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CITY OF PEORIA, ARIZONA

STORM WATER MASTER PLAN

HYDROLOGY REPORT

April 1985

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INTRODUCTION

The City of Peoria is located in central Arizona, and is considered a bedroom suburb of Phoenix. Situated 13 miles northwest of Phoenix, Peoria was founded in 1879 as a farming community. According to the U.S. Bureau of the Census, the population of the City in 1970 was 4,754, a 75 percent increase over the 1960 figure. By 1980, the population of the City had grown to 12,320. The growth rate is expected to parallel that of the Phoenix metropolitan area. Projections indicate the population of Peoria will increase to 19,000 by 1985, and to 30,000 by 1990. Land costs have increased along with the population, and agriculture has declined significantly as large farming tracts are sold to developers for residential and commercial development. However, this development has occurred with virtually no storm drain system.

The City's only major underground drainage facility is the Peoria Avenue Storm Drain. A one-mile section of 60-inch reinforced concrete pipe storm sewer was installed in 1975 as part of a street improvement program along Peoria Avenue, a major arterial street. At that time, the storm sewer had no outlet, except for a 25-inch pressure relief line connected to an irrigation ditch. In June 1984, this storm sewer line was extended west to the normally dry New River and east to alleviate flooding and ponding areas along the major downtown street. In November 1984, the line was extended further east and north, including a pipe beneath the Atchison, Topeka, and Santa Fe Railroad. The total length of this storm sewer project is approximately 2.5 miles, with an outlet point at the New River.

Increased development has significantly increased storm runoff, both from within the City and from incoming overland flows from the City of Glendale, located immediately east of Peoria. Storm runoff has increased to the point where a comprehensive plan has become essential. A portion of the City's Capital Improvements Program has been budgeted over the next several years to construct facilties recommended by such a plan, mainly to relieve flooding problems in the area bounded by Peoria, 75th, Olive, and 67th Avenues. Additionally, the construction of a storm drain along Cactus Road is also planned, provided installation of this line is consistent with the results of the master plan.

OBJECTIVE

The purpose of this report is to present the parameters and methodology used in the hydrologic analysis and the resulting discharges and flow volumes which will be used to evaluate the existing and ultimate drainage systems in the Storm Water Master Plan.

METHODOLOGY AND RESULTS

In performing this analysis, the land lying within the City boundaries was separated into three sections. The basis for the division was set as the existing and expected ultimate development in the City. As such, the three sections are bounded approximately by the city limits and designated streets and are heretofore referred to as follows: the area North of Pinnacle Peak Road, the area from Pinnacle Peak Road to Bell Road, and the area from Bell Road to Northern Avenue. The first of these sections was modeled using the U.S. Army Corps of Engineers' (COE) HEC-1 Flood Hydrograph computer model (Reference 1), while the remaining two were modeled using the U.S. Environmental Protection Agency's Storm Water Management Model (SWMM) (References 2 & 3).

Area North of Pinnacle Peak Road

For the area north of Pinnacle Peak Road, the rainfall distributions were determined using the cumulative precipitation distribution developed by the COE, Los Angeles District for the Gila River Basin, New River and Phoenix City Streams, Arizona (Reference 4), rainfall depths for the National Oceanic and Atmospheric Administration's (NOAA) isohyetal mapping (Reference 5), and depth-area reductions presented in NOAA's Hydro 40 (Reference 6). The area was divided into 28 subbasins whose areas were planimetered from U.S. Geological Survey (USGS) Topographic Quadrangles. For each subbasin, the methodology developed by the COE for their Arizona studies was used to develop unit hydrographs. Subbasin lag time, defined as the time required for 50 percent of the total volume (ultimate discharge) of the unit hydrograph to occur, was calculated from measurable topographic parameters. The subbasin lag time was then related to an S-graph in order to obtain the unit hydrograph. Because the COE HEC-1 computer model does not calculate unit hydrographs from the subbasin lag time and S-graph, the unit hydrographs were computed manually for

each subbasin. It was assumed that the COE Phoenix Valley S-graph is applicable to the study area. The Valley S-graph was chosen over the Mountain S-graph even though some subbasins might be referred to as the foothills.

For each subbasin, the lag time was computer using the formula:

$$Lag = 24n(LL_{ca}/\sqrt{s})^{0.38}$$

where, L = the length of the longest watercourse (in miles)

L_{ca} = the upstream length along the longest watercourse to a point opposite the subbasin centroid (in miles)

s = the overall slope of the longest watercourse, headwater concentration point (in ft/mile)

n = Manning's "n" roughness factor for the subbasin (assumed to be 0.035)

Based upon the computed lag values, the 28 subbasins were placed into groups in order to develop the unit hydrographs. Using the subbasin lag time and the Phoenix Valley S-graph, the percent of ultimate runoff was determined at 10-minute time increments for each of the lag groupings. By assuming a 1-inch depth over the average subbasin area a unit hydrograph was developed for each grouping. The subbasins, concentration points, and longest watercourse are shown on Sheet 1.

Along with the percent impervious values determined through field survey of each of the 28 subbasins and exponential loss rate function variables developed by the COE for Phoenix and vicinity, the unit hydrographs were used as input to the COE HEC-1 computer model. Channel routing was accomplished using the Tatum method. The model was run again assuming percent impervious values for the ultimate development condition extracted from the City's 1982 General Land Use Plan (Reference 7). Table 1 presents subbasin parameters used to determine lag and the existing and ultimate percent impervious values.

The peak flows resulting from the HEC-1 analyses are shown in Table 2 for the 10-, 25- and 100-year events for both the existing and ultimate development conditions. A sample HEC-1 output for the area north of Pinnacle Peak Road is included in the Appendix.

TABLE 1 - SUBBASIN PARAMETERS FOR THE AREA NORTH OF PINNACLE PEAK ROAD

SUB BASIN	AREA (SQ.MI)	L (MILES)	Lca (MILES)	s (FT/MI)	LAG (HOURS)	% IMPERVIOUS (EXISTING)	% IMPERVIOUS (ULTIMATE)
10	2.20	2.9	1.3	93	0.59	0	12
11	1.30	2.4	1.3	94	0.55	0	13
12	0.35	0.8	0.5	100	0.25	0	0
13	1.08	2.1	1.2	90	0.51	0	8
14	0.80	2.1	1.1	338	0.38	0	0
15	1.75	2.3	1.4	78	0.57	0	20
16	0.46	1.5	0.8	200	0.33	0	0
17	1.25	1.6	0.1	180	0.14	1	30
18	0.59	1.2	0.1	319	0.10	5	30
19	1.15	1.6	0.1	244	0.12	1	27
20	1.93	4.2	1.9	60	0.85	0	13
21	1.08	1.7	0.6	50	0.40	0	13
22	1.38	3.1	1.5	52	0.71	0	13
23	1.07	1.3	0.5	54	0.33	0	13
24	0.67	0.9	0.3	311	0.17	0	3
30	4.75	5.3	2.5	49	1.07	0	13
31	1.04	1.4	0.8	57	0.41	0	3
32	0.46	1.3	0.8	246	0.30	0	0
33	2.75	3.1	1.5	90	0.64	0	6
34	1.01	2.1	1.1	162	0.44	0	13
35	0.93	1.8	0.9	278	0.35	0	3
40	0.47	1.1	0.6	336	0.23	0	3
41	0.70	1.2	0.6	238	0.26	0	19
42	1.30	2.1	0.9	124	0.43	0	3
43	2.11	2.1	1.0	77	0.48	0.5	34
44	2.66	3.2	1.7	113	0.65	0	13
45	1.52	3.3	1.7	170	0.61	0.5	23
46	2.68	3.1	1.8	31	0.84	0.5	30

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TABLE 2 - PEAK FLOWS FOR THE AREA NORTH OF PINNACLE PEAK ROAD

SUB BASIN	PEAK FLOWS (CFS)					
	10-YEAR		25-YEAR		100-YEAR	
	EXISTING	ULTIMATE	EXISTING	ULTIMATE	EXISTING	ULTIMATE
10	1259	1340	1660	1739	2253	2328
11	744	792	981	1027	1331	1375
12	247	247	322	322	432	432
13	618	642	815	839	1106	1129
14	518	518	678	678	914	914
15	1001	1101	1321	1417	1792	1884
16	325	325	423	423	568	568
17	1010	1114	1299	1399	1726	1820
18	484	526	620	660	821	859
19	930	1016	1196	1278	1588	1666
20	510	552	686	726	946	984
21	699	740	915	954	1233	1270
22	612	661	822	871	1134	1180
23	756	797	984	1023	1321	1358
24	473	479	616	622	827	832
30	2660	2840	3566	3741	4905	5073
31	673	682	881	889	1187	1195
32	2761	2941	3715	3890	5125	5293
33	1581	1629	2089	2135	2838	2882
34	2058	2143	2729	2811	3720	3798
35	602	610	788	796	1062	1069
40	379	383	487	491	648	651
41	564	602	726	762	965	1000
42	1165	1181	1525	1540	2055	2069
43	1947	2164	2575	2784	3507	3706
44	1178	1274	1584	1677	2184	2274
45	1327	1507	1834	2012	2598	2770
46	1191	1410	1600	1813	2205	2409

Areas from Pinnacle Peak Road to Bell Road and Bell Road to Northern Avenue

The procedure followed in preparing these drainage areas for modeling with SWMM basically consists of three steps. First, the areas were divided into a number of subbasins, each of which has a designated runoff concentration point. Next, the necessary SWMM parameters were determined. Finally, the concentration points are linked by a system of gutters which route runoff to discharge locations. The following paragraphs briefly describe these steps.

The subbasins were delineated on aerial mapping of the area using USGS contours and known directions of flow as a guideline. In addition, the ultimate development of the area, as shown on the 1982 General Land Use Plan (Reference 7), was considered in order to keep the subbasins consistent for both the existing and ultimate modeling phases. Concentration points were identified for each subbasin along with a direction of flow from each point into neighboring subbasins. The subbasins, concentration points and directions of flow for the area from Pinnacle Peak Road to Bell Road are shown on Sheet 2, while those for the area from Bell Road to Northern Avenue are shown on Sheet 3.

Subbasin parameters which were then estimated include: area, width, slope, percent impervious, Manning's "n", depression storage, and infiltration rates. While these are for the most part self-explanatory, a description of each can be found in the SWMM User's Manual (Reference 3). The parameter values were extracted using various sources of available information, including aerial mapping, USGS contours, soil maps and the General Land Use Plan. A listing of the parameter values used for existing and ultimate conditions in the area from Pinnacle Peak Road to Bell Road can be found in Tables 3 and 4. Similar information for the area from Bell Road to Northern Avenue is listed in Tables 5 and 6.

Areas were obtained by planimetering the subbasins on the aerial maps. Widths and slopes were measured directly using the maps and contours. Percent impervious, pervious Manning's "n", and maximum infiltration rates were determined using area averaged values based on land use. percent impervious values for individual land uses were selected using Soil Conservation Service guidelines (Reference 8) in conjunction with observable land use and expected

TABLE 3 - SUBBASIN PARAMETERS FOR THE AREA FROM PINNACLE PEAK ROAD TO BELL ROAD
EXISTING CONDITIONS

SUB BASIN	AREA (ACRES)	WIDTH (FT)	PERCENT IMPERV.	SLOPE (FT/FT)	MANNING'S 'N' IMPERV.	MANNING'S 'N' PERV.	DEPRESSION STORAGE IMPERV. (IN)	DEPRESSION STORAGE PERV. (IN)	INFILTRATION RATES MAX. (IN/HR)	INFILTRATION RATES MIN. (IN/HR)	INFILTRATION RATES DECAY (1/SEC)
1	532.3	4200	0	0.0069	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
2	232.1	2300	0	0.0067	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
3	646.6	5280	0	0.0065	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
4	320.3	10560	18	0.0065	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
5	322.4	10560	9	0.0053	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
6	403.8	3100	0	0.0049	0.015	0.30	0.03	0.10	5.0	0.10	0.00115
7	245.1	2000	0	0.0067	0.015	0.30	0.03	0.10	5.0	0.10	0.00115
8	638.6	4600	0	0.0042	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
9	592.9	5000	0	0.0050	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
10	329.5	2700	0	0.0060	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
11	617.0	5280	0	0.0054	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
12	447.9	4000	0	0.0060	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
13	160.0	2950	0	0.0068	0.015	0.35	0.03	0.10	7.0	0.20	0.00115
14	160.0	7200	51	0.0068	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
15	640.0	10480	11	0.0054	0.015	0.31	0.03	0.10	6.5	0.20	0.00115
16	532.1	4800	0	0.0047	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
17	215.3	1600	0	0.0054	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
18	324.2	3050	0	0.0047	0.015	0.35	0.03	0.10	7.0	0.20	0.00115
19	321.0	2900	5	0.0041	0.015	0.33	0.03	0.10	6.5	0.10	0.00115
20	130.8	1200	0	0.0042	0.015	0.35	0.03	0.10	7.0	0.35	0.00115
21	283.6	2500	0	0.0052	0.015	0.35	0.03	0.10	7.0	0.20	0.00115
22	210.1	2300	0	0.0051	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
23	450.0	4800	0	0.0053	0.015	0.35	0.03	0.10	7.0	0.35	0.00115
24	150.2	2700	0	0.0114	0.015	0.35	0.03	0.10	6.0	0.35	0.00115

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TABLE 4 - SUBBASIN PARAMETERS FOR THE AREA FROM PINNACLE PEAK ROAD TO BELL ROAD
ULTIMATE CONDITIONS

SUB BASIN	AREA (ACRES)	WIDTH (FT)	PERCENT IMPERV.	SLOPE (FT/FT)	MANNING'S 'N' IMPERV.	MANNING'S 'N' PERV.	DEPRESSION STORAGE IMPERV. (IN)	DEPRESSION STORAGE PERV. (IN)	INFILTRATION RATES MAX. (IN/HR)	INFILTRATION RATES MIN. (IN/HR)	INFILTRATION RATES DECAY (1/SEC)
1	532.3	15800	51	0.0069	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
2	232.1	13200	59	0.0067	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
3	646.6	5280	0	0.0065	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
4	320.3	11800	22	0.0065	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
5	322.4	11800	24	0.0053	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
6	403.8	10700	41	0.0049	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
7	245.1	11450	59	0.0067	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
8	638.6	13100	53	0.0042	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
9	592.9	15260	39	0.0050	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
10	329.5	11920	54	0.0060	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
11	617.0	14500	55	0.0054	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
12	447.9	11500	49	0.0060	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
13	160.0	7600	61	0.0065	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
14	160.0	7200	51	0.0068	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
15	640.0	19200	41	0.0054	0.015	0.20	0.03	0.10	5.0	0.20	0.00115
16	532.1	12800	54	0.0042	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
17	215.3	10560	53	0.0047	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
18	324.2	11000	76	0.0047	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
19	321.0	10560	61	0.0041	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
20	130.8	10560	62	0.0042	0.015	0.20	0.03	0.10	4.5	0.35	0.00115
21	283.6	12200	61	0.0052	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
22	201.1	10600	66	0.0051	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
23	450.0	16800	66	0.0045	0.015	0.21	0.03	0.10	4.5	0.35	0.00115
24	150.2	5400	66	0.0083	0.015	0.20	0.03	0.10	4.5	0.35	0.00115

TABLE 5 - SUBBASIN PARAMETERS FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE
EXISTING CONDITIONS

SUB BASIN	AREA (ACRES)	WIDTH (FT)	PERCENT IMPERV.	SLOPE (FT/FT)	MANNING'S 'N' IMPERV.	MANNING'S 'N' PERV.	DEPRESSION STORAGE IMPERV. (IN)	DEPRESSION STORAGE PERV. (IN)	INFILTRATION RATES MAX. (IN/HR)	INFILTRATION RATES MIN. (IN/HR)	INFILTRATION RATES DECAY (1/SEC)
1	160.0	7800	46	0.0028	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
2	160.0	7900	45	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
3	160.0	7800	26	0.0029	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
4	110.0	5800	14	0.0035	0.015	0.25	0.03	0.10	6.0	0.10	0.00115
5	80.0	1250	0	0.0036	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
6	78.8	4400	25	0.0022	0.015	0.20	0.03	0.10	5.0	0.10	0.00115
7	25.0	2400	95	0.0035	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
8	35.4	1700	30	0.0043	0.015	0.30	0.03	0.10	5.0	0.10	0.00115
9	22.4	1300	50	0.0042	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
10	72.0	2700	53	0.0034	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
11	48.7	1200	18	0.0047	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
12	48.7	2600	54	0.0035	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
13	60.5	3200	38	0.0030	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
14	53.0	4600	28	0.0042	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
15	57.0	900	30	0.0031	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
17	50.0	3600	20	0.0033	0.015	0.30	0.03	0.10	7.0	0.10	0.00115
21	37.2	3520	55	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
22	122.3	6720	38	0.0033	0.015	0.27	0.03	0.10	5.0	0.10	0.00115
23	173.8	7600	48	0.0033	0.015	0.21	0.03	0.10	4.5	0.10	0.00115
24	161.5	9780	38	0.0050	0.015	0.25	0.03	0.10	5.0	0.10	0.00115
25	69.9	6580	38	0.0045	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
26	105.0	7640	38	0.0050	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
27	156.6	9120	53	0.0048	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
28	53.3	5000	53	0.0045	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
29	98.9	6070	35	0.0050	0.015	0.25	0.03	0.10	5.0	0.10	0.00115
30	127.0	4920	4	0.0048	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
34	90.5	2500	1	0.0045	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
35	140.0	1800	0	0.0043	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
36	58.1	1600	72	0.0046	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
37	34.6	4400	58	0.0063	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
38	58.3	3760	16	0.0041	0.015	0.27	0.03	0.10	4.5	0.10	0.00115
39	71.2	4000	22	0.0044	0.015	0.26	0.03	0.10	4.5	0.10	0.00115
40	146.5	6580	43	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
41	84.2	5040	27	0.0032	0.015	0.28	0.03	0.10	5.5	0.10	0.00115
42	57.8	1600	0	0.0045	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
43	113.1	2200	0	0.0054	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
50	160.0	8400	35	0.0029	0.015	0.25	0.03	0.10	5.0	0.10	0.00115
51	160.0	7670	19	0.0036	0.015	0.28	0.03	0.10	5.0	0.10	0.00115
52	160.0	3550	0	0.0049	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
53	160.0	7560	45	0.0033	0.015	0.23	0.03	0.10	5.0	0.10	0.00115
54	160.0	7480	29	0.0038	0.015	0.27	0.03	0.10	5.5	0.10	0.00115
55	160.0	7690	18	0.0044	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
56	160.0	9200	28	0.0031	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
57	124.6	6880	14	0.0041	0.015	0.26	0.03	0.10	4.5	0.10	0.00115
58	33.7	1450	0	0.0041	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
59	151.4	3250	0	0.0039	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
60	59.6	1720	8	0.0046	0.015	0.29	0.03	0.10	4.0	0.10	0.00115
61	91.7	5740	14	0.0041	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
62	160.0	8060	11	0.0031	0.015	0.20	0.03	0.10	7.0	0.10	0.00115

9922.1

TABLE 5 - SUBBASIN PARAMETERS FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE
EXISTING CONDITIONS

SUB BASIN	AREA (ACRES)	WIDTH (FT)	PERCENT IMPERV.	SLOPE (FT/FT)	MANNING'S 'N' IMPERV.	MANNING'S 'N' PERV.	DEPRESSION STORAGE IMPERV. (IN)	DEPRESSION STORAGE PERV. (IN)	INFILTRATION RATES MAX. (IN/HR)	INFILTRATION RATES MIN. (IN/HR)	INFILTRATION RATES DECAY (1/SEC)
63	212.2	8040	5	0.0043	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
64	160.0	3220	4	0.0051	0.015	0.30	0.03	0.10	6.5	0.10	0.00115
65	189.9	13380	3	0.0041	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
66	320.0	3500	0	0.0047	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
67	141.5	2670	0	0.0046	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
68	33.8	1250	10	0.0072	0.015	0.29	0.03	0.10	6.0	0.10	0.00115
70	160.0	8100	32	0.0037	0.015	0.26	0.03	0.10	5.0	0.10	0.00115
71	240.5	3920	1	0.0040	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
72	28.1	1720	0	0.0060	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
73	111.6	1860	8	0.0058	0.015	0.25	0.03	0.10	5.0	0.10	0.00115
74	19.8	1600	0	0.0047	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
75	137.9	1740	0	0.0069	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
76	44.8	1080	0	0.0083	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
77	62.4	1600	3	0.0042	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
78	71.1	1500	0	0.0042	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
80	88.5	2000	48	0.0033	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
81	252.7	6410	1	0.0044	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
82	157.4	10460	25	0.0050	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
83	151.3	7560	53	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
84	160.0	3475	0	0.0034	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
85	160.0	10240	31	0.0031	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
86	328.4	8230	4	0.0034	0.015	0.35	0.03	0.10	6.5	0.10	0.00115
87	122.3	6740	12	0.0038	0.015	0.30	0.03	0.10	6.5	0.10	0.00115
88	83.1	2000	17	0.0029	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
89	254.7	7000	17	0.0037	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
91	49.5	5600	55	0.0034	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
92	80.0	5660	18	0.0045	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
93	110.5	4500	9	0.0039	0.015	0.35	0.03	0.10	6.5	0.10	0.00115
94	160.0	2800	0	0.0044	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
95	160.0	3100	0	0.0034	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
96	80.0	9230	36	0.0038	0.015	0.25	0.03	0.10	6.0	0.10	0.00115
97	160.0	9000	3	0.0037	0.015	0.30	0.03	0.10	6.0	0.10	0.00115
98	160.0	3650	0	0.0042	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
99	122.1	2400	0	0.0040	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
100	160.0	3600	0	0.0044	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
201	210.4	2300	0	0.0040	0.015	0.35	0.03	0.10	7.0	0.20	0.00115
202	161.5	3880	47	0.0056	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
203	86.7	3150	7	0.0076	0.015	0.25	0.03	0.10	4.5	0.20	0.00115
204	73.6	7580	57	0.0087	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
205	60.9	3900	15	0.0063	0.015	0.30	0.03	0.10	6.0	0.20	0.00115
206	30.3	1800	0	0.0063	0.015	0.35	0.03	0.10	4.0	0.20	0.00115
207	48.8	3860	21	0.0038	0.015	0.25	0.03	0.10	4.0	0.20	0.00115
208	45.0	1150	0	0.0080	0.015	0.35	0.03	0.10	7.0	0.20	0.00115
209	54.2	1800	0	0.0043	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
210	68.7	5940	53	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
391	160.0	7200	32	0.0049	0.015	0.28	0.03	0.10	6.0	0.10	0.00115
392	160.0	3850	0	0.0040	0.015	0.35	0.03	0.10	7.0	0.10	0.00115
393	160.0	3500	6	0.0042	0.015	0.34	0.03	0.10	7.0	0.10	0.00115
394	160.0	3700	15	0.0045	0.015	0.31	0.03	0.10	6.5	0.10	0.00115

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TABLE 6 - SUBBASIN PARAMETERS FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE
ULTIMATE CONDITIONS

