	191.8	0.057	0.033
		B	Open brush	Fair	66	0.41	0.05	0.39	1515.0	0.452	0.177
		C	Open brush	Fair	77	0.28	0.05	0.27	73.0	0.022	0.006
		D	Open brush	Fair	83	0.21	0.02	0.21	1544.4	0.461	0.095
		A	Urban	Fair	46	0.61	0.60	0.28	24.2	0.007	0.002
B Persh											
								Total=	3348.4	1.000	0.314
		A	Open brush	Fair	46	0.61	0.60	0.28	48.5	0.073	0.021
		B	Open brush	Fair	66	0.41	0.01	0.41	384.1	0.579	0.235
		D	Open brush	Fair	83	0.21	0.00	0.21	164.7	0.248	0.052
		B	Urban	Fair	66	0.41	0.60	0.19	25.8	0.039	0.007
		A	Urban	Fair	46	0.61	0.25	0.47	40.4	0.061	0.029
								Total=	663.5	1.000	0.344

Notes:

- (1) From RCFCDD Hydrology Manual, Plate E-6.2 (AMC 2)
 - (2) From RCFCDD Hydrology Manual, Plate E-6.3
 - (3) Pervious Area Infiltration Rate * (1- 0.9(Impervious Area Fraction))
 - (4) Average Adjusted Infiltration Rate= Adjusted Infiltration Rate * Total Area Fraction
- MDR - Medium Density residential (2-5 du/ac.)
 MHDR - Medium High Density Residential (5-8 du/ac.)
 OS-C - Open Space (Conservation)
 OS-R - Open Space-Rural
 OS-W - Open Space - Water
 RM - Rural Mountainous (10 ac. min)
 VLDR-RC - Rural Community - Very Low Density Residential (1 ac. min)

Proposed Condition Loss Rate Calculations



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JOB NAME BANNING

JOB NO. 10104365

SHEET NO. _____ OF _____

DESIGNED BY TJR DATE 2/22/06

CHECKED BY _____ DATE _____

PROPOSED CONDITION - SMITH CREEK
LAPRE-1 / HEC-1 INPUT PARAMETERS

1/2

AREA

(S-1): $TDA = 1955.1 ac = 3.05 mi^2$
 $L = 4.74 mi$
 $LCA = 2.66 mi$
 $S = (5032 - 2900) / 4.74 = 449.79 ft/mi$
 $n = 0.022$

(S-2): $TDA = 689.7 ac = 1.08 mi^2$
 $L = 2.11 mi$
 $LCA = 1.19 mi$
 $S = (3600 - 2742) / 2.11 = 406.64 ft/mi$
 $n = 0.02$

(S-3): $TDA = 527.70 ac = 0.82 mi^2$
 $L = 1.80 mi$
 $LCA = 1.09 mi$
 $S = (3120 - 3635) / 1.80 = 269.44 ft/mi$
 $n = 0.018$

(S-4): $TDA = 322.80 ac = 0.50 mi^2$
 $L = 1.97 mi$
 $LCA = 0.74 mi$
 $S = (2794 - 2570) / 1.97 = 113.71 ft/mi$
 $n = 0.018$

(S-5): $TDA = 78.2 ac = 0.12 mi^2$
 $L = 0.63 mi$
 $LCA = 0.26 mi$
 $S = (2620 - 258) / 0.63 = 64.29 ft/mi$
 $n = 0.015$

DEPTH AREA REDUCTIONS FOR EACH AREA

AREA	3-HR	6-HR	24-HR
(S-1)	0.990	0.992	0.995
(S-2)	0.995	0.996	0.998
(S-3)	0.996	0.997	0.999
(S-4)	0.999	0.999	0.999
(S-5)	0.999	0.999	0.999

$P_{100-yr} \text{ 6-HR} = 3.50"$

$P_{100-yr} \text{ 3-HR} = 2.35"$

LOSS RATES (PERVIOUS AREAS) $\Rightarrow$ [SPREAD SHEET] $F = F_p (1.0 - 0.9Ai)$ AME II