SUB BASIN	AREA (ACRES)	WIDTH (FT)	PERCENT IMPERV.	SLOPE (FT/FT)	MANNING'S "N" IMPERV.	MANNING'S "N" PERV.	DEPRESSION STORAGE IMPERV. (IN)	DEPRESSION STORAGE PERV. (IN)	INFILTRATION RATES MAX. (IN/HR)	INFILTRATION RATES MIN. (IN/HR)	INFILTRATION RATES DECAY (1/SEC)
1	160.0	7800	56	0.0028	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
2	160.0	7900	55	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
3	160.0	6400	56	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
4	110.0	6600	58	0.0035	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
5	80.0	4200	60	0.0026	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
6	78.8	4400	25	0.0023	0.015	0.20	0.03	0.10	5.0	0.10	0.00115
7	25.0	2400	95	0.0035	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
8	35.4	1700	83	0.0032	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
9	22.4	1300	50	0.0042	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
10	72.0	2700	65	0.0034	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
11	48.7	4000	66	0.0035	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
12	48.7	2600	54	0.0035	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
13	60.5	3200	62	0.0028	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
14	53.0	5400	66	0.0034	0.015	0.25	0.03	0.10	4.5	0.10	0.00115
15	57.0	4600	70	0.0028	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
17	50.0	4250	40	0.0036	0.015	0.22	0.03	0.10	4.5	0.10	0.00115
21	37.2	3520	55	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
22	122.3	8400	70	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
23	173.8	9200	55	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
24	161.5	8200	57	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
25	69.9	5200	57	0.0035	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
26	105.0	6500	50	0.0033	0.015	0.22	0.03	0.10	4.5	0.10	0.00115
27	156.6	7960	60	0.0034	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
28	53.3	4600	53	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
29	98.9	5400	65	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
30	127.0	7250	69	0.0031	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
34	90.5	5900	75	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
35	140.0	9100	69	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
36	58.1	4600	72	0.0033	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
37	34.6	4400	58	0.0049	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
38	58.3	4400	44	0.0031	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
39	71.2	7100	57	0.0033	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
40	146.5	8800	56	0.0024	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
41	84.2	6200	65	0.0024	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
42	57.8	4800	72	0.0035	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
43	113.1	7000	74	0.0037	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
50	160.0	8600	53	0.0029	0.015	0.20	0.03	0.10	4.6	0.10	0.00115
51	160.0	9200	43	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
52	160.0	9400	56	0.0031	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
53	160.0	8000	57	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
54	160.0	9000	46	0.0037	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
55	160.0	9000	46	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
56	160.0	9000	57	0.0027	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
57	124.6	9200	51	0.0031	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
58	33.7	3600	39	0.0030	0.015	0.21	0.03	0.10	4.5	0.10	0.00115
59	151.4	8800	66	0.0024	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
60	59.6	5600	35	0.0038	0.015	0.24	0.03	0.10	5.0	0.10	0.00115
61	91.7	5740	14	0.0041	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
62	160.0	8060	23	0.0031	0.015	0.20	0.03	0.10	4.5	0.10	0.00115

TABLE 6 - SUBBASIN PARAMETERS FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE
ULTIMATE CONDITIONS

SUB BASIN	AREA (ACRES)	WIDTH (FT)	PERCENT IMPERV.	SLOPE (FT/FT)	MANNING'S 'N' IMPERV.	MANNING'S 'N' PERV.	DEPRESSION STORAGE IMPERV. (IN)	DEPRESSION STORAGE PERV. (IN)	INFILTRATION RATES MAX. (IN/HR)	INFILTRATION RATES MIN. (IN/HR)	INFILTRATION RATES DECAY (1/SEC)
63	212.2	8800	19	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
64	160.0	7200	23	0.0037	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
65	189.9	13800	25	0.0036	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
66	320.0	14620	21	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
67	141.5	7900	55	0.0036	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
68	33.8	1250	28	0.0072	0.015	0.28	0.03	0.10	5.5	0.10	0.00115
70	160.0	9000	66	0.0030	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
71	240.5	11400	66	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
72	28.1	2880	28	0.0060	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
73	111.6	1860	15	0.0058	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
74	19.8	2000	19	0.0032	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
75	137.9	8000	27	0.0069	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
76	44.8	6400	44	0.0083	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
77	62.4	3000	75	0.0032	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
78	71.1	4000	76	0.0032	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
80	88.5	3800	87	0.0025	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
81	252.7	9400	83	0.0030	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
82	157.4	8800	60	0.0037	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
83	151.3	8200	58	0.0026	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
84	160.0	8500	55	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
85	160.0	7800	55	0.0023	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
86	328.4	13600	33	0.0025	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
87	122.3	7300	60	0.0031	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
88	83.1	4200	76	0.0028	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
89	254.7	9600	76	0.0025	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
91	49.5	5600	55	0.0034	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
92	80.0	5600	46	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
93	110.5	7900	60	0.0029	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
94	160.0	7800	32	0.0026	0.015	0.33	0.03	0.10	5.0	0.10	0.00115
95	160.0	7900	51	0.0025	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
96	80.0	7600	31	0.0024	0.015	0.33	0.03	0.10	5.0	0.10	0.00115
97	160.0	7900	29	0.0028	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
98	160.0	8200	33	0.0028	0.015	0.23	0.03	0.10	4.5	0.10	0.00115
99	122.1	8000	45	0.0028	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
100	160.0	7900	30	0.0031	0.015	0.22	0.03	0.10	5.0	0.10	0.00115
201	210.4	10300	46	0.0040	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
202	161.5	8880	56	0.0056	0.015	0.25	0.03	0.10	4.5	0.20	0.00115
203	86.7	9700	60	0.0076	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
204	73.6	7500	57	0.0087	0.015	0.20	0.03	0.10	4.5	0.20	0.00115
205	60.9	6200	71	0.0081	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
206	20.3	1900	67	0.0063	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
207	48.8	4200	52	0.0038	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
208	45.0	5600	64	0.0058	0.015	0.20	0.03	0.10	4.0	0.20	0.00115
209	54.2	5800	69	0.0030	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
210	68.7	5940	53	0.0033	0.015	0.20	0.03	0.10	4.5	0.10	0.00115
391	160.0	8700	76	0.0029	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
392	160.0	7600	76	0.0026	0.015	0.20	0.03	0.10	4.0	0.10	0.00115
393	160.0	8200	60	0.0034	0.015	0.22	0.03	0.10	4.5	0.10	0.00115
394	160.0	7600	60	0.0030	0.015	0.22	0.03	0.10	4.5	0.10	0.00115

ultimate land use. The averaged value was then adjusted to obtain a directly connected percent impervious value for the subbasin. Vegetative cover was the basis for selecting values of pervious Manning's "n" and maximum infiltration rates. Minimum infiltration rates were estimated by soil type. Parameters assumed constant over the entire area were impervious Manning's "n", depression storage, and infiltration decay rate. These were each set at an appropriate value.

The routing of runoff was accomplished by connecting the concentration points by a series of gutters. As such, a series of networks was set up for the Bell Road to Northern Avenue section. The Pinnacle Peak Road to Bell Road section was modeled as a single network. Modeling of these networks was handled using the RUNOFF Block of SWMM, a description of which can be found in the SWMM User's Manual (Reference 3).

Necessary parameters such as slope, width, and length were measured directly from the aerial maps. Side slopes for street gutters were estimated from the road width by assuming a half-foot crown. Since SWMM artificially stores any runoff which will exceed the capacity of the conveyance structure, the full depth of each gutter was set as high as was needed in order to assure full conveyance of runoff without storage. While this is unrealistic in terms of the ensuing sizes of the structures, it does constitute a worse case scenario for runoff at downstream concentration points resulting from a storm.

Additionally, in order to avoid surcharge storage in the existing Peoria Avenue storm drain, the storm drain was not used in the modeling process. Instead, runoff was routed using street gutters as described above. This is considered appropriate as the total volume and flow rates observed in the subbasins are of interest for this report and limitations of the RUNOFF block preclude the modeling of simultaneous pipe and gutter flow from a single concentration point.

The resulting networks of subbasins were each modeled for existing and ultimate development conditions using 10-, 25-, and 100-year return period storms. These storms are synthetically derived using nested distributions from rainfall intensity-duration-frequency curves for the City of Phoenix, Arizona (Reference 9). The resulting 2-hour rainfall events are conservative representations of actual 2-hour

storms occurring in the area. Table 7 contains the values of the 10-, 25-, and 100-year return period storms used in the SWMM modeling.

The results from the program executions contain hydrographs and volumes observed in the gutters of the networks. Sample program output for the area from Pinnacle Peak Road to Bell Road and for one network in the area from Bell Road to Northern Avenue are included in the Appendix. The results have been tabulated for peak flow rates and total volumes observed at the gutters draining each concentration point. These values are cumulative of the subbasin drainage and all gutters connecting at the indicated concentration point. Tables 8 and 9 list the peak flows and volumes, respectively, observed in the area from Pinnacle Peak Road to Bell Road for both existing and ultimate conditions. Similarly, Tables 10 and 11 contain the peak flows and volumes for the area from Bell Road to Northern Avenue.

DISCUSSION

In general, the peak flows and volumes increase with both increasing storm return period and expected ultimate development. This is illustrated in Tables 2, 8, 9, 10, and 11. Subbasins showing no runoff volume are areas in which precipitation rates are exceeded by infiltration rates and depression storage. Conversely, subbasins exhibiting runoff volume are ones in which precipitation rates exceed infiltration rates and depression storage. The latter subbasins are the areas which are of concern, particularly when the peak flows and volumes become much larger than can be conveyed by existing artificial and natural drainage channels.

Currently, the Peoria Avenue Storm Drain is the only drainage facility in the city. The routing of runoff through this drain will decrease the values of the estimated street flows along its path for both existing and ultimate conditions. However, the implementation of additional storm water drainage facilities consisting of pipes, open channels, and possibly detention basins is necessary to reduce the ultimate street flow values in other areas as needed. The results contained within this report further identify problem drainage areas and will be of use in determining adequate drainage facilities in the subsequent Storm Water Master Plan study for the City of Peoria.

TABLE 7 - RAINFALL INTENSITIES FOR SWMM MODELING

TIME INCREMENTS (MINUTES)	RAINFALL INTENSITIES (INCHES PER HOUR)		
	10-YEAR	25-YEAR	100-YEAR
5	0.14	0.14	0.13
10	0.14	0.26	0.34
15	0.26	0.26	0.35
20	0.26	0.29	0.35
25	0.26	0.31	0.36
30	0.44	0.37	0.53
35	0.44	0.38	0.54
40	0.50	0.76	1.00
45	0.80	0.90	1.35
50	1.31	1.55	1.96
55	2.05	2.60	3.40
60	4.40	5.30	6.[illegible]
65	3.30	3.60	4.80
70	1.44	1.80	2.[illegible]
75	0.77	1.15	1.34
80	0.72	0.80	1.46
85	0.36	0.44	0.80
90	0.26	0.37	0.70
95	0.26	0.37	0.53
100	0.26	0.30	0.36
105	0.26	0.26	0.35
110	0.25	0.26	0.34
120	0.13	0.36	0.33
125	0.13	0.13	0.13

TABLE 8 - PEAK FLOWS FOR THE AREA FROM PINNACLE PEAK ROAD TO BELL ROAD

SUB BASIN	GUTTER	PEAK FLOWS (CFS) 10-YEAR EXISTING	10-YEAR ULTIMATE	25-YEAR EXISTING	25-YEAR ULTIMATE	100-YEAR EXISTING	100-YEAR ULTIMATE
1	101	4.5	846.8	13.4	1004.7	38.9	1373.6
2	102	2.4	467.3	7.1	573.6	20.6	743.3
3	103	5.5	5.5	16.4	16.4	47.5	47.5
4	104	0.0	0.0	0.0	0.0	0.0	0.0
5	105	0.0	0.0	0.0	0.0	0.0	0.0
6	106	1.3	503.4	5.0	596.9	17.4	817.3
7	107	1.0	482.3	3.7	567.9	13.0	773.4
8	108	7.4	1301.0	26.0	1620.0	84.9	2202.3
9	109	6.0	948.0	19.0	1145.4	56.6	1565.8
10	110	0.0	*	0.0	*	0.0	*
11	111	0.0	0.0	0.0	0.0	0.0	0.0
12	112	0.0	893.8	0.4	1092.0	8.3	1520.1
13	113	0.0	320.0	0.3	375.5	4.5	510.6
14	114	0.0	0.0	0.0	0.0	0.0	0.0
15	#						
16	116	0.0	0.0	0.0	0.0	0.0	0.0
17	117	0.0	0.0	0.0	0.0	0.0	0.0
18	118	0.0	0.0	0.0	0.0	0.0	0.0
19	119	0.0	0.0	0.0	0.0	0.0	0.0
20	120	0.0	0.0	0.0	0.0	0.0	0.0
21	121	0.0	0.0	0.0	0.0	0.0	0.0
22	122	0.0	0.0	0.0	0.0	0.0	0.0
23	123	0.0	0.0	0.0	0.0	0.0	0.0
24	124	0.0	0.0	0.0	0.0	0.0	0.0

* SUBBASIN 10 DRAINS TO GUTTER 111 UNDER ULTIMATE CONDITIONS
\# SUBBASIN 15 DRAINS TO GUTTER 116 UNDER BOTH CONDITIONS

TABLE 9 - FLOW VOLUMES FOR THE AREA FROM PINNACLE PEAK ROAD TO BELL ROAD

SUB BASIN	GUTTER	FLOW VOLUMES (CUBIC FEET)					
		10-YEAR		25-YEAR		100-YEAR	
		EXISTING	ULTIMATE	EXISTING	ULTIMATE	EXISTING	ULTIMATE
1	101	30076	1690974	120165	2196594	398848	3206412
2	102	15980	830652	63051	1064934	206410	1524870
3	103	36686	36686	146542	146542	486269	486269
4	104	0	0	0	0	0	0
5	105	0	0	0	0	0	0
6	106	6057	995578	41625	1317312	180751	2012310
7	107	4541	901443	30860	1151910	132473	1637172
8	108	68057	4200120	279192	5516622	983386	8374824
9	109	47328	2256462	196015	3050298	696451	4825404
10	110	0	*	0	*	0	*
11	111	0	0	0	0	0	0
12	112	175	2291904	3421	3994300	95427	4435816
13	113	0	527150	208	721567	25860	1026270
14	114	0	0	0	0	0	0
15	#						
16	116	0	0	0	0	0	0
17	117	0	0	0	0	0	0
18	118	0	0	0	0	0	0
19	119	0	0	0	0	0	0
20	120	0	0	0	0	0	0
21	121	0	0	0	0	0	0
22	122	0	0	0	0	0	0
23	123	0	0	0	0	0	0
24	124	0	0	0	0	0	0

* SUBBASIN 10 DRAINS TO GUTTER 111 UNDER ULTIMATE CONDITIONS
\# SUBBASIN 15 DRAINS TO GUTTER 116 UNDER BOTH CONDITIONS

TABLE 10 - PEAK FLOWS FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE

SUB BASIN	GUTTER	PEAK FLOWS (CFS) 10-YEAR EXISTING	10-YEAR ULTIMATE	25-YEAR EXISTING	25-YEAR ULTIMATE	100-YEAR EXISTING	100-YEAR ULTIMATE
1	101	236.2	273.8	277.9	324.3	379.9	443.3
2	102	379.0	439.5	460.0	536.2	636.8	743.6
3	103	404.9	576.0	502.7	712.6	709.5	994.5
4	104	376.1	619.6	479.4	784.2	687.8	1111.3
5	105	362.5	681.6	463.0	866.8	667.6	1222.3
6	106	71.8	72.3	89.5	90.1	114.9	115.6
7	107	516.7	968.3	667.4	1231.7	972.8	1755.3
8	108	38.7	80.8	48.1	97.0	61.1	133.0
9	109	533.7	1025.2	687.0	1299.6	1001.5	1838.9
10	110	565.7	1079.3	729.7	1372.7	1067.7	1942.0
11	111	30.8	108.5	38.1	131.2	48.1	172.4
12	112	109.5	180.0	129.9	217.2	176.4	294.9
13	113	621.7	1182.5	801.5	1515.5	1175.2	2167.1
14	114	612.1	1166.5	794.5	1501.8	1180.6	2158.6
15	115	612.4	1169.4	795.1	1506.3	1181.9	2163.8
17	117	43.4	77.6	52.6	96.5	64.9	123.5
21	121	73.5	73.5	92.0	92.0	118.5	118.5
22	122	160.6	318.7	198.0	378.4	225.1	517.2
23	123	350.9	481.6	421.6	586.0	579.9	814.1
24	124	228.6	288.0	283.8	340.0	361.7	464.4
25	125	363.8	529.4	450.5	653.5	633.9	914.2
26	126	643.3	880.2	793.7	1082.4	1107.9	1509.3
27	127	281.8	292.4	342.8	345.4	449.7	471.7
28	128	670.9	889.4	835.0	1113.3	1183.1	1571.6
29	129	939.1	1410.5	1170.3	1768.2	1660.0	2496.8
30	130	26.9	269.6	31.7	320.0	38.3	436.6
34	134	5.3	211.7	6.2	249.8	7.6	339.9
35	135	1.5	442.9	2.1	534.8	7.1	736.0
36	136	104.9	399.6	127.2	499.7	176.3	705.2
37	137	84.6	81.9	105.0	101.8	134.1	130.2
38	138	42.9	91.2	52.7	114.1	66.8	147.2
39	139	65.4	147.3	80.9	185.1	102.7	238.7
40	140	202.3	259.3	238.0	305.7	325.5	417.5
41	141	195.1	328.9	238.3	402.8	333.4	559.3
42	142	0.0	140.0	0.2	166.6	2.6	222.8
43	143	0.0	264.3	0.2	312.4	4.0	425.1
50	150	189.2	270.5	234.1	318.4	301.2	435.0
51	151	231.9	408.0	277.8	495.3	383.1	685.8
52	152	0.0	290.0	0.4	340.6	6.1	465.1
53	153	373.4	750.1	451.5	926.1	624.1	1293.2
54	154	165.9	249.1	206.2	301.6	262.2	398.2
55	155	462.4	968.2	573.9	1214.1	812.0	1726.5
56	156	438.1	978.8	560.3	1241.8	811.7	1778.8
57	157	424.9	981.1	552.1	1260.6	823.6	1828.7
58	158	0.0	53.3	0.1	66.2	2.1	84.7
59	159	401.4	1043.3	526.2	1352.5	799.0	1977.0
60	160	381.9	1014.3	503.4	1323.1	773.3	1957.6
61	161	60.5	60.5	74.8	74.8	96.5	96.5

TABLE 10 - PEAK FLOWS FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE

SUB BASIN	GUTTER	PEAK FLOWS (CFS)					
		10-YEAR		25-YEAR		100-YEAR	
		EXISTING	ULTIMATE	EXISTING	ULTIMATE	EXISTING	ULTIMATE
62	162	100.8	164.3	123.5	203.1	156.9	273.2
63	163	53.9	155.0	64.7	193.3	79.7	248.5
64	164	103.3	334.8	125.8	408.9	183.6	573.8
65	165	32.8	200.3	39.3	248.5	50.3	318.6
66	166	67.3	481.2	91.4	586.7	174.4	837.8
67	167	59.8	565.6	82.7	707.4	172.8	1019.4
68	168	59.9	579.9	83.7	723.3	178.1	1038.2
70	170	181.6	323.8	226.1	383.2	289.2	523.0
71	171	101.1	604.7	126.1	736.0	181.7	1022.6
72	172	0.0	0.0	0.0	0.0	0.0	0.0
73	173	0.0	0.0	0.0	0.0	0.0	0.0
74	174	0.0	0.0	0.0	0.0	0.0	0.0
75	175	0.0	0.0	0.0	0.0	0.0	0.0
76	176	0.0	0.0	0.0	0.0	0.0	0.0
77	177	10.3	133.6	12.0	159.9	14.6	219.0
78	178	0.2	167.1	0.3	200.3	3.1	275.1
80	180	107.5	188.3	129.7	228.5	178.7	315.9
81	181	70.5	598.3	89.9	735.6	133.7	1029.6
82	182	167.1	292.1	204.2	342.7	253.8	467.7
83	183	357.5	356.3	427.3	575.0	581.7	792.5
84	184	55.9	646.8	71.6	813.2	113.6	1157.7
85	185	368.2	1078.1	448.4	1369.9	628.3	1931.4
86	186	327.1	1145.9	416.1	1465.3	601.6	2083.9
87	187	318.5	1180.9	407.6	1526.7	604.7	2204.8
88	188	46.8	178.4	57.6	213.8	73.6	292.9
89	189	169.4	568.3	208.0	698.2	266.3	975.1
91	191	103.8	103.8	129.5	129.5	166.2	166.2
92	192	295.1	1316.0	373.9	1681.6	537.7	2394.0
93	193	46.0	218.7	55.5	257.5	67.9	394.4
94	194	245.4	1296.4	315.1	1664.6	471.5	2376.5
95	195	0.0	252.7	0.3	298.8	4.5	408.5
96	196	247.8	1406.5	321.7	1820.6	502.0	2634.7
97	197	26.9	161.7	32.2	202.7	40.5	262.0
98	198	234.5	1429.3	307.8	1866.5	507.6	2744.3
99	199	223.7	186.9	296.5	227.9	493.3	298.9
100	200	215.7	1468.5	284.6	1926.3	486.7	2868.0
201	301	0.0	304.5	0.2	385.0	2.8	520.9
202	302	262.0	303.3	328.0	367.4	423.8	477.6
203	303	99.7	485.5	136.2	578.6	215.3	788.1
204	304	205.3	944.5	257.0	1165.6	362.8	1602.5
205	305	44.6	169.1	53.7	211.5	66.0	270.6
206	306	212.3	975.1	263.3	1184.3	374.6	1630.6
207	307	224.5	1050.3	281.6	1286.2	413.5	1772.7
208	308	0.0	0.0	0.0	0.0	0.0	0.0
209	309	0.0	0.0	0.0	0.0	0.0	0.0
210	310	0.0	0.0	0.0	0.0	0.0	0.0
391	491	182.4	354.3	226.2	423.1	286.6	578.3
392	492	128.7	556.3	155.5	688.0	215.2	958.3
393	493	263.3	1277.5	328.1	1609.5	460.6	2264.7
394	494	191.2	691.8	231.6	861.9	315.5	1210.4

TABLE 11 - FLOW VOLUMES FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE

SUB BASIN	GUTTER	FLOW VOLUMES (CUBIC FEET) 10-YEAR EXISTING	10-YEAR ULTIMATE	25-YEAR EXISTING	25-YEAR ULTIMATE	100-YEAR EXISTING	100-YEAR ULTIMATE
1	101	446157	533149	587202	684111	882712	990493
2	102	883249	1056978	1164258	1358082	1752534	1969002
3	103	1130490	1583676	1508724	2032074	2340018	2943090
4	104	1216260	977210	1624770	2535804	2586816	3659778
5	105	1213938	2258208	1624086	2893284	2612880	4169736
6	106	119293	119443	170339	170830	297395	298513
7	107	1977534	3321774	2632212	4258728	4177260	6156900
8	108	63114	170812	86152	209012	142405	281075
9	109	2106090	3556818	2802852	4551822	4439952	6561720
10	110	2327526	3825198	3085344	4899268	4846968	7036002
11	111	49879	192627	59670	243160	93210	340855
12	112	208327	349832	264525	445637	391595	635849
13	113	2665206	4387860	3520260	5603652	5501232	8051958
14	114	2741850	4584636	3626262	5851314	5682384	8397414
15	115	2827134	4807890	3725010	6130188	5811678	8783100
17	117	57281	127799	68660	173945	120727	269129
21	121	126020	126020	163407	163407	237002	237002
22	122	349533	632023	469166	796679	739776	1115820
23	123	844893	1204110	1116702	1534410	1704024	2188386
24	124	366861	549455	496158	704473	787914	1016676
25	125	1015812	1444716	1353006	1844532	2071926	2635560
26	126	1639512	2312190	2202480	2964762	3410334	4267314
27	127	506843	558801	659005	712057	963964	1017648
28	128	1811592	2483820	2426940	3188628	3736260	4594230
29	129	2551104	3942954	3400722	5032458	5253660	7191198
30	130	29362	527866	35458	660620	105176	914993
34	134	5278	397713	6517	493273	40579	676176
35	135	5203	967754	6607	1308016	64745	1671156
36	136	249530	1217502	310679	1519524	479446	2099344
37	137	125622	125061	161968	161195	231720	230793
38	138	67526	160643	108403	214945	203807	326334
39	139	105562	259622	157665	333625	276573	475793
40	140	383023	491039	507908	631203	772998	914016
41	141	513290	815029	683157	1040454	1074024	1489410
42	142	0	252597	153	314427	20802	431556
43	143	0	501292	231	631880	33908	850717
50	150	330628	509920	443882	660044	711241	965935
51	151	504149	932077	669307	1222722	1132020	1823418
52	152	0	538784	355	693485	49860	1004094
53	153	923301	2012184	1215342	2609874	2003526	3826314
54	154	267014	453092	354328	599915	595635	902999
55	155	1352808	2911554	1781460	3799224	2995650	5613804
56	156	1635318	3447000	2181204	4484394	3645630	6598908
57	157	1756800	3826332	2380626	4979286	4030336	7326072
58	158	0	85336	131	117020	16344	181758
59	159	1748736	4485168	2367486	5816484	4040406	6516466
60	160	1779066	4593672	2420856	5967918	4138614	8765874
61	161	100337	100337	168720	168720	325817	325817
62	162	201026	345159	289266	530411	587179	952930

TABLE 11 - FLOW VOLUMES FOR THE AREA FROM BELL ROAD TO NORTHERN AVENUE

SUB BASIN	GUTTER	FLOW VOLUMES (CUBIC FEET) 10-YEAR EXISTING	10-YEAR ULTIMATE	25-YEAR EXISTING	25-YEAR ULTIMATE	100-YEAR EXISTING	100-YEAR ULTIMATE
63	163	61521	271674	94882	412842	288872	744342
64	164	298258	859731	428471	1298430	996018	2307150
65	165	33700	326767	71555	484601	296148	828715
66	166	325540	1627650	489140	2435994	1304280	4279626
67	167	321103	2090016	482116	3025440	1316520	5122872
68	168	338681	2141370	506518	3091104	1371510	5231142
70	170	304418	623157	414798	784871	679351	1101852
71	171	316528	1549584	428221	1950750	743348	2740050
72	172	0	0	0	0	0	0
73	173	0	0	0	0	0	0
74	174	0	0	0	0	0	0
75	175	0	0	0	0	0	0
76	176	0	0	0	0	0	0
77	177	10847	276588	13159	342586	46748	468319
78	178	2003	506527	2840	638756	33745	894202
80	180	245655	440496	313507	536350	457944	716844
81	181	258352	1644318	328550	2010978	558484	2703924
82	182	225700	538563	294397	687462	529269	982097
83	183	706023	1059786	915382	1354050	1435590	1940994
84	184	255062	2162934	324276	2681010	590280	3681018
85	185	1238220	3732228	1590103	4691790	2600154	6578748
86	186	1307430	4389102	1677618	5594544	2835828	8026038
87	187	1385640	4815414	1775700	6139633	3046968	8803890
88	188	80293	372252	100583	460345	171385	627984
89	189	326635	1495296	412732	1849662	722635	2527218
91	191	169071	169071	219490	219490	318006	318006
92	192	1054962	4434210	1335492	5559354	2265192	7748136
93	193	57113	398434	71302	508903	157902	726853
94	194	1062126	5106402	1347516	6446394	2326626	9105408
95	195	0	488716	259	634012	38134	934086
96	196	1178118	5736024	1504854	7281756	2644344	10378674
97	197	28213	296633	54885	419068	231682	691948
98	198	1195254	6336378	1546794	8123634	2872098	11753658
99	199	1183932	339360	1533708	450911	2866770	681740
100	200	1170594	6936174	1518480	8938926	2874942	13049892
201	301	0	592792	125	771810	16512	1147140
202	302	453954	531462	590066	674025	882469	972385
203	303	466023	857043	634398	1089018	1027080	1559430
204	304	718598	1966410	959629	3514798	1512594	3627522
205	305	52721	262494	68617	327050	138049	449673
206	306	751908	2087946	1017630	2667136	1660698	3839634
207	307	822224	2245428	1122048	2871144	1843056	4136454
208	308	0	0	0	0	0	0
209	309	0	0	0	0	0	0
210	310	0	0	0	0	0	0
391	491	291800	719051	367893	889172	602789	1212444
392	492	291388	1431252	367662	1770300	637280	2415600
393	493	806444	4047912	1008036	5049198	1739890	6989220
394	494	462145	2056878	576968	2564370	985482	3549924

REFERENCES

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3) U.S. Environmental Protection Agency, Storm Water Management Model User's Manual, Version III, May 1984

4) U.S. Army Corps of Engineers, Los Angeles District, Hydrology Report, Gila River Basin, New River, and Phoenix City Streams, Arizona

5) National Oceanic and Atmospheric Administration, NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, 1973

6) National Oceanic and Atmospheric Administration, Technical Memorandum NWS Hydro-40, "Depth-Area Ratios in the Semi-Arid Southwest United States", August 1984

7) City of Peoria Planning and Zoning Department, "General Land Use Plan, City of Peoria, Arizona", December 1982

8) McWen, Richard H., A Guide to Hydrologic Analysis using SCS Methods, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1982

9) Storm Drain Design Manual, Storm Drain with Paving of Major Streets, City of Phoenix, August 1975

APPENDIX

SAMPLE HEC-1 OUTPUT

AREA NORTH OF PINNACLE PEAK ROAD

VAX/VMS SRM HEC1COE 5-APR-1985 15:56 TXA5: 5-APR-1985 16:02 DISK 5:[17301,13910050.HEC1]HEC1COE.OUT;1 VAX/VMS
VAX/VMS SRM HEC1COE 5-APR-1985 15:56 TXA5: 5-APR-1985 16:02 DISK 5:[17301,13910050.HEC1]HEC1COE.OUT;1 VAX/VMS
VAX/VMS SRM HEC1COE 5-APR-1985 15:56 TXA5: 5-APR-1985 16:02 DISK 5:[17301,13910050.HEC1]HEC1COE.OUT;1 VAX/VMS

```
 SSSS  RRRR   M   M
S      R   R  MM MM
S      R   R  M M M
 SSS   RRRR   M   M
    S  R R    M   M
    S  R  R   M   M
SSSS   R   R  M   M
```

```
HH      HH  EEEEEEEEEE   CCCCCCCC     11       CCCCCCCC   000000   EEEEEEEEEE
HH      HH  EEEEEEEEEE   CCCCCCCC     11       CCCCCCCC   000000   EEEEEEEEEE
HH      HH  EE         CC           1111     CC         00     00  EE
HH      HH  EE         CC           1111     CC         00     00  EE
HH      HH  EE         CC             11     CC         00     00  EE
HH      HH  EE         CC             11     CC         00     00  EE
HHHHHHHHHH  EEEEEEEE   CC             11     CC         00     00  EEEEEEEE
HHHHHHHHHH  EEEEEEEE   CC             11     CC         00     00  EEEEEEEE
HH      HH  EE         CC             11     CC         00     00  EE
HH      HH  EE         CC             11     CC         00     00  EE
HH      HH  EE         CC             11     CC         00     00  EE            ....
HH      HH  EE         CC             11     CC         00     00  EE            ....
HH      HH  EEEEEEEEEE   CCCCCCCC   111111     CCCCCCCC   000000   EEEEEEEEEE    ....
HH      HH  EEEEEEEEEE   CCCCCCCC   111111     CCCCCCCC   000000   EEEEEEEEEE    ....
```

```
  000000   UU      UU  TTTTTTTTTT     ::::       11
  000000   UU      UU  TTTTTTTTTT     ::::       11
OO      OO UU      UU     TT         ::::     1111
OO      OO UU      UU     TT         ::::     1111
OO      OO UU      UU     TT                    11
OO      OO UU      UU     TT                    11
OO      OO UU      UU     TT         ::::       11
OO      OO UU      UU     TT         ::::       11
OO      OO UU      UU     TT         ::::       11
OO      OO UU      UU     TT         ::::       11
OO      OO UU      UU     TT           ::       11
OO      OO UU      UU     TT           ::       11
  000000   UUUUUUUUUU     TT         ::       111111
  000000   UUUUUUUUUU     TT         ::       111111
```

```
 SSSS  RRRR   M   M
S      R   R  MM MM
S      R   R  M M M
 SSS   RRRR   M   M
    S  R R    M   M
    S  R  R   M   M
SSSS   R   R  M   M
```

VAX/VMS SRM HEC1COE 5-APR-1985 15:56 TXA5: 5-APR-1985 16:02 DISK 5:[17301,13910050.HEC1]HEC1COE.OUT;1 VAX/VMS
VAX/VMS SRM HEC1COE 5-APR-1985 15:56 TXA5: 5-APR-1985 16:02 DISK 5:[17301,13910050.HEC1]HEC1COE.OUT;1 VAX/VMS
VAX/VMS SRM HEC1COE 5-APR-1985 15:56 TXA5: 5-APR-1985 16:02 DISK 5:[17301,13910050.HEC1]HEC1COE.OUT;1 VAX/VMS

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*                                      *
*                                      *
*  RUN DATE      18-J    TIME      15:1 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
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 IS A NEW VERSION OF HEC-1 WHICH CONTAINS MANY NEW FEATURES, BUT MAY ALSO CONTAIN SOME ERRORS. SUSPECTED ERRORS SHOULD BE REPORTED TO PAUL ELY OR ARLEN FELDMAN AT THE HEC. THIS PROGRAM REPLACES PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

  1           ID        PEORIA STORMWATER MASTER PLAN                                   SRM
  2           ID        HEC-1 MODEL FOR AREA NORTH OF PINNACLE PEAK AVENUE              1/19/85
  3           ID        10-, 25-, AND 100-YEAR, 7-HOUR COE DESIGN STORM
  4           ID        JAMES M. MONTGOMERY, CONSULTING ENGINEERS
  5           IT       10                   120
  6           IO        4       0
  7           JR     PREC     1.0   1.201    1.50

  8           KK       10
  9           BA     2.20
 10           PB      2.0
 11           PC        0   0.003   0.010   0.015   0.020   0.025   0.030   0.037   0.044   0.050
 12           PC    0.058   0.066   0.073   0.081   0.089   0.098   0.105   0.115   0.123   0.131
 13           PC    0.142   0.152   0.162   0.172   0.185   0.202   0.220   0.275   0.340   0.435
 14           PC    0.600   0.720   0.795   0.845   0.880   0.905   0.930   0.945   0.959   0.970
 15           PC    0.981   0.991   1.000
 16           LE     0.38     1.5     2.0       0       0
 17           UI        0     357    1096    2134    2424    1284     630     332     119      85
 18           UI        0

 19           KK       11
 20           BA     1.30
 21           PB      2.0
 22           LE     0.38     1.5     2.0       0       0
 23           UI        0     211     648    1261    1432     759     402     196      71      50
 24           UI        0

 25           KK       12
 26           BA     0.35
 27           PB      2.0
 28           LE     0.38     1.5     2.0       0       0
 29           UI        0     197     650     385      95      27       0

 30           KK       13
 31           BA     1.08
 32           PB      2.0
 33           LE     0.38     1.5     2.0       0       0
 34           UI        0     175     538    1048    1190     630     334     163      59      41
 35           UI        0

 36           KK       14
 37           BA     0.80
 38           PB      2.0
 39           LE     0.38     1.5     2.0       0       0
 40           UI        0     248     806    1084     666     201      77      15       0

 41           KK       15
 42           BA     1.75
 43           PB      2.0
 44           LE     0.38     1.5     2.0       0       0
 45           UI        0     284     872    1698    1928    1021     541     264      95      67
 46           UI        0
```

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

  47          KK      16
  48          BA    0.46
  49          PB     2.0
  50          LE    0.38     1.5     2.0       0       0
  51          UI       0     258     854     507     125      36       0

  52          KK      17
  53          BA    1.25
  54          PB     2.0
  55          LE    0.38     1.5     2.0       0       1
  56          UI       0    1365    2733     663      78       0

  57          KK      18
  58          BA    0.59
  59          PB     2.0
  60          LE    0.38     1.5     2.0       0       5
  61          UI       0     644    1290     313      37       0

  62          KK      19
  63          BA    1.15
  64          PB     2.0
  65          LE    0.38     1.5     2.0       0       1
  66          UI       0    1256    2515     610      72       0

  67          KK      20
  68          BA    1.93
  69          PB     2.0
  70          LE    0.38     1.5     2.0       0       0
  71          UI       0      62     294     490     669     910     809     464     334     179
  72          UI     112      67      45      22       0

  73          KK      21
  74          BA    1.09
  75          PB     2.0
  76          LE    0.38     1.5     2.0       0       0
  77          UI       0     325    1088    1463     899     271     104      20       0

  78          KK      22
  79          BA    1.38
  80          PB     2.0
  81          LE    0.38     1.5     2.0       0       0
  82          UI       0      75     353     588     802    1091     970     556     401     215
  83          UI     134      31      54      27       0

  84          KK      23
  85          BA    1.07
  86          PB     2.0
  87          LE    0.38     1.5     2.0       0       0
  88          UI       0     601    1987    1178     290      84       0
```

LINE	ID.....1	2	3	4	5	6	7	8	9	10
89	KK	24								
90	BA	.67								
91	PB	2.0								
92	LE	0.38	1.5	2.0	0	0				
93	UI	0	376	1244	738	181	52	0		
94	KK	30								
95	BA	4.75								
96	PB	2.0								
97	LE	0.38	1.5	2.0	0	0				
98	UI	0	257	1214	2024	2760	3752	3337	1914	1379	739
99	UI	460	278	184	92	0				
100	KK	31								
101	BA	1.04								
102	PB	2.0								
103	LE	0.38	1.5	2.0	0	0				
104	UI	0	322	1047	1409	866	261	100	20	0
105	KK	31								
106	RT	2	2							
107	KK	30								
108	HC	2								
109	KK	32								
110	BA	0.46								
111	PB	2.0								
112	LE	0.38	1.5	2.0	0	0				
113	UI	0	258	854	507	125	36	0		
114	KK	32								
115	HC	2								
116	KK	33								
117	BA	2.75								
118	PB	2.0								
119	LE	0.38	1.5	2.0	0	0				
120	UI	0	693	1370	2668	3030	1605	850	415	149	106
121	UI	0								
122	KK	33								
123	RT	1	2							
124	KK	34								
125	BA	1.01								
126	PB	2.0								
127	LE	0.38	1.5	2.0	0	0				
128	UI	0	313	1017	1369	841	254	97	19	0

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

 129          KK      34
 130          HC       2

 131          KK      35
 132          BA    0.93
 133          PB     2.0
 134          LE    0.38     1.5     2.0       0       0
 135          UI       0     288     937    1260     774     234      90      18       0

 136          KK      40
 137          BA    0.47
 138          PB     2.0
 139          LE    0.38     1.5     2.0       0       0
 140          UI       0     513    1028     249      29       0

 141          KK      41
 142          BA    0.70
 143          PB     2.0
 144          LE    0.38     1.5     2.0       0       0
 145          UI       0     764    1531     371      44       0

 146          KK      42
 147          BA    1.80
 148          PB     2.0
 149          LE    0.38     1.5     2.0       0       0
 150          UI       0     558    1813    2439    1498     452     174      34       0

 151          KK      42
 152          RT       4       2

 153          KK      43
 154          BA    2.11
 155          PB     2.0
 156          LE    0.38     1.5     2.0       0      .5
 157          UI       0    2304    4614    1119     131       0

 158          KK      43
 159          HC       2

 160          KK      44
 161          BA    2.66
 162          PB     2.0
 163          LE    0.38     1.5     2.0       0       0
 164          UI       0     144     680    1133    1545    2101    1869    1072     772     414
 165          UI     258     156     103      52       0

 166          KK      44
 167          RT       3       2
```

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

 168          KK      45
 169          BA    1.52
 170          PB     2.0
 171          LE    0.38     1.5     2.0       0      .5
 172          UI     246     757    1474    1675     887     470     229      82      58       0

 173          KK      45
 174          HC       2

 175          KK      46
 176          BA    2.68
 177          PB     2.0
 178          LE    0.38     1.5     2.0       0      .5
 179          UI       0     145     685    1142    1557    2117    1883    1080     778     417
 180          UI     360     157     104      52       0
 181          ZZ
```

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            FEBRUARY 1981              *
*                                       *
*                                       *
* RUN DATE      18-J    TIME      15:1 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
* THE HYDROLOGIC ENGINEERING CENTER     *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
* (916) 440-3285 OR (FTS) 448-3285      *
*                                       *
*****************************************
```

PEORIA STORMWATER MASTER PLAN — SRH
HEC-1 MODEL FOR AREA NORTH OF PINNACLE PEAK AVENUE — 1/18/85
10-, 25-, AND 100-YEAR, 7-HOUR COE DESIGN STORM
JAMES M. MONTGOMERY, CONSULTING ENGINEERS

```
  6 IO        OUTPUT CONTROL VARIABLES
                   IPRNT          4  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE
                    DMSG        YES  PRINT DIAGNOSTIC MESSAGES

    IT        HYDROGRAPH TIME DATA
                    NMIN         10  MINUTES IN COMPUTATION INTERVAL
                   IDATE     1    0  STARTING DATE
                   ITIME       0000  STARTING TIME
                     NQ.        120  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE     1    0  ENDING DATE
                  NDTIME       1950  ENDING TIME

              COMPUTATION INTERVAL    0.17 HOURS
                   TOTAL TIME BASE   19.83 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

    JP        MULTI-PLAN OPTION
                   NPLAN          1  NUMBER OF PLANS

    JR        MULTI-RATIO OPTION
                 RATIOS OF PRECIPITATION
               1.00      1.20      1.50
```

*** ***

```
          ***************
          *             *
  3 KK    *        10   *
          *             *
          ***************
```

```
          SUBBASIN RUNOFF DATA

 9 BA        SUBBASIN CHARACTERISTICS
                  TAREA.       2.20  SUBBASIN AREA

             PRECIPITATION DATA

10 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

11 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                 0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                 0.01      0.01

16 LE        EXPONENTIAL LOSS RATE
                  STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                  DLTKR        1.50  INITIAL LOSS
                  RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                  ERAIN        0.00  EXPONENT OF PRECIPITATION
                  RTIMP        0.00  PERCENT IMPERVIOUS AREA

16 UI        INPUT UNITGRAPH.  10 ORDINATES.  VOLUME = 1.00
                  0.0     357.0    1096.0    2134.0    2424.0    1284.0     680.0     332.0     119.0      85.0

                                                    ***

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

         **************
         *            *
19 KK    *        11  *
         *            *
         **************

          SUBBASIN RUNOFF DATA

20 BA        SUBBASIN CHARACTERISTICS
                  TAREA.       1.30  SUBBASIN AREA

             PRECIPITATION DATA

21 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

11 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                 0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                 0.01      0.01

22 LE        EXPONENTIAL LOSS RATE
                  STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                  DLTKR        1.50  INITIAL LOSS
                  RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                  ERAIN        0.00  EXPONENT OF PRECIPITATION
                  RTIMP        0.00  PERCENT IMPERVIOUS AREA

22 UI        INPUT UNITGRAPH.  10 ORDINATES.  VOLUME = 1.00
```

```
                0.0     211.0     648.0    1261.0    1432.0     759.0     402.0     196.0      71.0      50.0

                                                                  ***

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

          **************
          *            *
 25 KK    *        12  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

 26 BA        SUBBASIN CHARACTERISTICS
                   TAREA.       0.35  SUBBASIN AREA

              PRECIPITATION DATA

 27 PB             STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI          INCREMENTAL PRECIPITATION PATTERN
                  0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                  0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                  0.01      0.01

 28 LE        EXPONENTIAL LOSS RATE
                   STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                   DLTKR        1.50  INITIAL LOSS
                   RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                   ERAIN        0.00  EXPONENT OF PRECIPITATION
                   RTIMP        0.00  PERCENT IMPERVIOUS AREA

 29 UI        INPUT UNITGRAPH.   6 ORDINATES.  VOLUME = 1.00
                   0.0     197.0     650.0     385.0      95.0      27.0

                                                                  ***

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

          **************
          *            *
 30 KK    *        13  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

 31 BA        SUBBASIN CHARACTERISTICS
                   TAREA.       1.03  SUBBASIN AREA

              PRECIPITATION DATA

 32 PB             STORM        3.00  BASIN TOTAL PRECIPITATION
```

```
11 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                 0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                 0.01      0.01

33 LS         EXPONENTIAL LOSS RATE
                 STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                 DLTKR        1.50  INITIAL LOSS
                 RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                 ERAIN        0.00  EXPONENT OF PRECIPITATION
                 RTIMP        0.00  PERCENT IMPERVIOUS AREA

33 UI         INPUT UNITGRAPH.  10 ORDINATES.  VOLUME = 1.00
                 0.0     175.0     538.0    1048.0    1190.0     630.0     334.0     163.0      59.0      41.0

                                                   ***

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

         **************
         *            *
25 KK    *        14  *
         *            *
         **************

            SUBBASIN RUNOFF DATA

27 BA         SUBBASIN CHARACTERISTICS
                 TAREA.       0.80  SUBBASIN AREA

              PRECIPITATION DATA

38 PB            STORM        2.00  BASIN TOTAL PRECIPITATION

11 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                 0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                 0.01      0.01

39 LS         EXPONENTIAL LOSS RATE
                 STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                 DLTKR        1.50  INITIAL LOSS
                 RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                 ERAIN        0.00  EXPONENT OF PRECIPITATION
                 RTIMP        0.00  PERCENT IMPERVIOUS AREA

39 UI         INPUT UNITGRAPH.   8 ORDINATES. VOLUME = 1.00
                 0.0     248.0     806.0    1084.0     666.0     201.0      77.0      15.0

                                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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          *            *
41 KK     *        15  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

42 BA         SUBBASIN CHARACTERISTICS
                   TAREA.       1.75  SUBBASIN AREA

              PRECIPITATION DATA

43 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

11 PI           INCREMENTAL PRECIPITATION PATTERN
                  0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                  0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                  0.01      0.01

44 LE         EXPONENTIAL LOSS RATE
                   STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                   DLTKR        1.50  INITIAL LOSS
                   RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                   ERAIN        0.00  EXPONENT OF PRECIPITATION
                   RTIMP        0.00  PERCENT IMPERVIOUS AREA

44 UI         INPUT UNITGRAPH.  10 ORDINATES.  VOLUME = 1.00
                   0.0     284.0     872.0    1698.0    1928.0    1021.0     541.0     284.0      95.0      67.0

                                                   ***


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          *            *
47 KK     *        16  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

48 BA         SUBBASIN CHARACTERISTICS
                   TAREA.       0.46  SUBBASIN AREA

              PRECIPITATION DATA

49 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

11 PI           INCREMENTAL PRECIPITATION PATTERN
                  0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                  0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                  0.01      0.01

50 LE         EXPONENTIAL LOSS RATE
                   STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
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                    DLTKR        1.50  INITIAL LOSS
                    RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                    ERAIN        0.00  EXPONENT OF PRECIPITATION
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

 50 UI          INPUT UNITGRAPH.   6 ORDINATES.  VOLUME = 1.00
                    0.0     258.0     854.0     507.0     125.0      36.0

                                                          ***


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          **************
          *            *
 52 KK    *        17  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

 53 BA          SUBBASIN CHARACTERISTICS
                    TAREA.       1.25  SUBBASIN AREA

                PRECIPITATION DATA

 54 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

 56 LS          EXPONENTIAL LOSS RATE
                    STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                    DLTKR        1.50  INITIAL LOSS
                    RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                    ERAIN        0.00  EXPONENT OF PRECIPITATION
                    RTIMP        1.00  PERCENT IMPERVIOUS AREA

 55 UI          INPUT UNITGRAPH.   5 ORDINATES.  VOLUME = 1.00
                    0.0    1365.0    2733.0     663.0      78.0

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          *            *
 57 KK    *        18  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

 58 BA          SUBBASIN CHARACTERISTICS
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                TAREA.      0.59  SUBBASIN AREA

            PRECIPITATION DATA

59 PB            STORM       2.00  BASIN TOTAL PRECIPITATION

11 PI          INCREMENTAL PRECIPITATION PATTERN
                0.00     0.01     0.00     0.00     0.01     0.00     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.02     0.03     0.05     0.06     0.09     0.17
                0.12     0.07     0.05     0.03     0.02     0.03     0.01     0.01     0.01     0.01
                0.01     0.01

60 LE        EXPONENTIAL LOSS RATE
                STRKR       0.38  INITIAL VALUE OF LOSS COEFFICIENT
                DLTKR       1.50  INITIAL LOSS
                RTIOL       2.00  LOSS COEFFICIENT RECESSION CONSTANT
                ERAIN       0.00  EXPONENT OF PRECIPITATION
                RTIMP       5.00  PERCENT IMPERVIOUS AREA

60 UI        INPUT UNITGRAPH,  5 ORDINATES.  VOLUME = 1.00
                0.0     644.0    1290.0     313.0      37.0

                                                        ***

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

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          *            *
62 KK     *      19    *
          *            *
          **************

          SUBBASIN RUNOFF DATA

63 BA        SUBBASIN CHARACTERISTICS
                TAREA.      1.15  SUBBASIN AREA

             PRECIPITATION DATA

64 PB            STORM       2.00  BASIN TOTAL PRECIPITATION

11 PI          INCREMENTAL PRECIPITATION PATTERN
                0.00     0.01     0.00     0.00     0.01     0.00     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.02     0.03     0.05     0.06     0.09     0.17
                0.12     0.07     0.05     0.03     0.02     0.03     0.01     0.01     0.01     0.01
                0.01     0.01