(S-1) $\Rightarrow F = 0.297$ (S-4) $\Rightarrow F = 0.258$
 (S-2) $\Rightarrow F = 0.296$ (S-5) $\Rightarrow F = 0.134$
 (S-3) $\Rightarrow F = 0.237$

ALL DUECTIONS "LU" CARD
 - INITIAL LOSS = 0.0
 - UNIT LOSS = $F / \text{low loss}$
 - % IMP = 10% (TYPICAL)
 - LOW LOSS = 89
 (100% R only)

AREA

(S-1) = 0.330
 (S-2) = 0.329
 (S-3) = 0.263
 (S-4) = 0.287
 (S-5) = 0.143

$\rightarrow$ FOR ALL RUNS



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800.479.3808 • WWW.RBF.COMJOB NAME BANNUKJOB NO. 10104365

SHEET NO. _____ OF _____

DESIGNED BY TJR DATE 3/22/06

CHECKED BY _____ DATE _____

PROPOSED CONDITION - PERSHING CHANNEL

2/2

LAPRE-1/HEC-1 INPUT PARAMETERS

AREA

$$\textcircled{P-1} = \begin{aligned} &TDA = 273.50 \text{ ac} = 0.43 \text{ mi}^2 \\ &L = 1.65 \\ &LCA = 0.41 \\ &S = (3200 - 2616) / 1.65 = 353.94 \text{ ft/mi} \\ &n = 0.02 \end{aligned}$$

$$\textcircled{P-2} = \begin{aligned} &TDA = 156.50 \text{ ac} = 0.24 \text{ mi}^2 \\ &L = 1.07 \\ &LCA = 0.55 \\ &S = (2631 - 2553) / 1.07 = 72.9 \text{ ft/mi} \\ &n = 0.017 \end{aligned}$$

DEPTH AREA REDUCTIONS FOR EACH AREA

<u>AREA</u>	<u>3-HR</u>	<u>6-HR</u>	<u>24-HR</u>
(P-1)	0.999	0.999	0.999
(P-2)	0.999	0.999	0.999

LOSS RATES (PERVIOUS AREAS) → [SPREADSHEET] : $F = F_p (1.0 - 0.9A_i)$, AMC II (FOR ALL RUNS)

$$\begin{aligned} (P-1) &\rightarrow F = 0.357 \\ (P-2) &\rightarrow F = 0.231 \end{aligned} \quad \left. \vphantom{\begin{aligned} (P-1) &\rightarrow F = 0.357 \\ (P-2) &\rightarrow F = 0.231 \end{aligned}} \right\} \text{ALL DURATIONS}$$

"LU" CARD INFO

- INITIAL LOSS = 0.0 (RCFCD STD)
- UNIFORM LOSS $\Rightarrow F$ / LOW LOSS $\longrightarrow$
 - Low Loss = 0.9 (60-yr) (RCFCD STD)
- % imp. = 10% (RCFCD STD)

AREA

$$(P-1) = 0.257 / 0.9 = 0.286$$

$$(P-2) = 0.231 / 0.9 = 0.257$$

Banning (Deutsch Properties) AMC 2 100-Year Storm Event - Proposed condition
 Table 4: Average Adjusted Loss Infiltration Rates (DURATIONS OF 1 - 6 HR. ST

Updated: 2/22/06

(1) (2) (3)