65 LE        EXPONENTIAL LOSS RATE
                STRKR       0.38  INITIAL VALUE OF LOSS COEFFICIENT
                DLTKR       1.50  INITIAL LOSS
                RTIOL       2.00  LOSS COEFFICIENT RECESSION CONSTANT
                ERAIN       0.00  EXPONENT OF PRECIPITATION
                RTIMP       1.00  PERCENT IMPERVIOUS AREA

65 UI        INPUT UNITGRAPH.  5 ORDINATES.  VOLUME = 1.00
                0.0    1256.0    2513.0     610.0      72.0

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          **************
          *            *
 67 KK    *        20  *
          *            *
          **************

             SUBBASIN RUNOFF DATA

 68 BA         SUBBASIN CHARACTERISTICS
                    TAREA.        1.93  SUBBASIN AREA

               PRECIPITATION DATA

 69 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

 70 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.33  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.00  PERCENT IMPERVIOUS AREA

 70 UI          INPUT UNITGRAPH.  14 ORDINATES.  VOLUME = 0.60
                     0.0      62.0     294.0     490.0     669.0     810.0     809.0     464.0     284.0     179.0
                   112.0      67.0      45.0      22.0

                                                                    ***


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          **************
          *            *
 73 KK    *        21  *
          *            *
          **************

             SUBBASIN RUNOFF DATA

 74 BA         SUBBASIN CHARACTERISTICS
                    TAREA.        1.08  SUBBASIN AREA

               PRECIPITATION DATA

 75 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
```

```
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                0.01      0.01

76 LE        EXPONENTIAL LOSS RATE
                STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                DLTKR        1.50  INITIAL LOSS
                RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                ERAIN        0.00  EXPONENT OF PRECIPITATION
                RTIMP        0.00  PERCENT IMPERVIOUS AREA

76 UI        INPUT UNITGRAPH.   8 ORDINATES.  VOLUME = 1.00
                0.0     335.0    1088.0    1463.0     899.0     271.0     104.0      20.0

                                                  ***

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        **************
        *            *
78 KK   *        22  *
        *            *
        **************

           SUBBASIN RUNOFF DATA

79 BA        SUBBASIN CHARACTERISTICS
                TAREA.       1.38  SUBBASIN AREA

             PRECIPITATION DATA

80 PB           STORM        2.00  BASIN TOTAL PRECIPITATION

11 PI          INCREMENTAL PRECIPITATION PATTERN
                0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                0.01      0.01

81 LE        EXPONENTIAL LOSS RATE
                STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                DLTKR        1.50  INITIAL LOSS
                RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                ERAIN        0.00  EXPONENT OF PRECIPITATION
                RTIMP        0.00  PERCENT IMPERVIOUS AREA

81 UI        INPUT UNITGRAPH.  14 ORDINATES.  VOLUME = 1.00
                0.0      75.0     353.0     588.0     802.0    1091.0     970.0     556.0     401.0     215.0
              184.0      81.0      54.0      27.0

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          *           *
84 KK     *        23 *
          *           *
          ***************

             SUBBASIN RUNOFF DATA

85 BA          SUBBASIN CHARACTERISTICS
                    TAREA.       1.07  SUBBASIN AREA

               PRECIPITATION DATA

86 PB                STORM       2.00  BASIN TOTAL PRECIPITATION

11 PI            INCREMENTAL PRECIPITATION PATTERN
                   0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                   0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                   0.01      0.01

87 LS          EXPONENTIAL LOSS RATE
                    STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                    DLTKR        1.50  INITIAL LOSS
                    RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                    ERAIN        0.00  EXPONENT OF PRECIPITATION
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

87 UI          INPUT UNITGRAPH.   6 ORDINATES.  VOLUME = 1.00
                    0.0     601.0    1987.0    1178.0     290.0      84.0

                                                          ***


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          ***************
          *           *
89 KK     *        24 *
          *           *
          ***************

             SUBBASIN RUNOFF DATA

90 BA          SUBBASIN CHARACTERISTICS
                    TAREA.       0.67  SUBBASIN AREA

               PRECIPITATION DATA

91 PB                STORM       2.00  BASIN TOTAL PRECIPITATION

11 PI            INCREMENTAL PRECIPITATION PATTERN
                   0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                   0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                   0.01      0.01

92 LS          EXPONENTIAL LOSS RATE
                    STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                    DLTKR        1.50  INITIAL LOSS
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                    RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                    ERAIN        0.00  EXPONENT OF PRECIPITATION
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

 92 UI          INPUT UNITGRAPH.   6 ORDINATES.  VOLUME = 1.00
                     0.0     376.0    1244.0     738.0     181.0      52.0

                                                   ***

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          **************
          *            *
 94 KK    *        30  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

 95 BA          SUBBASIN CHARACTERISTICS
                     TAREA.       4.75  SUBBASIN AREA

                PRECIPITATION DATA

 96 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

 97 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     BLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.00  PERCENT IMPERVIOUS AREA

 97 UI          INPUT UNITGRAPH.  14 ORDINATES.  VOLUME = 1.00
                     0.0     257.0    1214.0    2024.0    2760.0    3752.0    3337.0    1914.0    1279.0     739.0
                   460.0     278.0     184.0      92.0

                                                   ***

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

          **************
          *            *
100 KK    *        31  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

101 BA          SUBBASIN CHARACTERISTICS
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                    TAREA.       1.04  SUBBASIN AREA

               PRECIPITATION DATA

102 PB                STORM       2.00  BASIN TOTAL PRECIPITATION

 11 PI             INCREMENTAL PRECIPITATION PATTERN
                     0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                     0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                     0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                     0.01      0.01

103 LE          EXPONENTIAL LOSS RATE
                     STRKR       0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR       1.50  INITIAL LOSS
                     RTIOL       2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN       0.00  EXPONENT OF PRECIPITATION
                     RTIMP       0.00  PERCENT IMPERVIOUS AREA

103 UI          INPUT UNITGRAPH.   8 ORDINATES.  VOLUME = 1.00
                     0.0     322.0    1047.0    1409.0     866.0     261.0     100.0      20.0

                                                          ***

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

          **************
          *            *
105 KK    *        31  *
          *            *
          **************

             HYDROGRAPH ROUTING DATA

106 RT          TATUM OR STRADDLE-STAGGER ROUTING
                     NSTPS           2  NUMBER OF TATUM STEPS
                     NSTDL           2  NUMBER OF ORDINATES TO BE AVERAGED
                     LAG             0  NUMBER OF INTERVALS TO LAG HYDROGRAPH

                                                          ***

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

          **************
          *            *
107 KK    *        30  *
          *            *
          **************

108 HC          HYDROGRAPH COMBINATION
                     ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

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

          **************
          *            *
109 KK    *        32  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

110 BA        SUBBASIN CHARACTERISTICS
                  TAREA,       0.46  SUBBASIN AREA

              PRECIPITATION DATA

111 PB              STORM       2.00  BASIN TOTAL PRECIPITATION

 11 PI          INCREMENTAL PRECIPITATION PATTERN
                  0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                  0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                  0.01      0.01

112 LE        EXPONENTIAL LOSS RATE
                  STRKR       0.38  INITIAL VALUE OF LOSS COEFFICIENT
                  DLTKR       1.50  INITIAL LOSS
                  RTIOL       2.00  LOSS COEFFICIENT RECESSION CONSTANT
                  ERAIN       0.00  EXPONENT OF PRECIPITATION
                  RTIMP       0.00  PERCENT IMPERVIOUS AREA

112 UI        INPUT UNITGRAPH.   6 ORDINATES.  VOLUME = 1.00
                  0.0     358.0     854.0     507.0     125.0      36.0

                                                          ***

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

          **************
          *            *
114 KK    *        32  *
          *            *
          **************

115 HC        HYDROGRAPH COMBINATION
                  ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

          **************
          *            *
116 KK    *        33  *
          *            *
          **************
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            SUBBASIN RUNOFF DATA

117 BA        SUBBASIN CHARACTERISTICS
                   TAREA,       2.75  SUBBASIN AREA

              PRECIPITATION DATA

118 PB             STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI          INCREMENTAL PRECIPITATION PATTERN
                  0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                  0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                  0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                  0.01      0.01

119 LE        EXPONENTIAL LOSS RATE
                   STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                   DLTKR        1.50  INITIAL LOSS
                   RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                   ERAIN        0.00  EXPONENT OF PRECIPITATION
                   RTIMP        0.00  PERCENT IMPERVIOUS AREA

119 UI        INPUT UNITGRAPH.  10 ORDINATES.  VOLUME = 1.02
                   0.0     693.0    1370.0    2668.0    3030.0    1605.0     850.0     415.0     149.0     106.0

                                                    ***

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

          **************
          *            *
122 KK    *        33  *
          *            *
          **************

            HYDROGRAPH ROUTING DATA

123 RT        TATUM OR STRADDLE-STAGGER ROUTING
                   NSTPS            1   NUMBER OF TATUM STEPS
                   NSTDL            2   NUMBER OF ORDINATES TO BE AVERAGED
                   LAG              0   NUMBER OF INTERVALS TO LAG HYDROGRAPH

                                                    ***

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

          **************
          *            *
124 KK    *        34  *
          *            *
          **************

            SUBBASIN RUNOFF DATA

125 BA        SUBBASIN CHARACTERISTICS
```

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                    TAREA.       1.01  SUBBASIN AREA

               PRECIPITATION DATA

126 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

127 LE          EXPONENTIAL LOSS RATE
                    STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                    DLTKR        1.50  INITIAL LOSS
                    RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                    ERAIN        0.00  EXPONENT OF PRECIPITATION
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

127 UI          INPUT UNITGRAPH.   8 ORDINATES.  VOLUME = 1.00
                    0.0     313.0    1017.0    1369.0     841.0     254.0      97.0      19.0

                                                          ***

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

          **************
          *            *
129 KK    *        34  *
          *            *
          **************

130 HC          HYDROGRAPH COMBINATION
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

          **************
          *            *
131 KK    *        35  *
          *            *
          **************

             SUBBASIN RUNOFF DATA

132 BA          SUBBASIN CHARACTERISTICS
                    TAREA.       0.93  SUBBASIN AREA

               PRECIPITATION DATA

133 PB              STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
```

```
                0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.02     0.03     0.05     0.06     0.09     0.17
                0.12     0.07     0.05     0.03     0.02     0.03     0.01     0.01     0.01     0.01
                0.01     0.01

134 LS        EXPONENTIAL LOSS RATE
                   STRKR      0.38  INITIAL VALUE OF LOSS COEFFICIENT
                   DLTKR      1.50  INITIAL LOSS
                   RTIOL      2.00  LOSS COEFFICIENT RECESSION CONSTANT
                   ERAIN      0.00  EXPONENT OF PRECIPITATION
                   RTIMP      0.00  PERCENT IMPERVIOUS AREA

134 UI        INPUT UNITGRAPH,  8 ORDINATES,  VOLUME = 1.00
                   0.0     288.0     937.0    1260.0     774.0     234.0      90.0      18.0

                                                  ***

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

          **************
          *            *
136 KK    *       40   *
          *            *
          **************

            SUBBASIN RUNOFF DATA

137 BA        SUBBASIN CHARACTERISTICS
                   TAREA,     0.47  SUBBASIN AREA

              PRECIPITATION DATA

138 PB             STORM      2.00  BASIN TOTAL PRECIPITATION

 11 PI          INCREMENTAL PRECIPITATION PATTERN
                0.00     0.01     0.00     0.00     0.01     0.00     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01
                0.01     0.01     0.01     0.01     0.02     0.03     0.05     0.06     0.09     0.17
                0.12     0.07     0.05     0.03     0.02     0.03     0.01     0.01     0.01     0.01
                0.01     0.01

139 LS        EXPONENTIAL LOSS RATE
                   STRKR      0.38  INITIAL VALUE OF LOSS COEFFICIENT
                   DLTKR      1.50  INITIAL LOSS
                   RTIOL      2.00  LOSS COEFFICIENT RECESSION CONSTANT
                   ERAIN      0.00  EXPONENT OF PRECIPITATION
                   RTIMP      0.00  PERCENT IMPERVIOUS AREA

139 UI        INPUT UNITGRAPH,  5 ORDINATES,  VOLUME = 1.00
                   0.0     513.0    1028.0     249.0      29.0

                                                  ***

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

          **************
          *            *
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141 KK     *        41  *
           *            *
           ***************

              SUBBASIN RUNOFF DATA

142 BA          SUBBASIN CHARACTERISTICS
                     TAREA.       0.70  SUBBASIN AREA

                PRECIPITATION DATA

143 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

144 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.00  PERCENT IMPERVIOUS AREA

144 UI          INPUT UNITGRAPH.   5 ORDINATES.  VOLUME = 1.00
                     0.0     764.0    1531.0     371.0      44.0

                                                          ***

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

           ***************
           *             *
146 KK     *        42   *
           *             *
           ***************

              SUBBASIN RUNOFF DATA

147 BA          SUBBASIN CHARACTERISTICS
                     TAREA.       1.90  SUBBASIN AREA

                PRECIPITATION DATA

148 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

149 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
```

```
                    ERAIN        0.00  EXPONENT OF PRECIPITATION
                    RTIMP        0.00  PERCENT IMPERVIOUS AREA

149 UI          INPUT UNITGRAPH.   8 ORDINATES.  VOLUME = 1.00
                    0.0     558.0    1813.0    2439.0    1498.0     452.0     174.0      34.0

                                                          ***


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


          **************
          *            *
151 KK    *        42  *
          *            *
          **************

             HYDROGRAPH ROUTING DATA

152 RT          TATUM OR STRADDLE-STAGGER ROUTING
                    NSTPS            4   NUMBER OF TATUM STEPS
                    NSTDL            2   NUMBER OF ORDINATES TO BE AVERAGED
                    LAG              0   NUMBER OF INTERVALS TO LAG HYDROGRAPH

                                                          ***


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


          **************
          *            *
153 KK    *        43  *
          *            *
          **************

             SUBBASIN RUNOFF DATA

154 BA          SUBBASIN CHARACTERISTICS
                     TAREA,       2.11  SUBBASIN AREA

                PRECIPITATION DATA

155 PB               STORM        3.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

156 LE          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.50  PERCENT IMPERVIOUS AREA

156 UI          INPUT UNITGRAPH.   5 ORDINATES.  VOLUME = 1.00
```

```
                    0.0    3304.0    4614.0    1119.0     131.0

                                                                  ***

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

          ***************
          *             *
158 KK    *        43   *
          *             *
          ***************

159 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

          ***************
          *             *
160 KK    *        44   *
          *             *
          ***************

             SUBBASIN RUNOFF DATA

161 BA          SUBBASIN CHARACTERISTICS
                     TAREA.       2.66  SUBBASIN AREA

                PRECIPITATION DATA

162 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

163 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.00  PERCENT IMPERVIOUS AREA

163 UI          INPUT UNITGRAPH.  14 ORDINATES.  VOLUME = 1.00
                     0.0     144.0     680.0    1133.0    1545.0    2101.0    1869.0    1072.0     772.0     414.0
                   258.0     156.0     103.0      53.0

                                                                  ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            ***************
            *             *
166 KK      *        44   *
            *             *
            ***************

              HYDROGRAPH ROUTING DATA

167 RT          TATUM OR STRADDLE-STAGGER ROUTING
                     NSTPS            3   NUMBER OF TATUM STEPS
                     NSTDL            2   NUMBER OF ORDINATES TO BE AVERAGED
                     LAG              0   NUMBER OF INTERVALS TO LAG HYDROGRAPH

                                                          ***

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

            ***************
            *             *
168 KK      *        45   *
            *             *
            ***************

              SUBBASIN RUNOFF DATA

169 BA          SUBBASIN CHARACTERISTICS
                     TAREA.       1.52  SUBBASIN AREA

                PRECIPITATION DATA

170 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.12      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

171 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.50  PERCENT IMPERVIOUS AREA

171 UI          INPUT UNITGRAPH,   9 ORDINATES.  VOLUME = 1.00
                   246.0     757.0    1474.0    1675.0     887.0     470.0     229.0      82.0      58.0

                                                          ***

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

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

```
173 KK     *        45  *
           *            *
           **************

174 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***


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


           **************
           *            *
175 KK     *        46  *
           *            *
           **************

              SUBBASIN RUNOFF DATA

176 BA          SUBBASIN CHARACTERISTICS
                     TAREA,       2.68  SUBBASIN AREA

                PRECIPITATION DATA

177 PB               STORM        2.00  BASIN TOTAL PRECIPITATION

 11 PI            INCREMENTAL PRECIPITATION PATTERN
                    0.00      0.01      0.00      0.00      0.01      0.00      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.02      0.03      0.05      0.06      0.09      0.17
                    0.13      0.07      0.05      0.03      0.02      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01

178 LS          EXPONENTIAL LOSS RATE
                     STRKR        0.38  INITIAL VALUE OF LOSS COEFFICIENT
                     DLTKR        1.50  INITIAL LOSS
                     RTIOL        2.00  LOSS COEFFICIENT RECESSION CONSTANT
                     ERAIN        0.00  EXPONENT OF PRECIPITATION
                     RTIMP        0.50  PERCENT IMPERVIOUS AREA

178 UI          INPUT UNITGRAPH,  14 ORDINATES,  VOLUME = 1.00
                     0.0     145.0     685.0    1142.0    1557.0    2117.0    1883.0    1080.0     778.0     417.0
                   260.0     157.0     104.0      52.0

                                                          ***
```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND. AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

					RATIOS APPLIED TO PRECIPITATION		
OPERATION	STATION	AREA	PLAN		RATIO 1	RATIO 2	RATIO 3
					1.00	1.20	1.50
HYDROGRAPH AT	10	2.20	1	FLOW	1259.	1660.	2253.
				TIME	5.67	5.67	5.67
HYDROGRAPH AT	11	1.30	1	FLOW	744.	981.	1331.
				TIME	5.67	5.67	5.67
HYDROGRAPH AT	12	0.35	1	FLOW	247.	322.	432.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	13	1.08	1	FLOW	618.	815.	1106.
				TIME	5.67	5.67	5.67
HYDROGRAPH AT	14	0.80	1	FLOW	518.	678.	914.
				TIME	5.50	5.50	5.50
HYDROGRAPH AT	15	1.75	1	FLOW	1001.	1321.	1792.
				TIME	5.67	5.67	5.67
HYDROGRAPH AT	16	0.46	1	FLOW	325.	423.	568.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	17	1.25	1	FLOW	1010.	1299.	1738.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	18	0.59	1	FLOW	484.	620.	821.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	19	1.15	1	FLOW	930.	1196.	1588.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	20	1.93	1	FLOW	510.	686.	946.
				TIME	5.83	5.83	5.83
HYDROGRAPH AT	21	1.08	1	FLOW	699.	915.	1233.
				TIME	5.50	5.50	5.50
HYDROGRAPH AT	22	1.38	1	FLOW	612.	823.	1134.
				TIME	5.83	5.33	5.83
HYDROGRAPH AT	23	1.07	1	FLOW	756.	984.	1321.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	24	0.67	1	FLOW	473.	616.	827.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	30	4.75	1	FLOW	2104.	2829.	3901.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	31	1.04	1	FLOW	673.	881.	1187.
				TIME	5.50	5.50	5.50
ROUTED TO							

	31	1.04	1	FLOW	615.	810.	1099.
				TIME	5.67	5.67	5.67
2 COMBINED AT	30	5.79	1	FLOW	2660.	3566.	4905.
				TIME	5.83	5.83	5.83
HYDROGRAPH AT	32	0.46	1	FLOW	325.	423.	568.
				TIME	5.33	5.33	5.33
2 COMBINED AT	32	6.25	1	FLOW	2761.	3715.	5125.
				TIME	5.83	5.83	5.83
HYDROGRAPH AT	33	2.75	1	FLOW	1581.	2089.	2838.
				TIME	5.67	5.67	5.67
ROUTED TO	33	2.75	1	FLOW	1486.	1976.	2698.
				TIME	5.67	5.67	5.67
HYDROGRAPH AT	34	1.01	1	FLOW	654.	856.	1153.
				TIME	5.50	5.50	5.50
2 COMBINED AT	34	3.76	1	FLOW	2058.	2729.	3720.
				TIME	5.67	5.67	5.67
HYDROGRAPH AT	35	0.93	1	FLOW	602.	788.	1062.
				TIME	5.50	5.50	5.50
HYDROGRAPH AT	40	0.47	1	FLOW	379.	487.	648.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	41	0.70	1	FLOW	564.	726.	965.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	42	1.80	1	FLOW	1165.	1525.	2055.
				TIME	5.50	5.50	5.50
ROUTED TO	42	1.80	1	FLOW	988.	1311.	1787.
				TIME	5.83	5.83	5.83
HYDROGRAPH AT	43	2.11	1	FLOW	1703.	2190.	2911.
				TIME	5.33	5.33	5.33
2 COMBINED AT	43	3.91	1	FLOW	1947.	2575.	3507.
				TIME	5.33	5.33	5.33
HYDROGRAPH AT	44	2.66	1	FLOW	1178.	1584.	2184.
				TIME	5.83	5.83	5.83
ROUTED TO	44	2.66	1	FLOW	1114.	1503.	2081.
				TIME	6.17	6.17	6.17
HYDROGRAPH AT	45	1.52	1	FLOW	872.	1149.	1559.
				TIME	5.50	5.50	5.50
2 COMBINED AT	45	4.18	1	FLOW	1327.	1834.	2598.
				TIME	6.00	6.00	6.00
HYDROGRAPH AT	46	2.68	1	FLOW	1191.	1600.	2205.
				TIME	5.83	5.83	5.83

*** NORMAL END OF JOB ***

SAMPLE SWMM OUTPUT

AREA FROM PINNACLE PEAK ROAD TO BELL ROAD

$ $ $ --- CONTINUITY CHECK FOR QUANTITY --- $ $ $

	CUBIC FEET	INCHES OVER TOTAL BASIN
TOTAL PRECIPITATION (RAIN PLUS SNOW)	5.151114E+07	1.595
TOTAL INFILTRATION	4.844642E+07	1.500
TOTAL EVAPORATION	4.721027E+05	0.015
TOTAL GUTTER/PIPE/SUBCAT FLOW AT INLETS	1.028485E+05	0.003
TOTAL WATER REMAINING IN GUTTER/PIPES	4.755419E+04	0.001
TOTAL WATER REMAINING IN SURFACE STORAGE	8.354197E+05	0.026
INFILTRATION OVER THE PERVIOUS AREA...	4.844642E+07	1.544

INFILTRATION + EVAPORATION + SNOW REMOVAL + INLET FLOW + WATER REMAINING IN GUTTER/PIPES + WATER REMAINING IN SURFACE STORAGE + WATER REMAINING IN SNOW COVER.....	4.990435E+07	1.545

THE ERROR IN CONTINUITY IS CALCULATED AS

```
*************************************
* PRECIPITATION + INITIAL SNOW COVER  *
*      - INFILTRATION -               *
*EVAPORATION - SNOW REMOVAL -         *
*INLET FLOW - WATER IN GUTTER/PIPES - *
*WATER IN SURFACE STORAGE -           *
*WATER REMAINING IN SNOW COVER        *
*-------------------------------------*
* PRECIPITATION + INITIAL SNOW COVER  *
*************************************
```

ERROR..... 3.119 PERCENT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 101

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.739
1/ 1/ 0	1 5.0	3.452
1/ 1/ 0	1 10.0	4.211
1/ 1/ 0	1 15.0	4.200
1/ 1/ 0	1 20.0	4.481
1/ 1/ 0	1 25.0	4.307
1/ 1/ 0	1 30.0	4.131
1/ 1/ 0	1 35.0	4.093
1/ 1/ 0	1 40.0	4.153
1/ 1/ 0	1 45.0	4.282
1/ 1/ 0	1 50.0	4.442
1/ 1/ 0	1 55.0	4.392
1/ 1/ 0	2 0.0	4.368
1/ 1/ 0	2 5.0	4.100
1/ 1/ 0	2 10.0	3.851
1/ 1/ 0	2 15.0	3.618
1/ 1/ 0	2 20.0	3.397
1/ 1/ 0	2 25.0	3.187
1/ 1/ 0	2 30.0	2.985
1/ 1/ 0	2 35.0	2.791
1/ 1/ 0	2 40.0	2.604
1/ 1/ 0	2 45.0	2.424
1/ 1/ 0	2 50.0	2.250
1/ 1/ 0	2 55.0	2.082
1/ 1/ 0	2 60.0	1.920
1/ 1/ 0	3 5.0	1.765
1/ 1/ 0	3 10.0	1.614
1/ 1/ 0	3 15.0	1.470
1/ 1/ 0	3 20.0	1.332
1/ 1/ 0	3 25.0	1.199
1/ 1/ 0	3 30.0	1.073
1/ 1/ 0	3 35.0	0.952
1/ 1/ 0	3 40.0	0.838
1/ 1/ 0	3 45.0	0.729
1/ 1/ 0	3 50.0	0.627
1/ 1/ 0	3 55.0	0.532
1/ 1/ 0	3 60.0	0.443
1/ 1/ 0	4 5.0	0.360
1/ 1/ 0	4 10.0	0.285
1/ 1/ 0	4 15.0	0.217
1/ 1/ 0	4 20.0	0.157
1/ 1/ 0	4 25.0	0.105
1/ 1/ 0	4 30.0	0.061
1/ 1/ 0	4 35.0	0.028
1/ 1/ 0	4 40.0	0.006

FLOW WT'D MEANS 1.671

FLOW WT'D STD-DEVS 18.318

TOTAL LOADS 30075.535

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 102

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.399
1/ 1/ 0	1 5.0	1.862
1/ 1/ 0	1 10.0	2.269
1/ 1/ 0	1 15.0	2.262
1/ 1/ 0	1 20.0	2.411
1/ 1/ 0	1 25.0	2.315
1/ 1/ 0	1 30.0	2.218
1/ 1/ 0	1 35.0	2.196
1/ 1/ 0	1 40.0	2.226
1/ 1/ 0	1 45.0	2.294
1/ 1/ 0	1 50.0	2.378
1/ 1/ 0	1 55.0	2.349
1/ 1/ 0	2 0.0	2.334
1/ 1/ 0	2 5.0	2.188
1/ 1/ 0	2 10.0	2.053
1/ 1/ 0	2 15.0	1.926
1/ 1/ 0	2 20.0	1.806
1/ 1/ 0	2 25.0	1.692
1/ 1/ 0	2 30.0	1.582
1/ 1/ 0	2 35.0	1.478
1/ 1/ 0	2 40.0	1.377
1/ 1/ 0	2 45.0	1.279
1/ 1/ 0	2 50.0	1.186
1/ 1/ 0	2 55.0	1.095
1/ 1/ 0	2 60.0	1.008
1/ 1/ 0	3 5.0	0.925
1/ 1/ 0	3 10.0	0.844
1/ 1/ 0	3 15.0	0.767
1/ 1/ 0	3 20.0	0.693
1/ 1/ 0	3 25.0	0.622
1/ 1/ 0	3 30.0	0.555
1/ 1/ 0	3 35.0	0.491
1/ 1/ 0	3 40.0	0.430
1/ 1/ 0	3 45.0	0.372
1/ 1/ 0	3 50.0	0.319
1/ 1/ 0	3 55.0	0.268
1/ 1/ 0	3 60.0	0.221
1/ 1/ 0	4 5.0	0.178
1/ 1/ 0	4 10.0	0.139
1/ 1/ 0	4 15.0	0.104
1/ 1/ 0	4 20.0	0.073
1/ 1/ 0	4 25.0	0.047
1/ 1/ 0	4 30.0	0.025
1/ 1/ 0	4 35.0	0.010
1/ 1/ 0	4 40.0	0.001

FLOW WT'D MEANS 0.888

FLOW WT'D STD-DEVS 9.783

TOTAL LOADS 15979.912

CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 103

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.901
1/ 1/ 0	1 5.0	4.212
1/ 1/ 0	1 10.0	5.137
1/ 1/ 0	1 15.0	5.124
1/ 1/ 0	1 20.0	5.467
1/ 1/ 0	1 25.0	5.255
1/ 1/ 0	1 30.0	5.039
1/ 1/ 0	1 35.0	4.994
1/ 1/ 0	1 40.0	5.067
1/ 1/ 0	1 45.0	5.224
1/ 1/ 0	1 50.0	5.419
1/ 1/ 0	1 55.0	5.358
1/ 1/ 0	2 0.0	5.328
1/ 1/ 0	2 5.0	5.001
1/ 1/ 0	2 10.0	4.698
1/ 1/ 0	2 15.0	4.413
1/ 1/ 0	2 20.0	4.144
1/ 1/ 0	2 25.0	3.887
1/ 1/ 0	2 30.0	3.641
1/ 1/ 0	2 35.0	3.404
1/ 1/ 0	2 40.0	3.176
1/ 1/ 0	2 45.0	2.956
1/ 1/ 0	2 50.0	2.744
1/ 1/ 0	2 55.0	2.539
1/ 1/ 0	2 60.0	2.342
1/ 1/ 0	3 5.0	2.152
1/ 1/ 0	3 10.0	1.969
1/ 1/ 0	3 15.0	1.793
1/ 1/ 0	3 20.0	1.624
1/ 1/ 0	3 25.0	1.462
1/ 1/ 0	3 30.0	1.308
1/ 1/ 0	3 35.0	1.161
1/ 1/ 0	3 40.0	1.021
1/ 1/ 0	3 45.0	0.889
1/ 1/ 0	3 50.0	0.765
1/ 1/ 0	3 55.0	0.648
1/ 1/ 0	3 60.0	0.539
1/ 1/ 0	4 5.0	0.439
1/ 1/ 0	4 10.0	0.347
1/ 1/ 0	4 15.0	0.264
1/ 1/ 0	4 20.0	0.191
1/ 1/ 0	4 25.0	0.127
1/ 1/ 0	4 30.0	0.074
1/ 1/ 0	4 35.0	0.034
1/ 1/ 0	4 40.0	0.007

FLOW WT'D MEANS 2.038

FLOW WT'D STD-DEVS 22.346

TOTAL LOADS 36686.141

CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 104

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		22.346
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 105

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		22.346
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 106

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.193
1/ 1/ 0	1 5.0	1.162
1/ 1/ 0	1 10.0	1.318
1/ 1/ 0	1 15.0	1.195
1/ 1/ 0	1 20.0	1.227
1/ 1/ 0	1 25.0	1.102
1/ 1/ 0	1 30.0	0.997
1/ 1/ 0	1 35.0	0.959
1/ 1/ 0	1 40.0	0.966
1/ 1/ 0	1 45.0	1.005
1/ 1/ 0	1 50.0	1.060
1/ 1/ 0	1 55.0	1.038
1/ 1/ 0	2 0.0	1.028
1/ 1/ 0	2 5.0	0.928
1/ 1/ 0	2 10.0	0.837
1/ 1/ 0	2 15.0	0.755
1/ 1/ 0	2 20.0	0.678
1/ 1/ 0	2 25.0	0.606
1/ 1/ 0	2 30.0	0.539
1/ 1/ 0	2 35.0	0.476
1/ 1/ 0	2 40.0	0.416
1/ 1/ 0	2 45.0	0.361
1/ 1/ 0	2 50.0	0.308
1/ 1/ 0	2 55.0	0.260
1/ 1/ 0	2 60.0	0.215
1/ 1/ 0	3 5.0	0.173
1/ 1/ 0	3 10.0	0.135
1/ 1/ 0	3 15.0	0.101
1/ 1/ 0	3 20.0	0.072
1/ 1/ 0	3 25.0	0.046
1/ 1/ 0	3 30.0	0.025
1/ 1/ 0	3 35.0	0.010
1/ 1/ 0	3 40.0	0.001

FLOW WT'D MEANS 0.337

FLOW WT'D STD-DEVS 4.281

TOTAL LOADS 6057.317 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 107

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.145
1/ 1/ 0	1 5.0	0.877
1/ 1/ 0	1 10.0	0.994
1/ 1/ 0	1 15.0	0.900
1/ 1/ 0	1 20.0	0.924
1/ 1/ 0	1 25.0	0.830
1/ 1/ 0	1 30.0	0.750
1/ 1/ 0	1 35.0	0.721
1/ 1/ 0	1 40.0	0.726
1/ 1/ 0	1 45.0	0.755
1/ 1/ 0	1 50.0	0.796
1/ 1/ 0	1 55.0	0.779
1/ 1/ 0	2 0.0	0.771
1/ 1/ 0	2 5.0	0.695
1/ 1/ 0	2 10.0	0.627
1/ 1/ 0	2 15.0	0.565
1/ 1/ 0	2 20.0	0.507
1/ 1/ 0	2 25.0	0.453
1/ 1/ 0	2 30.0	0.402
1/ 1/ 0	2 35.0	0.355
1/ 1/ 0	2 40.0	0.310
1/ 1/ 0	2 45.0	0.268
1/ 1/ 0	2 50.0	0.229
1/ 1/ 0	2 55.0	0.192
1/ 1/ 0	2 60.0	0.158
1/ 1/ 0	3 5.0	0.127
1/ 1/ 0	3 10.0	0.099
1/ 1/ 0	3 15.0	0.074
1/ 1/ 0	3 20.0	0.052
1/ 1/ 0	3 25.0	0.033
1/ 1/ 0	3 30.0	0.018
1/ 1/ 0	3 35.0	0.006
1/ 1/ 0	3 40.0	0.000

FLOW WT'D MEANS 0.252

FLOW WT'D STD-DEVS 3.216

TOTAL LOADS 4541.185 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 108

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.639
1/ 1/ 0	1 5.0	3.042
1/ 1/ 0	1 10.0	3.917
1/ 1/ 0	1 15.0	4.208
1/ 1/ 0	1 20.0	4.787
1/ 1/ 0	1 25.0	4.999
1/ 1/ 0	1 30.0	5.198
1/ 1/ 0	1 35.0	5.502
1/ 1/ 0	1 40.0	5.885
1/ 1/ 0	1 45.0	6.328
1/ 1/ 0	1 50.0	6.802
1/ 1/ 0	1 55.0	7.088
1/ 1/ 0	2 0.0	7.375
1/ 1/ 0	2 5.0	7.419
1/ 1/ 0	2 10.0	7.429
1/ 1/ 0	2 15.0	7.407
1/ 1/ 0	2 20.0	7.352
1/ 1/ 0	2 25.0	7.267
1/ 1/ 0	2 30.0	7.155
1/ 1/ 0	2 35.0	7.016
1/ 1/ 0	2 40.0	6.855
1/ 1/ 0	2 45.0	6.675
1/ 1/ 0	2 50.0	6.477
1/ 1/ 0	2 55.0	6.266
1/ 1/ 0	2 60.0	6.042
1/ 1/ 0	3 5.0	5.809
1/ 1/ 0	3 10.0	5.569
1/ 1/ 0	3 15.0	5.324
1/ 1/ 0	3 20.0	5.076
1/ 1/ 0	3 25.0	4.826
1/ 1/ 0	3 30.0	4.576
1/ 1/ 0	3 35.0	4.327
1/ 1/ 0	3 40.0	4.081
1/ 1/ 0	3 45.0	3.840
1/ 1/ 0	3 50.0	3.603
1/ 1/ 0	3 55.0	3.372
1/ 1/ 0	3 60.0	3.149
1/ 1/ 0	4 5.0	2.933
1/ 1/ 0	4 10.0	2.726
1/ 1/ 0	4 15.0	2.529
1/ 1/ 0	4 20.0	2.343
1/ 1/ 0	4 25.0	2.168
1/ 1/ 0	4 30.0	2.005
1/ 1/ 0	4 35.0	1.856
1/ 1/ 0	4 40.0	1.723
1/ 1/ 0	4 45.0	1.608
1/ 1/ 0	4 50.0	1.513
1/ 1/ 0	4 55.0	1.426
1/ 1/ 0	5 0.0	1.345

FLOW WT'D MEANS 3.781

FLOW WT'D STD-DEVS	35.212
TOTAL LOADS	68056.945 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 109

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.752
1/ 1/ 0	1 5.0	3.545
1/ 1/ 0	1 10.0	4.427
1/ 1/ 0	1 15.0	4.562
1/ 1/ 0	1 20.0	5.008
1/ 1/ 0	1 25.0	4.996
1/ 1/ 0	1 30.0	4.971
1/ 1/ 0	1 35.0	5.075
1/ 1/ 0	1 40.0	5.270
1/ 1/ 0	1 45.0	5.533
1/ 1/ 0	1 50.0	5.827
1/ 1/ 0	1 55.0	5.902
1/ 1/ 0	2 0.0	5.992
1/ 1/ 0	2 5.0	5.816
1/ 1/ 0	2 10.0	5.637
1/ 1/ 0	2 15.0	5.453
1/ 1/ 0	2 20.0	5.263
1/ 1/ 0	2 25.0	5.068
1/ 1/ 0	2 30.0	4.869
1/ 1/ 0	2 35.0	4.666
1/ 1/ 0	2 40.0	4.460
1/ 1/ 0	2 45.0	4.252
1/ 1/ 0	2 50.0	4.044
1/ 1/ 0	2 55.0	3.836
1/ 1/ 0	2 60.0	3.630
1/ 1/ 0	3 5.0	3.425
1/ 1/ 0	3 10.0	3.223
1/ 1/ 0	3 15.0	3.025
1/ 1/ 0	3 20.0	2.830
1/ 1/ 0	3 25.0	2.641
1/ 1/ 0	3 30.0	2.456
1/ 1/ 0	3 35.0	2.277
1/ 1/ 0	3 40.0	2.104
1/ 1/ 0	3 45.0	1.938
1/ 1/ 0	3 50.0	1.779
1/ 1/ 0	3 55.0	1.627
1/ 1/ 0	3 60.0	1.482
1/ 1/ 0	4 5.0	1.346
1/ 1/ 0	4 10.0	1.219
1/ 1/ 0	4 15.0	1.101
1/ 1/ 0	4 20.0	0.992
1/ 1/ 0	4 25.0	0.893
1/ 1/ 0	4 30.0	0.806
1/ 1/ 0	4 35.0	0.731
1/ 1/ 0	4 40.0	0.670
1/ 1/ 0	4 45.0	0.628
1/ 1/ 0	4 50.0	0.597
1/ 1/ 0	4 55.0	0.569
1/ 1/ 0	5 0.0	0.544

FLOW WT'D MEANS 2.629

FLOW WT'D STD-DEVS 25.874

TOTAL LOADS 47327.551
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 110

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		25.874
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 111

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		25.874
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 112

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 60.0	0.000
1/ 1/ 0	1 5.0	0.000
1/ 1/ 0	1 10.0	0.000
1/ 1/ 0	1 15.0	0.001
1/ 1/ 0	1 20.0	0.001
1/ 1/ 0	1 25.0	0.002
1/ 1/ 0	1 30.0	0.003
1/ 1/ 0	1 35.0	0.003
1/ 1/ 0	1 40.0	0.004
1/ 1/ 0	1 45.0	0.005
1/ 1/ 0	1 50.0	0.006
1/ 1/ 0	1 55.0	0.007
1/ 1/ 0	2 0.0	0.008
1/ 1/ 0	2 5.0	0.009
1/ 1/ 0	2 10.0	0.010
1/ 1/ 0	2 15.0	0.011
1/ 1/ 0	2 20.0	0.011
1/ 1/ 0	2 25.0	0.012
1/ 1/ 0	2 30.0	0.013
1/ 1/ 0	2 35.0	0.014
1/ 1/ 0	2 40.0	0.014
1/ 1/ 0	2 45.0	0.015
1/ 1/ 0	2 50.0	0.015
1/ 1/ 0	2 55.0	0.015
1/ 1/ 0	2 60.0	0.016
1/ 1/ 0	3 5.0	0.016
1/ 1/ 0	3 10.0	0.016
1/ 1/ 0	3 15.0	0.016
1/ 1/ 0	3 20.0	0.016
1/ 1/ 0	3 25.0	0.016
1/ 1/ 0	3 30.0	0.016
1/ 1/ 0	3 35.0	0.016
1/ 1/ 0	3 40.0	0.016
1/ 1/ 0	3 45.0	0.016
1/ 1/ 0	3 50.0	0.016
1/ 1/ 0	3 55.0	0.016
1/ 1/ 0	3 60.0	0.016
1/ 1/ 0	4 5.0	0.016
1/ 1/ 0	4 10.0	0.016
1/ 1/ 0	4 15.0	0.016
1/ 1/ 0	4 20.0	0.016
1/ 1/ 0	4 25.0	0.016
1/ 1/ 0	4 30.0	0.016
1/ 1/ 0	4 35.0	0.016
1/ 1/ 0	4 40.0	0.016
1/ 1/ 0	4 45.0	0.016
1/ 1/ 0	4 50.0	0.016
1/ 1/ 0	4 55.0	0.016
1/ 1/ 0	5 0.0	0.016

FLOW WT'D MEANS 0.010

FLOW WT'D STD-DEVS	0.092
TOTAL LOADS	174.787 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 113

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 114

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 116

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 117

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 118

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 119

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 120

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 121

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

* * * * * ARRANGEMENT OF SUBCATCHMENTS AND GUTTERS/PIPE * * * * *

GUTTER OR PIPE	TRIBUTARY GUTTER/PIPE		TRIBUTARY SUBAREA
150			50
151	150		51
152			52
153	151	152	53
154			54
155	153	154	55
156	155		56
157	156		57
158			58
159	157	158	59
160	159		60

INLET	TRIBUTARY GUTTERS AND/OR PIPES	TRIBUTARY SUBAREAS
0	160	

HYDROGRAPHS WILL BE STORED FOR THE FOLLOWING 1 INLETS

0

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.....QUALITY SIMULATION NOT INCLUDED IN THIS RUN  .....


* * *  CARD GROUP M1  * * *


TOTAL NUMBER OF PRINTED GUTTERS/INLETS...NPRNT..   11
NUMBER OF TIME STEPS BETWEEN PRINTINGS..INTERV..    1
STARTING AND STOPPING PRINTOUT DATES............     0     0
                                                     0     0
                                                     0     0
                                                     0     0
                                                     0     0


* * *  CARD GROUP M2 * * *


GUTTER INLET PRINT CARDS......  150   151   152   153   154   155   156   157   158   159
                                160


MESSAGE FROM SUBROUTINE HYDRO...     THE PLOTTING INTERVAL FOR SUBROUTINE HCURVE IS..     1 TIME STEPS


END OF TIME STEP DO-LOOP IN RUNOFF.

FINAL DATE (MO/DAY/YEAR) =  1/ 1/ 0
FINAL JULIAN DATE =   1
FINAL TIME OF DAY =  5.0000 HOURS.
FINAL RUNNING TIME =  0.1800000E+05 SECONDS.
TOTAL NUMBER OF TIME STEPS =     60
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CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 122

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 123

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 124

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		0.092
TOTAL LOADS		0.000 CUB-FT

* * * * * RUNOFF SIMULATION ENDED NORMALLY * * * * *

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ENDPROGRAM          BLOCK CALLED.

* * * * *  STORMWATER SIMULATION ENDED NORMALLY  * * * * *
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VAX/VMS SRM MIDL10 4-APR-1985 14:23 TXA5: 4-APR-1985 14:23 DISK_5:[17301.13910050.EXRUN.MIDL]MIDL10.OUT;1 VAX/VMS

VAX/VMS SRM MIDL10 4-APR-1985 14:23 TXA5: 4-APR-1985 14:23 DISK_5:[17301.13910050.EXRUN.MIDL]MIDL10.OUT;1 VAX/VMS
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 SSSS  RRRR   M   M
S      R   R  MM MM
S      R   R  M M M
 SSS   RRRR   M   M
    S  R R    M   M
    S  R  R   M   M
SSSS   R   R  M   M
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MM      MM    IIIIII    DDDDDDDD    LL              11        000000
MM      MM    IIIIII    DDDDDDDD    LL              11        000000
MMMM  MMMM      II      DD      DD  LL            1111      00      00
MMMM  MMMM      II      DD      DD  LL            1111      00      00
MM  MM  MM      II      DD      DD  LL              11      00    0000
MM  MM  MM      II      DD      DD  LL              11      00    0000
MM      MM      II      DD      DD  LL              11      00  00  00
MM      MM      II      DD      DD  LL              11      00  00  00
MM      MM      II      DD      DD  LL              11      0000    00
MM      MM      II      DD      DD  LL              11      0000    00
MM      MM      II      DD      DD  LL              11      00      00      ....
MM      MM      II      DD      DD  LL              11      00      00      ....
MM      MM    IIIIII    DDDDDDDD    LLLLLLLLLL    111111      000000      ....
MM      MM    IIIIII    DDDDDDDD    LLLLLLLLLL    111111      000000      ....
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00      00  UU      UU      TT          ;;;;      1111
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00      00  UU      UU      TT          ;;;;        11
00      00  UU      UU      TT          ;;;;        11
00      00  UU      UU      TT          ;;;;        11
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00      00  UU      UU      TT            ;;        11
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 SSSS  RRRR   M   M
S      R   R  MM MM
S      R   R  M M M
 SSS   RRRR   M   M
    S  R R    M   M
    S  R  R   M   M
SSSS   R   R  M   M
```

VAX/VMS SRM MIDL10 4-APR-1985 14:23 TXA5: 4-APR-1985 14:23 DISK_5:[17301.13910050.EXRUN.MIDL]MIDL10.OUT;1 VAX/VMS
VAX/VMS SRM MIDL10 4-APR-1985 14:23 TXA5: 4-APR-1985 14:23 DISK_5:[17301.13910050.EXRUN.MIDL]MIDL10.OUT;1 VAX/VMS
VAX/VMS SRM MIDL10 4-APR-1985 14:23 TXA5: 4-APR-1985 14:23 DISK_5:[17301.13910050.EXRUN.MIDL]MIDL10.OUT;1 VAX/VMS

ENVIRONMENTAL PROTECTION AGENCY - STORM WATER MANAGEMENT MODEL *** RELEASE III.3 ***

DEVELOPED BY METCALF & EDDY, INC.

UNIVERSITY OF FLORIDA

WATER RESOURCES ENGINEERS, INC.

SEPTEMBER 1970

UPDATED BY THE UNIVERSITY OF FLORIDA

MARCH 1975

NOVEMBER 1977

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AUGUST 1983

THIS IS A NEW RELEASE OF THE SWMM. IF ANY PROBLEMS

OCCUR IN RUNNING THIS MODEL PLEASE CONTACT WAYNE

HUBER AT THE UNIVERSITY OF FLORIDA.

PHONE 1-904-392-0846

DISK OR TAPE ASSIGNMENTS FOR BLOCKS CALLED. THEY ARE IN THE SAME ORDER IN WHICH THE BLOCKS ARE CALLED.

JIN(1)	JIN(2)	JIN(3)	JIN(4)	JIN(5)	JIN(6)	JIN(7)	JIN(8)	JIN(9)	JIN(10)
0	8	9	0	0	0	0	0	0	0

JOUT(1)	JOUT(2)	JOUT(3)	JOUT(4)	JOUT(5)	JOUT(6)	JOUT(7)	JOUT(8)	JOUT(9)	JOUT(10)
8	9	10	0	0	0	0	0	0	0

SCRATCH DISKS OR TAPES WHICH CAN BE USED BY ANY BLOCK CALLED.

NSCRAT(1)	NCSRAT(2)	NSCRAT(3)	NSCRAT(4)	NSCRAT(5)
1	2	0	0	0

RUNOFF BLOCK CALLED.

ENTRY MADE TO RUNOFF BLOCK

RUNOFF BLOCK WAS LAST UPDATED BY THE UNIVERSITY OF FLORIDA JANUARY 1983.

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

SECTIONS RUNNING OFF TO RIVER - 10-YEAR STORM, EXISTING CONDITIONS

CONTINUOUS SWMM PARAMETER - ICRAIN..... 0

SNOWMELT PARAMETER - ISNOW..... 0

NUMBER OF RAIN GAGES - NRGAG..... 1

HORTON IFILTRATION EQUATION USED - INFILM..... 0

QUALITY IS NOT SIMULATED - KWALTY..... 0

DEFAULT EVAPORATION RATE USED - IVAP..... 0

HOUR OF DAY AT START OF STORM - NHR..... 0

MINUTE OF HOUR AT START OF STORM - NMN..... 0

TIME TZERO AT START OF STORM (HOURS)..... 0.000

USE U.S. CUSTOMARY UNITS FOR MOST I/O - METRIC... 0

INPUT NUMBER OF TIME STEPS - NSTEP..... 60

INTEGRATION TIME INTERVAL (MINUTES) - DELT..... 5.00

MONTH, DAY, YEAR OF START OF STORM IS: 1/ 1/ 0

PERCENT OF IMPERVIOUS AREA WITH ZERO DETENTION DEPTH 25.0

**HORTON INFILTRATION MODEL BEING USED
RATE FOR REGENERATION OF INFILTRATION = REGEN * DECAY
DECAY IS READ IN FOR EACH SUBCATCHMENT
REGEN = ... 0.01000

FOR 24 RAINFALL STEPS. THE TIME INTERVAL IS 5.00 MINUTES UNITS ARE IN/HR.