Subarea ID	Landuse	Soil Group	Cover		RI Number	Pervious Area Infiltration Rate(in/hr) Fp	Impervious Area Fraction Ai	Adjusted Loss Rate (in/hr) F	Area (Ac.)	Total Area Fraction	Average Adjusted Loss Rate(in/hr)
			Type	Condition							
S-1	Offsite - OS-C	C	Open Brush	Fair	77	0.28	0.00	0.28	190.3	0.097	0.027
	Offsite - OS-C	D	Open Brush	Fair	81	0.24	0.00	0.24	81.5	0.042	0.010
	Offsite - AG	A	Past-Irrig	Fair	44	0.63	0.05	0.60	38.9	0.020	0.012
	Offsite - AG	B	Past-Irrig	Fair	65	0.42	0.00	0.42	398.4	0.204	0.086
	Offsite - AG	C	Past-Irrig	Fair	77	0.28	0.00	0.28	437.2	0.224	0.063
	Offsite - AG	D	Past-Irrig	Fair	82	0.23	0.00	0.23	97.2	0.050	0.011
	Offsite - VLDR-RC	B	Urban	Fair	65	0.42	0.10	0.38	20.4	0.010	0.004
	Offsite - VLDR-RC	D	Urban	Fair	82	0.23	0.10	0.21	30.5	0.016	0.003
	Offsite - RM	B	Open Brush	Fair	66	0.40	0.00	0.40	15.0	0.008	0.003
	Offsite - RM	C	Open Brush	Fair	77	0.28	0.00	0.28	12.8	0.007	0.002
	Offsite - RM	D	Open Brush	Fair	83	0.21	0.00	0.21	193.3	0.099	0.021
	Offsite - MDR	A	Urban	Fair	44	0.63	0.50	0.35	23.8	0.012	0.004
	Offsite - MDR	B	Urban	Fair	65	0.42	0.50	0.23	35.7	0.018	0.004
	Offsite - MDR	D	Urban	Fair	82	0.23	0.50	0.13	25.5	0.013	0.002
	MDR	A	Urban	Fair	44	0.63	0.50	0.35	44.5	0.023	0.008
	MDR	B	Urban	Fair	65	0.42	0.50	0.23	53.7	0.027	0.006
	MDR	D	Urban	Fair	82	0.23	0.50	0.13	55.3	0.028	0.004
	OC	A	Open Brush	Fair	44	0.63	0.05	0.60	9.1	0.005	0.003
	OC	B	Open Brush	Fair	66	0.40	0.05	0.38	31.7	0.016	0.006
	OC	D	Open Brush	Fair	83	0.21	0.05	0.20	4.5	0.002	0.000
S-2	OS-R	D	Open Brush	Fair	83	0.21	0.05	0.20	105.0	0.054	0.011
	LDR	A	Urban	Fair	44	0.63	0.50	0.35	15.2	0.008	0.003
	LDR	B	Urban	Fair	65	0.42	0.50	0.23	35.6	0.018	0.004
									1955.1	1.000	0.297
	RM	A	Open brush	Fair	41	0.66	0.00	0.66	26.9	0.039	0.026
	RM	B	Open brush	Fair	63	0.44	0.00	0.44	96.1	0.139	0.061
	RM	D	Open brush	Fair	81	0.24	0.00	0.24	235.2	0.341	0.082
	OS-R	A	Open brush	Fair	41	0.66	0.05	0.63	10.8	0.016	0.010
	OS-R	B	Open brush	Fair	63	0.44	0.05	0.42	77.4	0.112	0.047
	LDR	A	Urban	Fair	44	0.63	0.60	0.29	15.1	0.022	0.006
	LDR	B	Urban	Fair	65	0.42	0.60	0.19	228.2	0.331	0.064
									689.7	1.000	0.296

S-3	OS-R	A	Open Brush	Fair	41	0.66	0.05	0.63	10.9	0.021	0.013
	OS-R	B	Open Brush	Fair	63	0.44	0.05	0.42	46.8	0.089	0.037
	LDR	A	Urban	Fair	44	0.63	0.60	0.29	80.6	0.153	0.044
	LDR	B	Urban	Fair	65	0.42	0.60	0.19	389.4	0.738	0.143
S-4									527.7	1.000	0.237
	OS-R	B	Open brush	Fair	63	0.44	0.05	0.42	87.1	0.270	0.113
	LDR	A	Urban	Fair	44	0.63	0.60	0.29	10.2	0.032	0.009
	LDR	B	Urban	Fair	65	0.42	0.60	0.19	225.5	0.699	0.135
S-5									322.8	1.000	0.258
	MDR\HDR	B	Urban	Fair	65	0.42	0.65	0.17	53.2	0.680	0.119
	COM	B	Urban	Good	56	0.51	0.9	0.10	25.0	0.159	0.015
									78.2	0.839	0.134
P-2	MDR	B	Urban	Fair	65	0.42	0.50	0.23	157.5	1.000	0.231
									157.5	1.000	0.231
	RM	D	Open Brush	Fair	81	0.24	0.01	0.24	76.2	0.279	0.066
	MDR/LDR	A	Urban	Fair	44	0.63	0.5	0.35	57.7	0.211	0.073
P-1	MDR	B	Urban	Fair	65	0.42	0.5	0.23	139.6	0.510	0.118
									273.5	1.000	0.257
573.1											