FOR RAINGAGE NUMBER 1. RAINFALL HISTORY IS

0.14	0.14	0.26	0.26	0.26	0.44	0.44	0.50	0.80	1.31
2.05	4.40	3.30	1.44	0.77	0.72	0.36	0.26	0.26	0.26
0.26	0.25	0.13	0.13						

CARD GROUP F1

EVAPORATION RATE (IN/DAY).

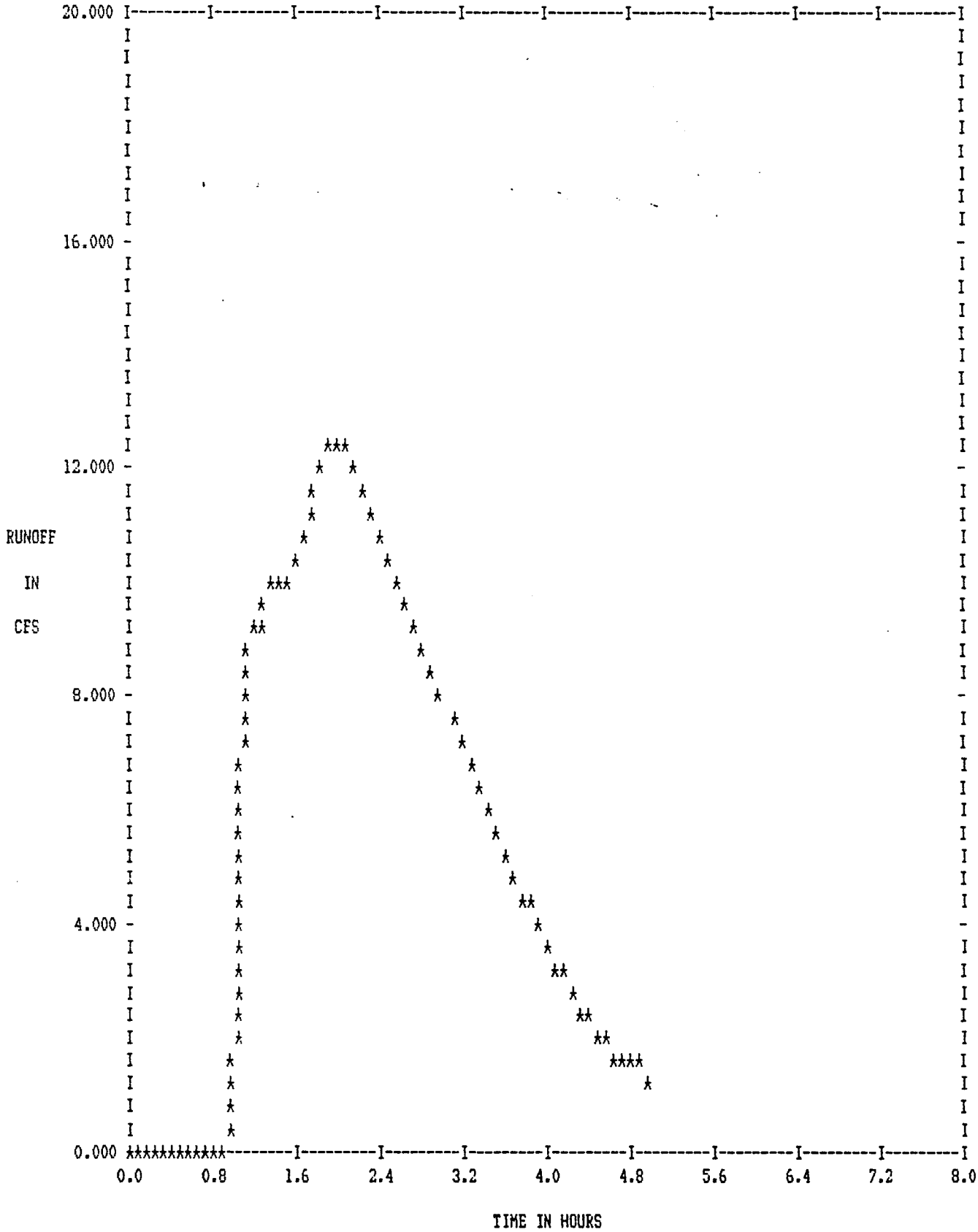
JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

***** G U T T E R A N D P I P E D A T A *****

GUTTER NUMBER	GUTTER CONNECTION	WIDTH (FT)	LENGTH (FT)	SLOPE (FT/FT)	SIDE SLOPES L	SIDE SLOPES R	MANNING N	MAX DEPTH (FT)
1 $ 101	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
2 102	109	0.00	5280.0	0.0049	50.00	0.00	0.015	4.00
3 103	109	200.00	5850.0	0.0049	0.00	0.00	0.250	4.00
4 104	111	0.00	5220.0	0.0068	40.00	0.00	0.025	4.00
5 105	111	0.00	7820.0	0.0040	40.00	0.00	0.025	4.00
6 106	112	200.00	5400.0	0.0064	0.00	0.00	0.250	4.00
7 $ 107	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
8 $ 108	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
9 109	108	0.00	5680.0	0.0048	60.00	0.00	0.015	4.00
10 110	116	100.00	6400.0	0.0053	0.00	0.00	0.030	4.00
11 111	116	100.00	5280.0	0.0048	0.00	0.00	0.030	4.00
12 $ 112	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
13 $ 113	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
14 $ 114	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
15 116	118	200.00	5500.0	0.0047	0.00	0.00	0.300	4.00
16 $ 117	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
17 118	121	100.00	5250.0	0.0043	0.00	0.00	0.030	4.00
18 119	118	0.00	600.0	0.0020	40.00	0.00	0.020	4.00
19 $ 120	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
20 $ 121	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
21 $ 122	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
22 $ 123	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00
23 $ 124	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00

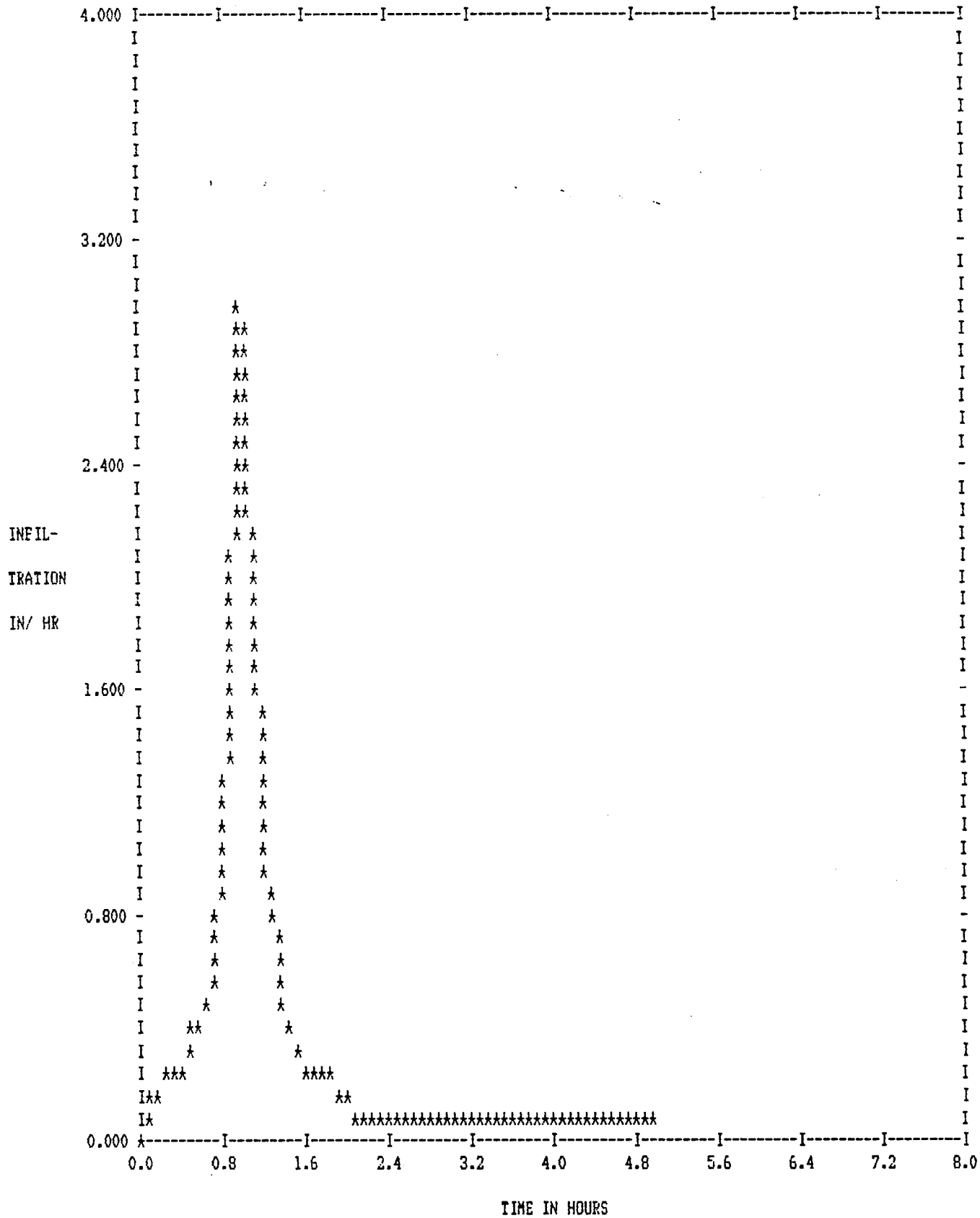
TOTAL NUMBER OF GUTTERS/PIPES, 23

ASTERISK (*) DENOTES CIRCULAR PIPE, DIAMETER=.WIDTH.
DOLLAR SIGN ($) DENOTES DUMMY GUTTER, USED TO OBTAIN PRINT OUTS ONLY.



INLET HYDROGRAPH INLETS 1

THE HYDROGRAPH IS THE SUM OF THE FLOW IN ALL INLETS



INFILTRATION VERSUS TIME INLETS 1

THE INFILTRATION PLOT IS THE ACTUAL INFILTRATION OVER THE PERVIOUS AREA ONLY

***** SUBCATCHMENT DATA *****

SUBCATCH-MENT NO.		GUTTER OR INLET	WIDTH (FT)	AREA (AC)	PERCENT IMPERV.	SLOPE (FT/FT)	RESISTANCE FACTOR IMPERV.	RESISTANCE FACTOR PERV.	DEPRES. STORAGE(IN) IMPERV.	DEPRES. STORAGE(IN) PERV.	INFILTRATION RATE(IN/HR) MAXIMUM	INFILTRATION RATE(IN/HR) MINIMUM	DECAY RATE (1/SEC)	GAGE NO.
1	1	101	4200.00	532.30	0.00	0.0069	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
2	2	102	2300.00	232.10	0.00	0.0067	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
3	3	103	5280.00	646.60	0.00	0.0065	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
4	4	104	10560.00	320.30	18.00	0.0065	0.015	0.200	0.030	0.100	4.50	0.10	0.00115	1
5	5	105	10560.00	322.40	9.00	0.0053	0.015	0.200	0.030	0.100	4.50	0.10	0.00115	1
6	6	106	3100.00	403.80	0.00	0.0049	0.015	0.300	0.030	0.100	5.00	0.10	0.00115	1
7	7	107	2000.00	245.10	0.00	0.0067	0.015	0.300	0.030	0.100	5.00	0.10	0.00115	1
8	8	108	4600.00	638.60	0.00	0.0042	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
9	9	109	5000.00	592.90	0.00	0.0050	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
10	10	110	2700.00	329.50	0.00	0.0060	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
11	11	111	5280.00	617.00	0.00	0.0054	0.015	0.300	0.030	0.100	6.00	0.10	0.00115	1
12	12	112	4000.00	447.90	0.00	0.0060	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
13	13	113	2950.00	160.00	0.00	0.0068	0.015	0.350	0.030	0.100	7.00	0.20	0.00115	1
14	14	114	7200.00	160.00	51.00	0.0068	0.015	0.200	0.030	0.100	4.50	0.20	0.00115	1
15	15	116	10480.00	640.00	11.00	0.0054	0.015	0.310	0.030	0.100	6.50	0.20	0.00115	1
16	16	116	4800.00	532.10	0.00	0.0047	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
17	17	117	1600.00	215.30	0.00	0.0054	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
18	18	118	3050.00	324.20	0.00	0.0047	0.015	0.350	0.030	0.100	7.00	0.20	0.00115	1
19	19	119	2900.00	321.00	5.00	0.0041	0.015	0.330	0.030	0.100	7.00	0.10	0.00115	1
20	20	120	1200.00	130.80	0.00	0.0042	0.015	0.350	0.030	0.100	6.50	0.35	0.00115	1
21	21	121	2500.00	283.60	0.00	0.0052	0.015	0.350	0.030	0.100	7.00	0.20	0.00115	1
22	22	122	2300.00	201.10	0.00	0.0051	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
23	23	123	4800.00	450.00	0.00	0.0053	0.015	0.350	0.030	0.100	7.00	0.35	0.00115	1
24	24	124	2700.00	150.20	0.00	0.0114	0.015	0.350	0.030	0.100	6.00	0.35	0.00115	1

TOTAL NUMBER OF SUBCATCHMENTS.. 24

TOTAL TRIBUTARY AREA (ACRES).... 8896.80

IMPERVIOUS AREA (ACRES)..... 254.72

PERVIOUS AREA (ACRES)..... 8642.08

TOTAL WIDTH (FEET)..... 106060.00

PERCENT IMPERVIOUSNESS..... 2.86

* * * * * ARRANGEMENT OF SUBCATCHMENTS AND GUTTERS/PIPE * * * * *

GUTTER OR PIPE	TRIBUTARY GUTTER/PIPE	TRIBUTARY SUBAREA
101		1
102		2
103		3
104		4
105		5
106		6
107		7
108	109	8
109	102 103	9
110		10
111	104 105	11
112	106	12
113		13
114		14
116	110 111	15 16
117		17
118	116 119	18
119		19
120		20
121	118	21
122		22
123		23
124		24

INLET	TRIBUTARY GUTTERS AND/OR PIPES	TRIBUTARY SUBAREAS
0	101 107 108 112 113	

HYDROGRAPHS WILL BE STORED FOR THE FOLLOWING 1 INLETS

0

```
.....QUALITY SIMULATION NOT INCLUDED IN THIS RUN .....


* * *  CARD GROUP M1  * * *

TOTAL NUMBER OF PRINTED GUTTERS/INLETS...NPRNT..   23
NUMBER OF TIME STEPS BETWEEN PRINTINGS..INTERV..    1
STARTING AND STOPPING PRINTOUT DATES............     0     0
                                                     0     0
                                                     0     0
                                                     0     0
                                                     0     0

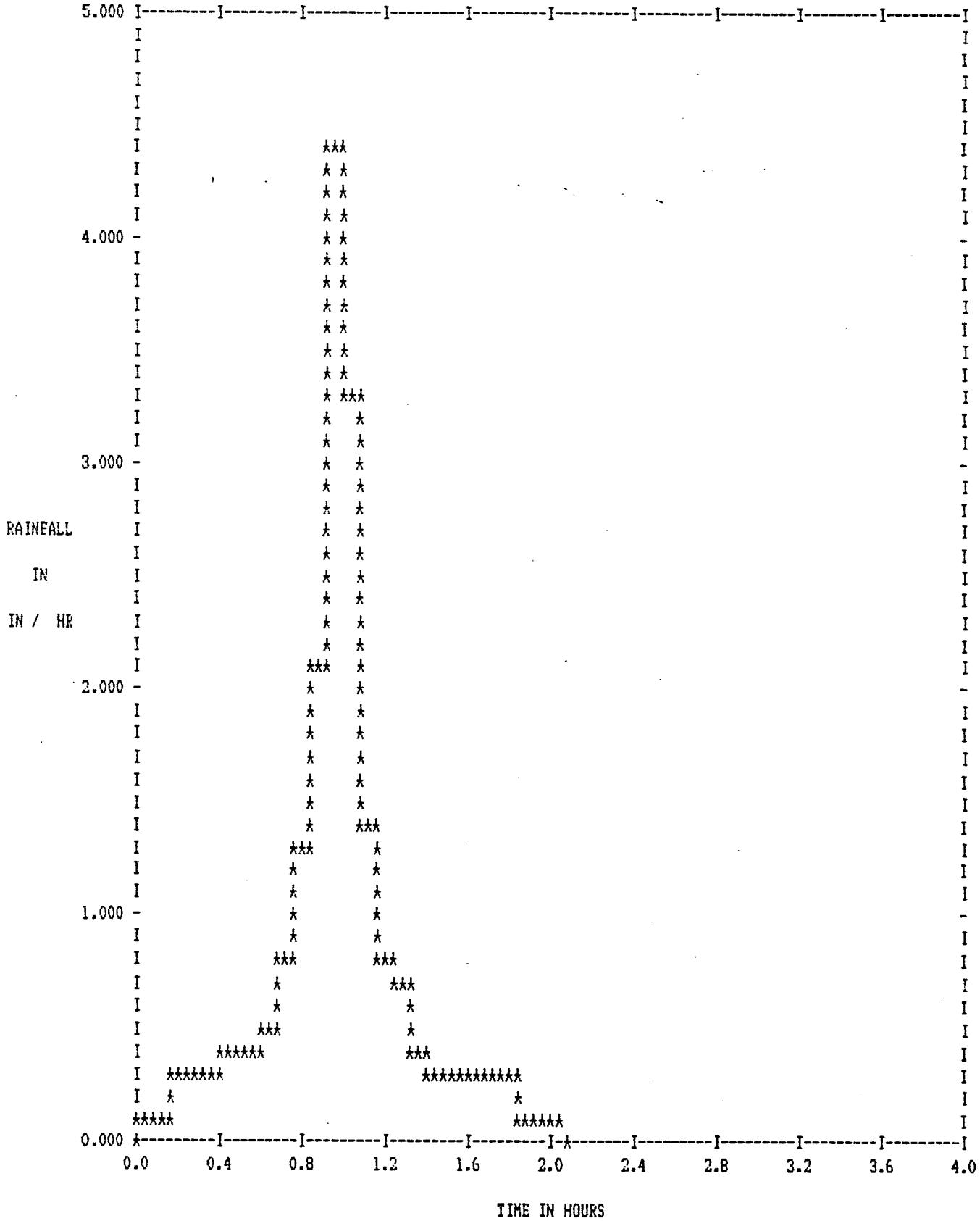

* * *  CARD GROUP M2 * * *

GUTTER INLET PRINT CARDS......  101   102   103   104   105   106   107   108   109   110
                                111   112   113   114   116   117   118   119   120   121
                                122   123   124


MESSAGE FROM SUBROUTINE HYDRO...     THE PLOTTING INTERVAL FOR SUBROUTINE HCURVE IS..     1 TIME STEPS


END OF TIME STEP DO-LOOP IN RUNOFF.

FINAL DATE (MO/DAY/YEAR) =  1/ 1/ 0
FINAL JULIAN DATE =   1
FINAL TIME OF DAY =  5.0000 HOURS.
FINAL RUNNING TIME =  0.1800000E+05 SECONDS.
TOTAL NUMBER OF TIME STEPS =     60
```



RAINFALL HYETOGRAPH INLETS 1

HYETOGRAPH FOR RAIN GAGE NUMBER 1

SAMPLE SWMM OUTPUT

AREA FROM BELL ROAD TO NORTHERN AVENUE

VAX/VMS SRM CACT10 5-APR-1985 15:56 TXA5: 5-APR-1985 15:56 DISK 5:[17301.13910050.EXRUN.CACT]CACT10.OUT;1 VAX/VMS
VAX/VMS SRM CACT10 5-APR-1985 15:56 TXA5: 5-APR-1985 15:56 DISK 5:[17301.13910050.EXRUN.CACT]CACT10.OUT;1 VAX/VMS
VAX/VMS SRM CACT10 5-APR-1985 15:56 TXA5: 5-APR-1985 15:56 DISK 5:[17301.13910050.EXRUN.CACT]CACT10.OUT;1 VAX/VMS

```
 SSSS  RRRR   M   M
S      R   R  MM MM
S      R   R  M M M
 SSS   RRRR   M   M
    S  R R    M   M
    S  R  R   M   M
SSSS   R   R  M   M


  CCCCCCCC   AAAAAA     CCCCCCCC  TTTTTTTTTT     11       000000
  CCCCCCCC   AAAAAA     CCCCCCCC  TTTTTTTTTT     11       000000
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CC         AA      AA  CC            TT       1111     00      00
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CC         AA      AA  CC            TT         11     00  00  00
CC         AA      AA  CC            TT         11     00  00  00
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CC         AAAAAAAAAA  CC            TT         11     0000    00
CC         AA      AA  CC            TT         11     00      00      ....
CC         AA      AA  CC            TT         11     00      00      ....
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  000000   UUUUUUUUUU     TT        ::       111111


 SSSS  RRRR   M   M
S      R   R  MM MM
S      R   R  M M M
 SSS   RRRR   M   M
    S  R R    M   M
    S  R  R   M   M
SSSS   R   R  M   M
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VAX/VMS SRM CACT10 5-APR-1985 15:56 TXA5: 5-APR-1985 15:56 DISK 5:[17301.13910050.EXRUN.CACT]CACT10.OUT;1 VAX/VMS
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VAX/VMS SRM CACT10 5-APR-1985 15:56 TXA5: 5-APR-1985 15:56 DISK 5:[17301.13910050.EXRUN.CACT]CACT10.OUT;1 VAX/VMS

ENVIRONMENTAL PROTECTION AGENCY - STORM WATER MANAGEMENT MODEL *** RELEASE III.3 ***

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DISK OR TAPE ASSIGNMENTS FOR BLOCKS CALLED. THEY ARE IN THE SAME ORDER IN WHICH THE BLOCKS ARE CALLED.

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0	8	9	0	0	0	0	0	0	0

JOUT(1)	JOUT(2)	JOUT(3)	JOUT(4)	JOUT(5)	JOUT(6)	JOUT(7)	JOUT(8)	JOUT(9)	JOUT(10)
8	9	10	0	0	0	0	0	0	0

SCRATCH DISKS OR TAPES WHICH CAN BE USED BY ANY BLOCK CALLED.

NSCRAT(1)	NCSRAT(2)	NSCRAT(3)	NSCRAT(4)	NSCRAT(5)
1	2	0	0	0

RUNOFF BLOCK CALLED.

ENTRY MADE TO RUNOFF BLOCK

RUNOFF BLOCK WAS LAST UPDATED BY THE UNIVERSITY OF FLORIDA JANUARY 1983.

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

CONTINUOUS SWMM PARAMETER - ICRAIN..... 0

SNOWMELT PARAMETER - ISNOW..... 0

NUMBER OF RAIN GAGES - NRGAG..... 1

HORTON IFILTRATION EQUATION USED - INFILM..... 0

QUALITY IS NOT SIMULATED - KWALTY..... 0

DEFAULT EVAPORATION RATE USED - IVAP..... 0

HOUR OF DAY AT START OF STORM - NHR..... 0

MINUTE OF HOUR AT START OF STORM - NMN..... 0

TIME TZERO AT START OF STORM (HOURS)..... 0.000

USE U.S. CUSTOMARY UNITS FOR MOST I/O - METRIC... 0

INPUT NUMBER OF TIME STEPS - NSTEP..... 60

INTEGRATION TIME INTERVAL (MINUTES) - DELT..... 5.00

MONTH, DAY, YEAR OF START OF STORM IS: 1/ 1/ 0

PERCENT OF IMPERVIOUS AREA WITH ZERO DETENTION DEPTH 25.0

**HORTON INFILTRATION MODEL BEING USED
RATE FOR REGENERATION OF INFILTRATION = REGEN * DECAY
DECAY IS READ IN FOR EACH SUBCATCHMENT
REGEN = ... 0.01000

FOR 24 RAINFALL STEPS. THE TIME INTERVAL IS 5.00 MINUTES UNITS ARE IN/HR.

FOR RAINGAGE NUMBER 1. RAINFALL HISTORY IS

0.14	0.14	0.26	0.26	0.26	0.44	0.44	0.50	0.80	1.31
2.05	4.40	3.30	1.44	0.77	0.72	0.36	0.26	0.26	0.26
0.26	0.25	0.13	0.13						

CARD GROUP F1

EVAPORATION RATE (IN/DAY).

JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

★★★★★ G U T T E R A N D P I P E D A T A ★★★★★

GUTTER NUMBER	GUTTER CONNECTION		WIDTH (FT)	LENGTH (FT)	SLOPE (FT/FT)	SIDE SLOPES L	R	MANNING N	MAX DEPTH (FT)
1	150	151	0.00	2640.0	0.0034	40.00	0.00	0.015	4.00
2	151	153	0.00	2640.0	0.0040	60.00	0.00	0.015	4.00
3	152	153	0.00	2640.0	0.0027	40.00	0.00	0.015	4.00
4	153	155	0.00	2640.0	0.0036	60.00	0.00	0.015	4.00
5	154	155	0.00	2640.0	0.0036	40.00	0.00	0.015	4.00
6	155	156	0.00	2640.0	0.0019	60.00	0.00	0.015	4.00
7	156	157	0.00	2640.0	0.0029	60.00	0.00	0.015	4.00
8	157	159	0.00	2640.0	0.0032	60.00	0.00	0.015	4.00
9	158	159	10.00	3850.0	0.0028	1.00	1.00	0.015	3.00
10	159	160	0.00	2150.0	0.0042	60.00	0.00	0.025	4.00
11	$ 160	0	0.00	0.0	0.0000	0.00	0.00	0.000	0.00

TOTAL NUMBER OF GUTTERS/PIPES. 11

ASTERISK (★) DENOTES CIRCULAR PIPE. DIAMETER=.WIDTH.
DOLLAR SIGN ($) DENOTES DUMMY GUTTER. USED TO OBTAIN PRINT OUTS ONLY.

★★★★★ S U B C A T C H M E N T D A T A ★★★★★

SUBCATCH-MENT NO.		GUTTER OR INLET	WIDTH (FT)	AREA (AC)	PERCENT IMPERV.	SLOPE (FT/FT)	RESISTANCE FACTOR IMPERV.	RESISTANCE FACTOR PERV.	DEPRES. STORAGE(IN) IMPERV.	DEPRES. STORAGE(IN) PERV.	INFILTRATION RATE(IN/HR) MAXIMUM	INFILTRATION RATE(IN/HR) MINIMUM	DECAY RATE (1/SEC)	GAGE NO.
1	50	150	8400.00	160.00	35.00	0.0029	0.015	0.250	0.030	0.100	5.00	0.10	0.00115	1
2	51	151	7670.00	160.00	19.00	0.0036	0.015	0.280	0.030	0.100	6.00	0.10	0.00115	1
3	52	152	3550.00	160.00	0.00	0.0049	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
4	53	153	7560.00	160.00	45.00	0.0033	0.015	0.230	0.030	0.100	5.00	0.10	0.00115	1
5	54	154	7480.00	160.00	29.00	0.0038	0.015	0.270	0.030	0.100	5.50	0.10	0.00115	1
6	55	155	7690.00	160.00	18.00	0.0044	0.015	0.300	0.030	0.100	6.00	0.10	0.00115	1
7	56	156	9200.00	160.00	28.00	0.0031	0.015	0.250	0.030	0.100	4.50	0.10	0.00115	1
8	57	157	6880.00	124.60	14.00	0.0041	0.015	0.260	0.030	0.100	4.50	0.10	0.00115	1
9	58	158	1450.00	33.70	0.00	0.0041	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
10	59	159	3250.00	151.40	0.00	0.0039	0.015	0.350	0.030	0.100	7.00	0.10	0.00115	1
11	60	160	1720.00	59.60	8.00	0.0046	0.015	0.290	0.030	0.100	4.00	0.10	0.00115	1

TOTAL NUMBER OF SUBCATCHMENTS.. 11

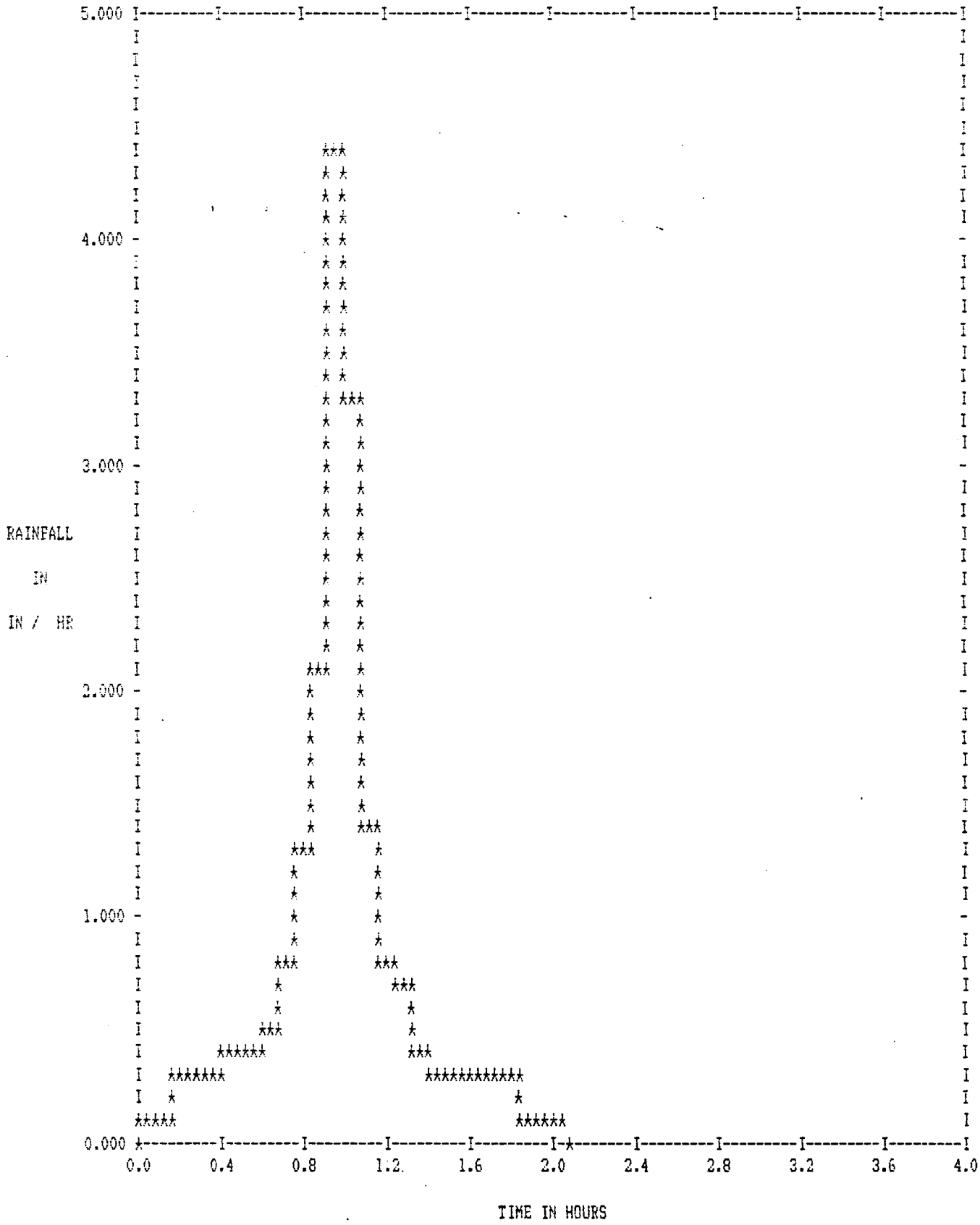
TOTAL TRIBUTARY AREA (ACRES).... 1489.30

IMPERVIOUS AREA (ACRES)..... 300.61

PERVIOUS AREA (ACRES)..... 1188.69

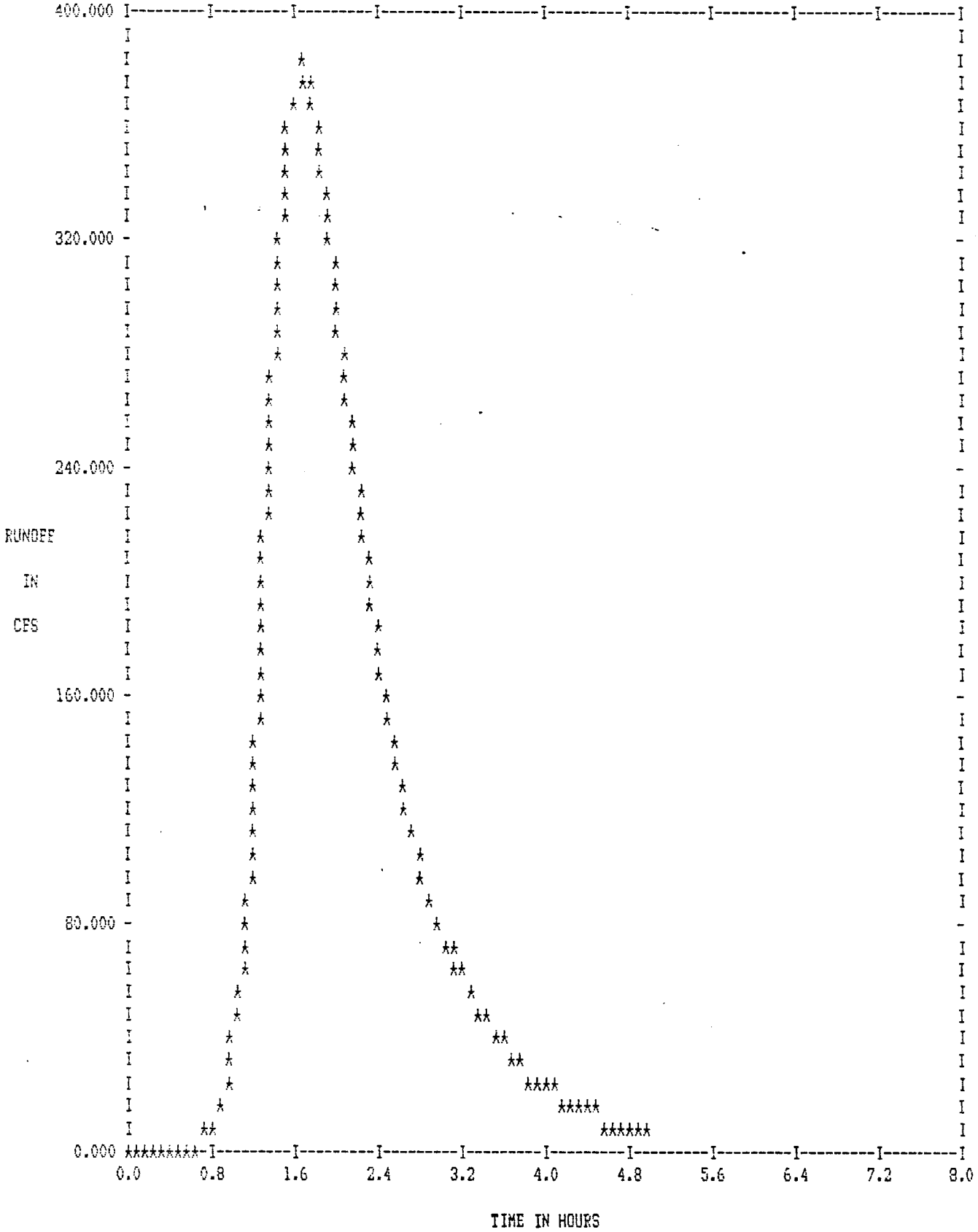
TOTAL WIDTH (FEET)..... 64850.00

PERCENT IMPERVIOUSNESS..... 20.18



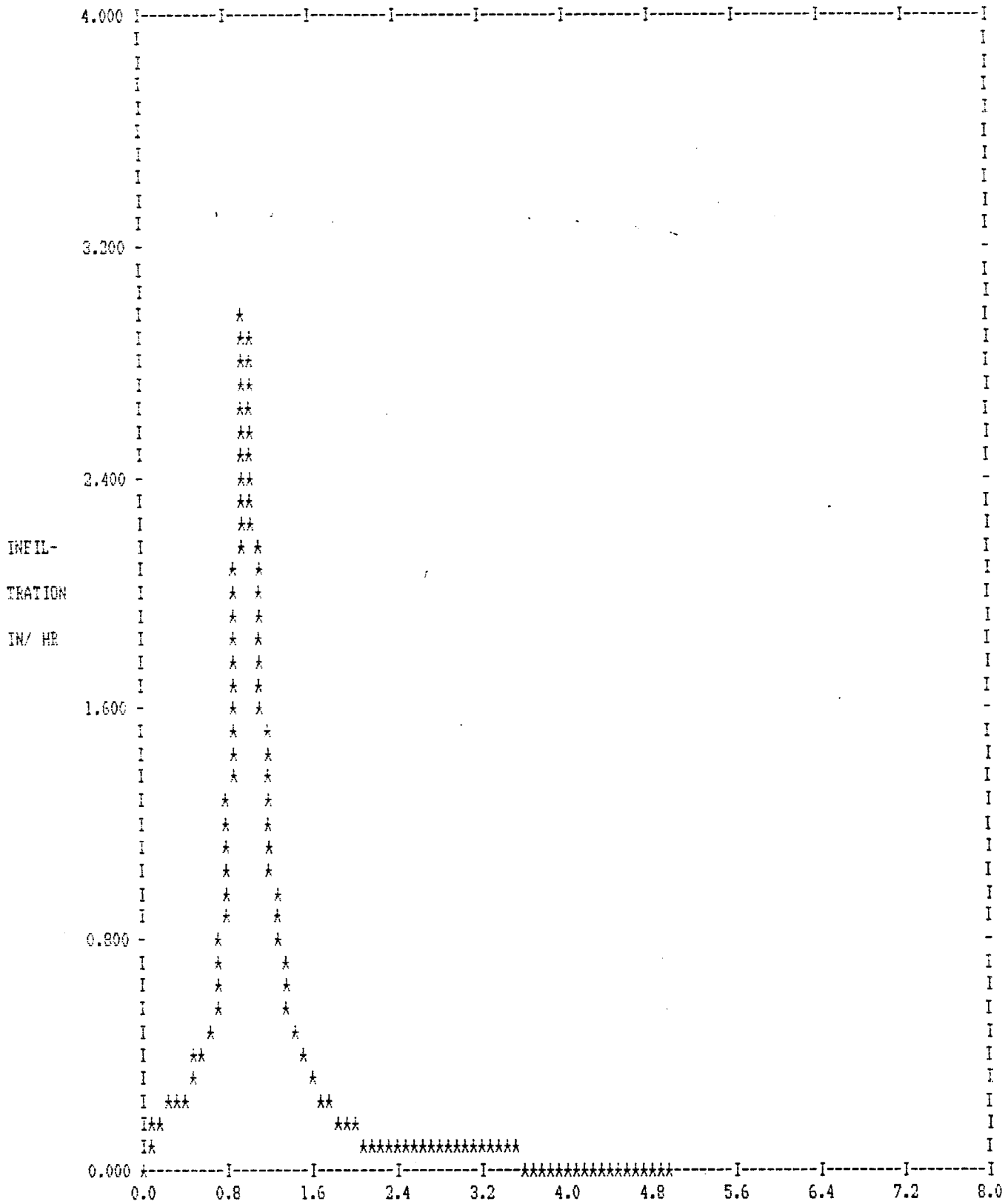
RAINFALL HYETOGRAPH INLETS 1

HYETOGRAPH FOR RAIN GAGE NUMBER 1



INLET HYDROGRAPH INLETS 1

THE HYDROGRAPH IS THE SUM OF THE FLOW IN ALL INLETS



INFILTRATION VERSUS TIME INLETS 1

THE INFILTRATION PLOT IS THE ACTUAL INFILTRATION OVER THE PERVIOUS AREA ONLY

$ $ $ --- CONTINUITY CHECK FOR QUANTITY --- $ $ $

	CUBIC FEET	INCHES OVER TOTAL BASIN
TOTAL PRECIPITATION (RAIN PLUS SNOW)	8.622823E+06	1.595
TOTAL INFILTRATION	6.684437E+06	1.236
TOTAL EVAPORATION	8.199570E+04	0.015
TOTAL GUTTER/PIPE/SUBCAT FLOW AT INLETS	1.779075E+06	0.329
TOTAL WATER REMAINING IN GUTTER/PIPES	3.658785E+04	0.007
TOTAL WATER REMAINING IN SURFACE STORAGE	6.082041E+04	0.011
INFILTRATION OVER THE PERVIOUS AREA...	6.684437E+06	1.549
INFILTRATION + EVAPORATION + SNOW REMOVAL + INLET FLOW + WATER REMAINING IN GUTTER/PIPES + WATER REMAINING IN SURFACE STORAGE + WATER REMAINING IN SNOW COVER.....	8.642916E+06	1.599

THE ERROR IN CONTINUITY IS CALCULATED AS

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*****************************************
* PRECIPITATION + INITIAL SNOW COVER  *
*      - INFILTRATION -               *
*EVAPORATION - SNOW REMOVAL -         *
*INLET FLOW - WATER IN GUTTER/PIPES - *
*WATER IN SURFACE STORAGE -           *
*WATER REMAINING IN SNOW COVER        *
*-------------------------------------*
* PRECIPITATION + INITIAL SNOW COVER  *
*****************************************
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ERROR..... -0.233 PERCENT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 150

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.099
1/ 1/ 0	0 10.0	0.293
1/ 1/ 0	0 15.0	1.246
1/ 1/ 0	0 20.0	3.223
1/ 1/ 0	0 25.0	5.465
1/ 1/ 0	0 30.0	10.265
1/ 1/ 0	0 35.0	14.499
1/ 1/ 0	0 40.0	18.917
1/ 1/ 0	0 45.0	28.501
1/ 1/ 0	0 50.0	47.963
1/ 1/ 0	0 55.0	82.274
1/ 1/ 0	0 60.0	187.259
1/ 1/ 0	1 5.0	189.303
1/ 1/ 0	1 10.0	123.026
1/ 1/ 0	1 15.0	79.832
1/ 1/ 0	1 20.0	61.389
1/ 1/ 0	1 25.0	43.409
1/ 1/ 0	1 30.0	32.181
1/ 1/ 0	1 35.0	26.161
1/ 1/ 0	1 40.0	22.707
1/ 1/ 0	1 45.0	20.653
1/ 1/ 0	1 50.0	19.216
1/ 1/ 0	1 55.0	16.013
1/ 1/ 0	2 0.0	13.951
1/ 1/ 0	2 5.0	10.383
1/ 1/ 0	2 10.0	7.997
1/ 1/ 0	2 15.0	6.316
1/ 1/ 0	2 20.0	5.083
1/ 1/ 0	2 25.0	4.147
1/ 1/ 0	2 30.0	3.415
1/ 1/ 0	2 35.0	2.831
1/ 1/ 0	2 40.0	2.355
1/ 1/ 0	2 45.0	1.962
1/ 1/ 0	2 50.0	1.634
1/ 1/ 0	2 55.0	1.357
1/ 1/ 0	2 60.0	1.123
1/ 1/ 0	3 5.0	0.925
1/ 1/ 0	3 10.0	0.759
1/ 1/ 0	3 15.0	0.622
1/ 1/ 0	3 20.0	0.512
1/ 1/ 0	3 25.0	0.430
1/ 1/ 0	3 30.0	0.374
1/ 1/ 0	3 35.0	0.326
1/ 1/ 0	3 40.0	0.283
1/ 1/ 0	3 45.0	0.246
1/ 1/ 0	3 50.0	0.213
1/ 1/ 0	3 55.0	0.185
1/ 1/ 0	3 60.0	0.159
1/ 1/ 0	4 5.0	0.137
1/ 1/ 0	4 10.0	0.117
1/ 1/ 0	4 15.0	0.099

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 150

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	0.083
1/ 1/ 0	4 25.0	0.069
1/ 1/ 0	4 30.0	0.056
1/ 1/ 0	4 35.0	0.045
1/ 1/ 0	4 40.0	0.036
1/ 1/ 0	4 45.0	0.027
1/ 1/ 0	4 50.0	0.020
1/ 1/ 0	4 55.0	0.014
1/ 1/ 0	5 0.0	0.009

FLOW WT'D MEANS 19.368

FLOW WT'D STD-DEVS 334.745

TOTAL LOADS 330628.250
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 151

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.100
1/ 1/ 0	0 10.0	0.286
1/ 1/ 0	0 15.0	1.229
1/ 1/ 0	0 20.0	3.169
1/ 1/ 0	0 25.0	5.401
1/ 1/ 0	0 30.0	10.209
1/ 1/ 0	0 35.0	14.886
1/ 1/ 0	0 40.0	20.315
1/ 1/ 0	0 45.0	31.076
1/ 1/ 0	0 50.0	52.152
1/ 1/ 0	0 55.0	89.721
1/ 1/ 0	0 60.0	198.756
1/ 1/ 0	1 5.0	231.915
1/ 1/ 0	1 10.0	198.464
1/ 1/ 0	1 15.0	156.062
1/ 1/ 0	1 20.0	124.570
1/ 1/ 0	1 25.0	95.338
1/ 1/ 0	1 30.0	73.351
1/ 1/ 0	1 35.0	58.291
1/ 1/ 0	1 40.0	48.045
1/ 1/ 0	1 45.0	41.052
1/ 1/ 0	1 50.0	36.084
1/ 1/ 0	1 55.0	30.712
1/ 1/ 0	2 0.0	26.564
1/ 1/ 0	2 5.0	21.671
1/ 1/ 0	2 10.0	17.705
1/ 1/ 0	2 15.0	14.521
1/ 1/ 0	2 20.0	11.975
1/ 1/ 0	2 25.0	9.936
1/ 1/ 0	2 30.0	8.296
1/ 1/ 0	2 35.0	6.968
1/ 1/ 0	2 40.0	5.884
1/ 1/ 0	2 45.0	4.991
1/ 1/ 0	2 50.0	4.251
1/ 1/ 0	2 55.0	3.631
1/ 1/ 0	2 60.0	3.110
1/ 1/ 0	3 5.0	2.669
1/ 1/ 0	3 10.0	2.293
1/ 1/ 0	3 15.0	1.973
1/ 1/ 0	3 20.0	1.700
1/ 1/ 0	3 25.0	1.468
1/ 1/ 0	3 30.0	1.272
1/ 1/ 0	3 35.0	1.106
1/ 1/ 0	3 40.0	0.966
1/ 1/ 0	3 45.0	0.846
1/ 1/ 0	3 50.0	0.743
1/ 1/ 0	3 55.0	0.654
1/ 1/ 0	3 60.0	0.577
1/ 1/ 0	4 5.0	0.511
1/ 1/ 0	4 10.0	0.454
1/ 1/ 0	4 15.0	0.404

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 151

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	0.361
1/ 1/ 0	4 25.0	0.323
1/ 1/ 0	4 30.0	0.289
1/ 1/ 0	4 35.0	0.259
1/ 1/ 0	4 40.0	0.232
1/ 1/ 0	4 45.0	0.208
1/ 1/ 0	4 50.0	0.186
1/ 1/ 0	4 55.0	0.167
1/ 1/ 0	5 0.0	0.149

FLOW WT'D MEANS 28.008

FLOW WT'D STD-DEVS 458.869

TOTAL LOADS 504149.375
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 152

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		458.869
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 153

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.097
1/ 1/ 0	0 10.0	0.298
1/ 1/ 0	0 15.0	1.296
1/ 1/ 0	0 20.0	3.531
1/ 1/ 0	0 25.0	6.502
1/ 1/ 0	0 30.0	12.912
1/ 1/ 0	0 35.0	20.090
1/ 1/ 0	0 40.0	28.750
1/ 1/ 0	0 45.0	44.862
1/ 1/ 0	0 50.0	76.193
1/ 1/ 0	0 55.0	133.414
1/ 1/ 0	0 60.0	256.129
1/ 1/ 0	1 5.0	373.439
1/ 1/ 0	1 10.0	339.490
1/ 1/ 0	1 15.0	287.319
1/ 1/ 0	1 20.0	244.265