*Land Uses based on General Plan

(1) From RCFCD Hydrology Manual, Plate E-6.2

(2) From RCFCD Hydrology Manual, Plate E-6.3

(3) Pervious Area Infiltration Rate * (1- 0.9(Impervious Area Fraction))

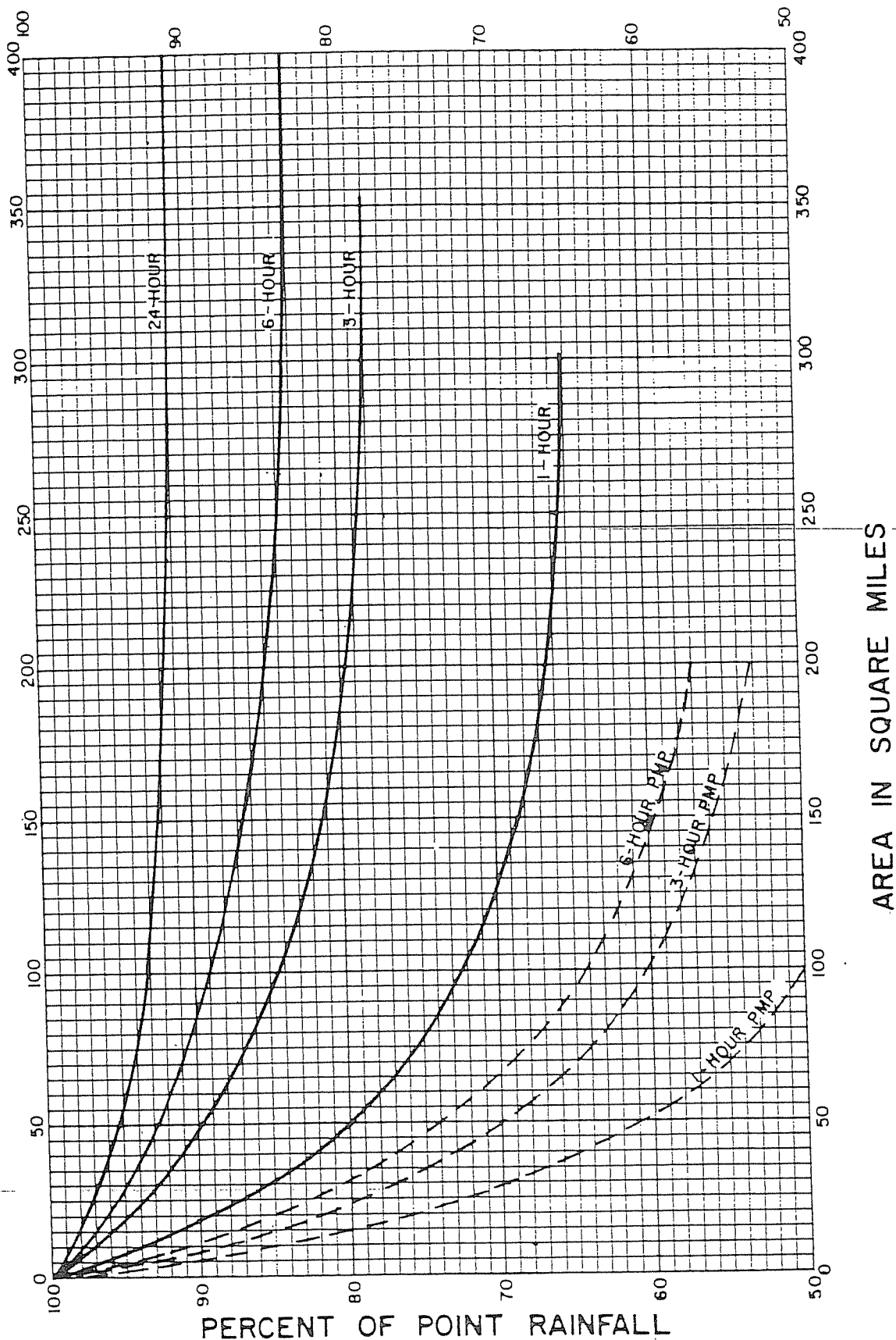
(4) Average Adjusted Infiltration Rate= Adjusted Infiltration Rate * Total Area Fraction

3495.3

431.0

0.284

MDR - Medium Density residential (2-5 du/ac.)
 MHDR - Medium High Density Residential (5-8 du/ac.)
 OS-C - Open Space (Conservation)
 OS-R - Open Space-Rural
 OS-W - Open Space - Water
 RM - Rural Mountainous (10 ac. min)

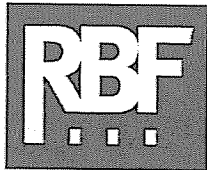


Reference: Bibliography Items No. 27 & 29.

RCFC & WCD
HYDROLOGY MANUAL

DEPTH-AREA-DURATION
RELATIONSHIPS

PARDEE HOMES
BANNING/DEUTCH PROPERTIES BACKBONE DRAINAGE REPORT



TECHNICAL APPENDIX C

Sediment Yield Calculation



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PLANNING ■ DESIGN ■ CONSTRUCTION
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JOB NAME _____

JOB NO. _____

SHEET NO. _____ OF _____

DESIGNED BY _____ DATE _____

CHECKED BY _____ DATE _____

SEDIMENT YIELD

(ALOE LOS ANGELES DIST. METHOD)
(TATUM METHOD)

For TDA < 3.0 mi²

$$\textcircled{1} \quad \log D_y = 0.65 (\log \overset{P}{Q}) + 0.62 (\log RR) + 0.18 (\log A) + 0.12 (FF)$$

For TDA > 3.0 mi²

$$\textcircled{2} \quad \log D_y = 0.85 (\log Q) + 0.53 (\log RR) + 0.04 (\log A) + 0.22 (FF)$$

WHERE:

D_y = Unit Debris Yield (yd³/mi²)

P = Max 1-HR Precip (inch x 100)

RR = Relief Ratio (ft/mi)

A = Drainage Area (ac)

FF = Non-Dimensional Fire Factor

Q = Unit Peak Runoff (ft³/s/mi²)

For TDA < 3.0 mi²:

$$\textcircled{1} : P = 1.4 \text{ in} \times 100 = 140$$

$$FF : 5 \text{ yr after Burn} = 4.2$$

$$1 \text{ yr after Burn} = 6.5$$

After Burn

$$A = 1738 \text{ ac. } (2.72 \text{ mi}^2)$$

$$RR = 449.79$$

$$5 \text{ yr} : \log D_y = 0.65 (\log 140)^{2.15} + 0.62 (\log 449.79)^{2.65} + 0.18 (\log 1738)^{3.24} + 0.12 (4.2)$$

$$D_y = 13,418 \text{ yd}^3/\text{mi}^2 \quad \therefore Y = 36497 \text{ yd}^3 = \boxed{22.6 \text{ ac-ft}}$$

$$1 \text{ yr} : \log D_y = \text{''} + \text{''} + \text{''} + 0.12 (6.5)$$

$$D_y = 25,333 \text{ yd}^3/\text{mi}^2 \quad \therefore Y = 68,653 \text{ yd}^3 = \boxed{42.6 \text{ ac-ft}} \quad (\otimes)$$

Basin 1: Debris Storage