1/ 1/ 0	1 25.0	197.191
1/ 1/ 0	1 30.0	153.152
1/ 1/ 0	1 35.0	128.842
1/ 1/ 0	1 40.0	107.110
1/ 1/ 0	1 45.0	91.133
1/ 1/ 0	1 50.0	79.175
1/ 1/ 0	1 55.0	67.285
1/ 1/ 0	2 0.0	58.232
1/ 1/ 0	2 5.0	48.274
1/ 1/ 0	2 10.0	40.212
1/ 1/ 0	2 15.0	33.630
1/ 1/ 0	2 20.0	28.236
1/ 1/ 0	2 25.0	23.800
1/ 1/ 0	2 30.0	20.142
1/ 1/ 0	2 35.0	17.113
1/ 1/ 0	2 40.0	14.595
1/ 1/ 0	2 45.0	12.490
1/ 1/ 0	2 50.0	10.723
1/ 1/ 0	2 55.0	9.233
1/ 1/ 0	2 60.0	7.972
1/ 1/ 0	3 5.0	6.900
1/ 1/ 0	3 10.0	5.988
1/ 1/ 0	3 15.0	5.213
1/ 1/ 0	3 20.0	4.556
1/ 1/ 0	3 25.0	4.007
1/ 1/ 0	3 30.0	3.534
1/ 1/ 0	3 35.0	3.124
1/ 1/ 0	3 40.0	2.767
1/ 1/ 0	3 45.0	2.456
1/ 1/ 0	3 50.0	2.184
1/ 1/ 0	3 55.0	1.945
1/ 1/ 0	3 60.0	1.736
1/ 1/ 0	4 5.0	1.552
1/ 1/ 0	4 10.0	1.389
1/ 1/ 0	4 15.0	1.245

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 153

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	1.118
1/ 1/ 0	4 25.0	1.004
1/ 1/ 0	4 30.0	0.903
1/ 1/ 0	4 35.0	0.813
1/ 1/ 0	4 40.0	0.733
1/ 1/ 0	4 45.0	0.660
1/ 1/ 0	4 50.0	0.595
1/ 1/ 0	4 55.0	0.536
1/ 1/ 0	5 0.0	0.484

FLOW WT'D MEANS 51.295

FLOW WT'D STD-DEVS 794.650

TOTAL LOADS 923301.135
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 154

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.100
1/ 1/ 0	0 10.0	0.292
1/ 1/ 0	0 15.0	1.239
1/ 1/ 0	0 20.0	3.159
1/ 1/ 0	0 25.0	5.239
1/ 1/ 0	0 30.0	9.682
1/ 1/ 0	0 35.0	13.333
1/ 1/ 0	0 40.0	17.024
1/ 1/ 0	0 45.0	25.471
1/ 1/ 0	0 50.0	42.763
1/ 1/ 0	0 55.0	72.882
1/ 1/ 0	0 60.0	165.930
1/ 1/ 0	1 5.0	158.716
1/ 1/ 0	1 10.0	97.150
1/ 1/ 0	1 15.0	60.745
1/ 1/ 0	1 20.0	46.422
1/ 1/ 0	1 25.0	31.935
1/ 1/ 0	1 30.0	23.175
1/ 1/ 0	1 35.0	18.709
1/ 1/ 0	1 40.0	16.244
1/ 1/ 0	1 45.0	14.825
1/ 1/ 0	1 50.0	13.824
1/ 1/ 0	1 55.0	11.214
1/ 1/ 0	2 0.0	9.608
1/ 1/ 0	2 5.0	6.706
1/ 1/ 0	2 10.0	4.868
1/ 1/ 0	2 15.0	3.637
1/ 1/ 0	2 20.0	2.779
1/ 1/ 0	2 25.0	2.163
1/ 1/ 0	2 30.0	1.714
1/ 1/ 0	2 35.0	1.390
1/ 1/ 0	2 40.0	1.143
1/ 1/ 0	2 45.0	0.948
1/ 1/ 0	2 50.0	0.792
1/ 1/ 0	2 55.0	0.667
1/ 1/ 0	2 60.0	0.564
1/ 1/ 0	3 5.0	0.479
1/ 1/ 0	3 10.0	0.407
1/ 1/ 0	3 15.0	0.348
1/ 1/ 0	3 20.0	0.297
1/ 1/ 0	3 25.0	0.254
1/ 1/ 0	3 30.0	0.216
1/ 1/ 0	3 35.0	0.184
1/ 1/ 0	3 40.0	0.156
1/ 1/ 0	3 45.0	0.132
1/ 1/ 0	3 50.0	0.111
1/ 1/ 0	3 55.0	0.093
1/ 1/ 0	3 60.0	0.077
1/ 1/ 0	4 5.0	0.063
1/ 1/ 0	4 10.0	0.050
1/ 1/ 0	4 15.0	0.040

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 154

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	0.030
1/ 1/ 0	4 25.0	0.022
1/ 1/ 0	4 30.0	0.016
1/ 1/ 0	4 35.0	0.010
1/ 1/ 0	4 40.0	0.006
1/ 1/ 0	4 45.0	0.002
1/ 1/ 0	4 50.0	0.000

FLOW WT'D MEANS 14.834

FLOW WT'D STD-DEVS 281.204

TOTAL LOADS 267013.875
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 155

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.111
1/ 1/ 0	0 10.0	0.318
1/ 1/ 0	0 15.0	1.384
1/ 1/ 0	0 20.0	3.650
1/ 1/ 0	0 25.0	6.513
1/ 1/ 0	0 30.0	12.820
1/ 1/ 0	0 35.0	20.161
1/ 1/ 0	0 40.0	29.811
1/ 1/ 0	0 45.0	47.486
1/ 1/ 0	0 50.0	81.116
1/ 1/ 0	0 55.0	142.789
1/ 1/ 0	0 60.0	311.426
1/ 1/ 0	1 5.0	432.403
1/ 1/ 0	1 10.0	462.351
1/ 1/ 0	1 15.0	433.640
1/ 1/ 0	1 20.0	386.576
1/ 1/ 0	1 25.0	328.667
1/ 1/ 0	1 30.0	273.108
1/ 1/ 0	1 35.0	226.258
1/ 1/ 0	1 40.0	188.860
1/ 1/ 0	1 45.0	159.791
1/ 1/ 0	1 50.0	137.280
1/ 1/ 0	1 55.0	117.543
1/ 1/ 0	2 0.0	101.340
1/ 1/ 0	2 5.0	86.000
1/ 1/ 0	2 10.0	72.747
1/ 1/ 0	2 15.0	61.520
1/ 1/ 0	2 20.0	52.101
1/ 1/ 0	2 25.0	44.235
1/ 1/ 0	2 30.0	37.672
1/ 1/ 0	2 35.0	32.194
1/ 1/ 0	2 40.0	27.613
1/ 1/ 0	2 45.0	23.769
1/ 1/ 0	2 50.0	20.532
1/ 1/ 0	2 55.0	17.795
1/ 1/ 0	2 60.0	15.471
1/ 1/ 0	3 5.0	13.491
1/ 1/ 0	3 10.0	11.797
1/ 1/ 0	3 15.0	10.344
1/ 1/ 0	3 20.0	9.094
1/ 1/ 0	3 25.0	8.019
1/ 1/ 0	3 30.0	7.092
1/ 1/ 0	3 35.0	6.290
1/ 1/ 0	3 40.0	5.593
1/ 1/ 0	3 45.0	4.985
1/ 1/ 0	3 50.0	4.453
1/ 1/ 0	3 55.0	3.987
1/ 1/ 0	3 60.0	3.577
1/ 1/ 0	4 5.0	3.217
1/ 1/ 0	4 10.0	2.898
1/ 1/ 0	4 15.0	2.615

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 155

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	2.363
1/ 1/ 0	4 25.0	2.138
1/ 1/ 0	4 30.0	1.938
1/ 1/ 0	4 35.0	1.758
1/ 1/ 0	4 40.0	1.597
1/ 1/ 0	4 45.0	1.453
1/ 1/ 0	4 50.0	1.323
1/ 1/ 0	4 55.0	1.206
1/ 1/ 0	5 0.0	1.100

FLOW WT'D MEANS 75.156

FLOW WT'D STD-DEVS 1106.739

TOTAL LOADS **********
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 156

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.112
1/ 1/ 0	0 10.0	0.327
1/ 1/ 0	0 15.0	1.403
1/ 1/ 0	0 20.0	3.651
1/ 1/ 0	0 25.0	6.309
1/ 1/ 0	0 30.0	12.092
1/ 1/ 0	0 35.0	18.039
1/ 1/ 0	0 40.0	25.544
1/ 1/ 0	0 45.0	40.708
1/ 1/ 0	0 50.0	70.553
1/ 1/ 0	0 55.0	124.998
1/ 1/ 0	0 60.0	278.452
1/ 1/ 0	1 5.0	368.843
1/ 1/ 0	1 10.0	407.216
1/ 1/ 0	1 15.0	433.655
1/ 1/ 0	1 20.0	438.140
1/ 1/ 0	1 25.0	409.490
1/ 1/ 0	1 30.0	367.559
1/ 1/ 0	1 35.0	322.776
1/ 1/ 0	1 40.0	280.376
1/ 1/ 0	1 45.0	243.069
1/ 1/ 0	1 50.0	211.402
1/ 1/ 0	1 55.0	182.594
1/ 1/ 0	2 0.0	158.720
1/ 1/ 0	2 5.0	136.341
1/ 1/ 0	2 10.0	117.405
1/ 1/ 0	2 15.0	101.211
1/ 1/ 0	2 20.0	87.337
1/ 1/ 0	2 25.0	75.462
1/ 1/ 0	2 30.0	65.307
1/ 1/ 0	2 35.0	56.628
1/ 1/ 0	2 40.0	49.208
1/ 1/ 0	2 45.0	42.857
1/ 1/ 0	2 50.0	37.412
1/ 1/ 0	2 55.0	32.733
1/ 1/ 0	2 60.0	28.702
1/ 1/ 0	3 5.0	25.220
1/ 1/ 0	3 10.0	22.204
1/ 1/ 0	3 15.0	19.584
1/ 1/ 0	3 20.0	17.303
1/ 1/ 0	3 25.0	15.312
1/ 1/ 0	3 30.0	13.572
1/ 1/ 0	3 35.0	12.048
1/ 1/ 0	3 40.0	10.713
1/ 1/ 0	3 45.0	9.541
1/ 1/ 0	3 50.0	8.512
1/ 1/ 0	3 55.0	7.609
1/ 1/ 0	3 60.0	6.819
1/ 1/ 0	4 5.0	6.132
1/ 1/ 0	4 10.0	5.542
1/ 1/ 0	4 15.0	5.024

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 156

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	4.562
1/ 1/ 0	4 25.0	4.149
1/ 1/ 0	4 30.0	3.780
1/ 1/ 0	4 35.0	3.450
1/ 1/ 0	4 40.0	3.155
1/ 1/ 0	4 45.0	2.889
1/ 1/ 0	4 50.0	2.649
1/ 1/ 0	4 55.0	2.432
1/ 1/ 0	5 0.0	2.236

FLOW WT'D MEANS 90.851

FLOW WT'D STD-DEVS 1223.222

TOTAL LOADS **********
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 157

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.092
1/ 1/ 0	0 10.0	0.247
1/ 1/ 0	0 15.0	1.063
1/ 1/ 0	0 20.0	2.612
1/ 1/ 0	0 25.0	4.226
1/ 1/ 0	0 30.0	7.915
1/ 1/ 0	0 35.0	11.601
1/ 1/ 0	0 40.0	16.614
1/ 1/ 0	0 45.0	26.945
1/ 1/ 0	0 50.0	47.139
1/ 1/ 0	0 55.0	84.104
1/ 1/ 0	0 60.0	187.716
1/ 1/ 0	1 5.0	263.791
1/ 1/ 0	1 10.0	324.269
1/ 1/ 0	1 15.0	377.699
1/ 1/ 0	1 20.0	416.287
1/ 1/ 0	1 25.0	424.888
1/ 1/ 0	1 30.0	410.030
1/ 1/ 0	1 35.0	380.729
1/ 1/ 0	1 40.0	344.665
1/ 1/ 0	1 45.0	307.509
1/ 1/ 0	1 50.0	272.479
1/ 1/ 0	1 55.0	239.329
1/ 1/ 0	2 0.0	210.199
1/ 1/ 0	2 5.0	183.286
1/ 1/ 0	2 10.0	159.755
1/ 1/ 0	2 15.0	139.288
1/ 1/ 0	2 20.0	121.520
1/ 1/ 0	2 25.0	106.111
1/ 1/ 0	2 30.0	92.757
1/ 1/ 0	2 35.0	81.190
1/ 1/ 0	2 40.0	71.172
1/ 1/ 0	2 45.0	62.492
1/ 1/ 0	2 50.0	54.964
1/ 1/ 0	2 55.0	48.428
1/ 1/ 0	2 60.0	42.744
1/ 1/ 0	3 5.0	37.790
1/ 1/ 0	3 10.0	33.465
1/ 1/ 0	3 15.0	29.681
1/ 1/ 0	3 20.0	26.362
1/ 1/ 0	3 25.0	23.446
1/ 1/ 0	3 30.0	20.880
1/ 1/ 0	3 35.0	18.617
1/ 1/ 0	3 40.0	16.621
1/ 1/ 0	3 45.0	14.857
1/ 1/ 0	3 50.0	13.297
1/ 1/ 0	3 55.0	11.918
1/ 1/ 0	3 60.0	10.701
1/ 1/ 0	4 5.0	9.629
1/ 1/ 0	4 10.0	8.692
1/ 1/ 0	4 15.0	7.879

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM, EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 157

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	7.161
1/ 1/ 0	4 25.0	6.521
1/ 1/ 0	4 30.0	5.950
1/ 1/ 0	4 35.0	5.439
1/ 1/ 0	4 40.0	4.980
1/ 1/ 0	4 45.0	4.568
1/ 1/ 0	4 50.0	4.197
1/ 1/ 0	4 55.0	3.861
1/ 1/ 0	5 0.0	3.557

FLOW WT'D MEANS 97.600

FLOW WT'D STD-DEVS 1245.907

TOTAL LOADS **********
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 158

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
FLOW WT'D MEANS		0.000
FLOW WT'D STD-DEVS		1245.907
TOTAL LOADS		0.000 CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 159

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.001
1/ 1/ 0	0 10.0	0.008
1/ 1/ 0	0 15.0	0.049
1/ 1/ 0	0 20.0	0.216
1/ 1/ 0	0 25.0	0.610
1/ 1/ 0	0 30.0	1.445
1/ 1/ 0	0 35.0	2.963
1/ 1/ 0	0 40.0	5.312
1/ 1/ 0	0 45.0	9.249
1/ 1/ 0	0 50.0	16.787
1/ 1/ 0	0 55.0	31.920
1/ 1/ 0	0 60.0	69.381
1/ 1/ 0	1 5.0	134.336
1/ 1/ 0	1 10.0	207.917
1/ 1/ 0	1 15.0	278.471
1/ 1/ 0	1 20.0	339.653
1/ 1/ 0	1 25.0	382.670
1/ 1/ 0	1 30.0	401.430
1/ 1/ 0	1 35.0	398.155
1/ 1/ 0	1 40.0	379.065
1/ 1/ 0	1 45.0	350.869
1/ 1/ 0	1 50.0	318.979
1/ 1/ 0	1 55.0	286.548
1/ 1/ 0	2 0.0	255.432
1/ 1/ 0	2 5.0	226.519
1/ 1/ 0	2 10.0	200.043
1/ 1/ 0	2 15.0	176.296
1/ 1/ 0	2 20.0	155.244
1/ 1/ 0	2 25.0	136.701
1/ 1/ 0	2 30.0	120.428
1/ 1/ 0	2 35.0	106.177
1/ 1/ 0	2 40.0	93.712
1/ 1/ 0	2 45.0	82.814
1/ 1/ 0	2 50.0	73.286
1/ 1/ 0	2 55.0	64.952
1/ 1/ 0	2 60.0	57.655
1/ 1/ 0	3 5.0	51.260
1/ 1/ 0	3 10.0	45.646
1/ 1/ 0	3 15.0	40.711
1/ 1/ 0	3 20.0	36.364
1/ 1/ 0	3 25.0	32.529
1/ 1/ 0	3 30.0	29.139
1/ 1/ 0	3 35.0	26.137
1/ 1/ 0	3 40.0	23.476
1/ 1/ 0	3 45.0	21.113
1/ 1/ 0	3 50.0	19.011
1/ 1/ 0	3 55.0	17.141
1/ 1/ 0	3 60.0	15.474
1/ 1/ 0	4 5.0	13.990
1/ 1/ 0	4 10.0	12.668
1/ 1/ 0	4 15.0	11.494

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 159

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	10.451
1/ 1/ 0	4 25.0	9.523
1/ 1/ 0	4 30.0	8.695
1/ 1/ 0	4 35.0	7.954
1/ 1/ 0	4 40.0	7.289
1/ 1/ 0	4 45.0	6.691
1/ 1/ 0	4 50.0	6.152
1/ 1/ 0	4 55.0	5.666
1/ 1/ 0	5 0.0	5.226

FLOW WT'D MEANS 97.152

FLOW WT'D STD-DEVS 1210.603

TOTAL LOADS **********
CUB-FT

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 160

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	0 5.0	0.024
1/ 1/ 0	0 10.0	0.063
1/ 1/ 0	0 15.0	0.266
1/ 1/ 0	0 20.0	0.623
1/ 1/ 0	0 25.0	0.920
1/ 1/ 0	0 30.0	1.627
1/ 1/ 0	0 35.0	2.158
1/ 1/ 0	0 40.0	2.944
1/ 1/ 0	0 45.0	5.010
1/ 1/ 0	0 50.0	9.296
1/ 1/ 0	0 55.0	17.349
1/ 1/ 0	0 60.0	40.672
1/ 1/ 0	1 5.0	61.311
1/ 1/ 0	1 10.0	98.980
1/ 1/ 0	1 15.0	157.784
1/ 1/ 0	1 20.0	236.451
1/ 1/ 0	1 25.0	290.670
1/ 1/ 0	1 30.0	341.334
1/ 1/ 0	1 35.0	371.961
1/ 1/ 0	1 40.0	381.930
1/ 1/ 0	1 45.0	375.019
1/ 1/ 0	1 50.0	356.584
1/ 1/ 0	1 55.0	331.236
1/ 1/ 0	2 0.0	303.146
1/ 1/ 0	2 5.0	274.279
1/ 1/ 0	2 10.0	246.482
1/ 1/ 0	2 15.0	220.447
1/ 1/ 0	2 20.0	196.562
1/ 1/ 0	2 25.0	174.961
1/ 1/ 0	2 30.0	155.610
1/ 1/ 0	2 35.0	138.381
1/ 1/ 0	2 40.0	123.102
1/ 1/ 0	2 45.0	109.584
1/ 1/ 0	2 50.0	97.642
1/ 1/ 0	2 55.0	87.097
1/ 1/ 0	2 60.0	77.788
1/ 1/ 0	3 5.0	69.565
1/ 1/ 0	3 10.0	62.297
1/ 1/ 0	3 15.0	55.867
1/ 1/ 0	3 20.0	50.170
1/ 1/ 0	3 25.0	45.116
1/ 1/ 0	3 30.0	40.625
1/ 1/ 0	3 35.0	36.630
1/ 1/ 0	3 40.0	33.069
1/ 1/ 0	3 45.0	29.891
1/ 1/ 0	3 50.0	27.050
1/ 1/ 0	3 55.0	24.507
1/ 1/ 0	3 60.0	22.228
1/ 1/ 0	4 5.0	20.183
1/ 1/ 0	4 10.0	18.348
1/ 1/ 0	4 15.0	16.699

CITY OF PEORIA STORM DRAIN MASTER PLAN (R/O ONLY)

CACTUS AVENUE STORM DRAIN - 10-YEAR STORM. EXISTING CONDITIONS

SUMMARY OF QUANTITY RESULTS (INFLOW IN CFS) AT LOCATION 160

DATE MO/DA/YR	TIME HR:MIN	FLOW CFS
1/ 1/ 0	4 20.0	15.216
1/ 1/ 0	4 25.0	13.889
1/ 1/ 0	4 30.0	12.692
1/ 1/ 0	4 35.0	11.616
1/ 1/ 0	4 40.0	10.647
1/ 1/ 0	4 45.0	9.772
1/ 1/ 0	4 50.0	8.983
1/ 1/ 0	4 55.0	8.269
1/ 1/ 0	5 0.0	7.622

FLOW WT'D MEANS 98.837

FLOW WT'D STD-DEVS 1187.180

TOTAL LOADS **********
CUB-FT

* * * * * RUNOFF SIMULATION ENDED NORMALLY * * * * *

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ENDPROGRAM          BLOCK CALLED.

* * * * *  STORMWATER SIMULATION ENDED NORMALLY  * * * * *
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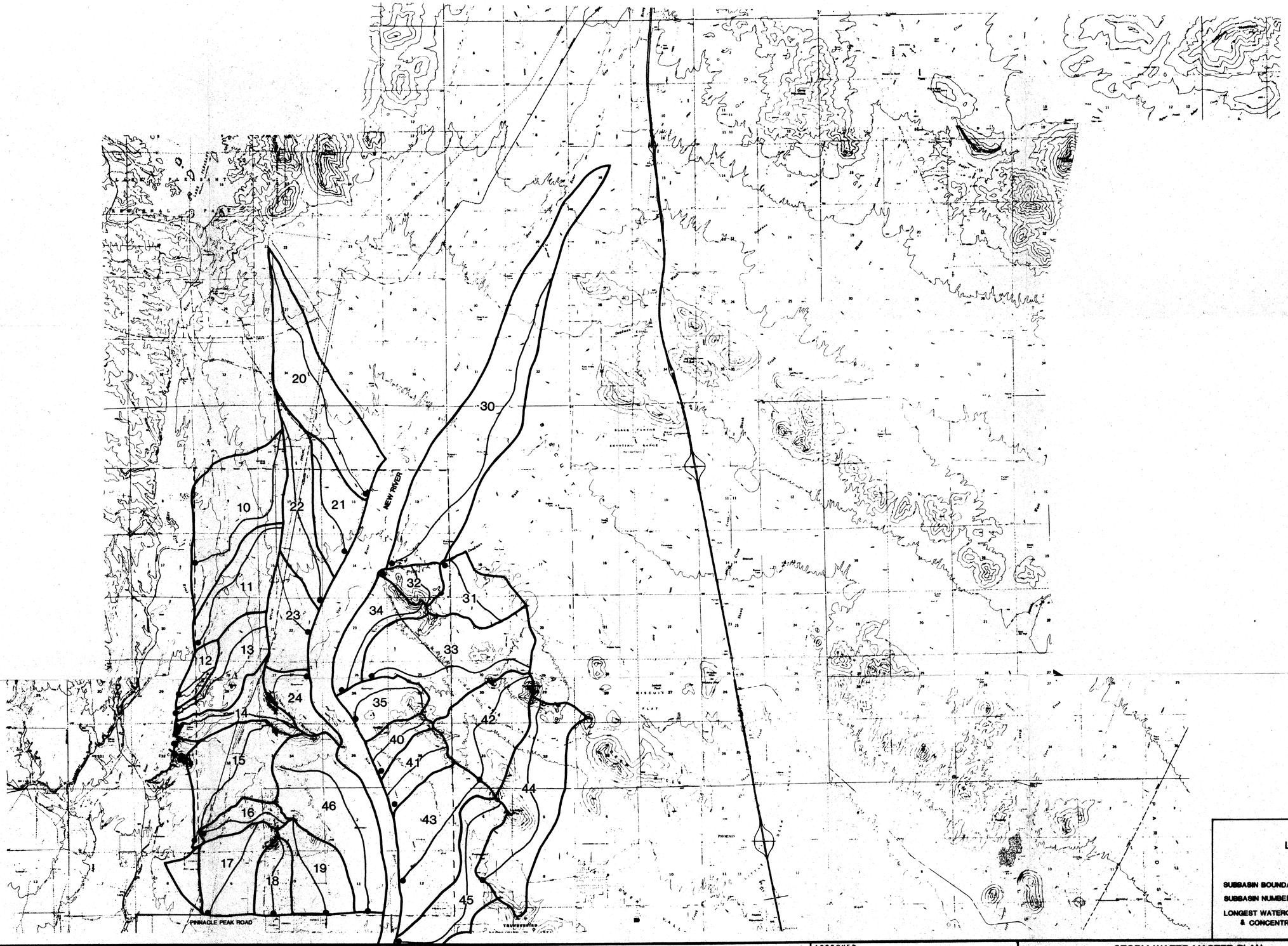


LEGEND

SUBBASIN BOUNDARY

SUBBASIN NUMBER — 1

LONGEST WATERCOURSE & CONCENTRATION POINT

REV	DATE	BY	DESCRIPTION

SCALE: 1:48,000

DESIGNED KKM
DRAWN D. CLARK
CHECKED SM

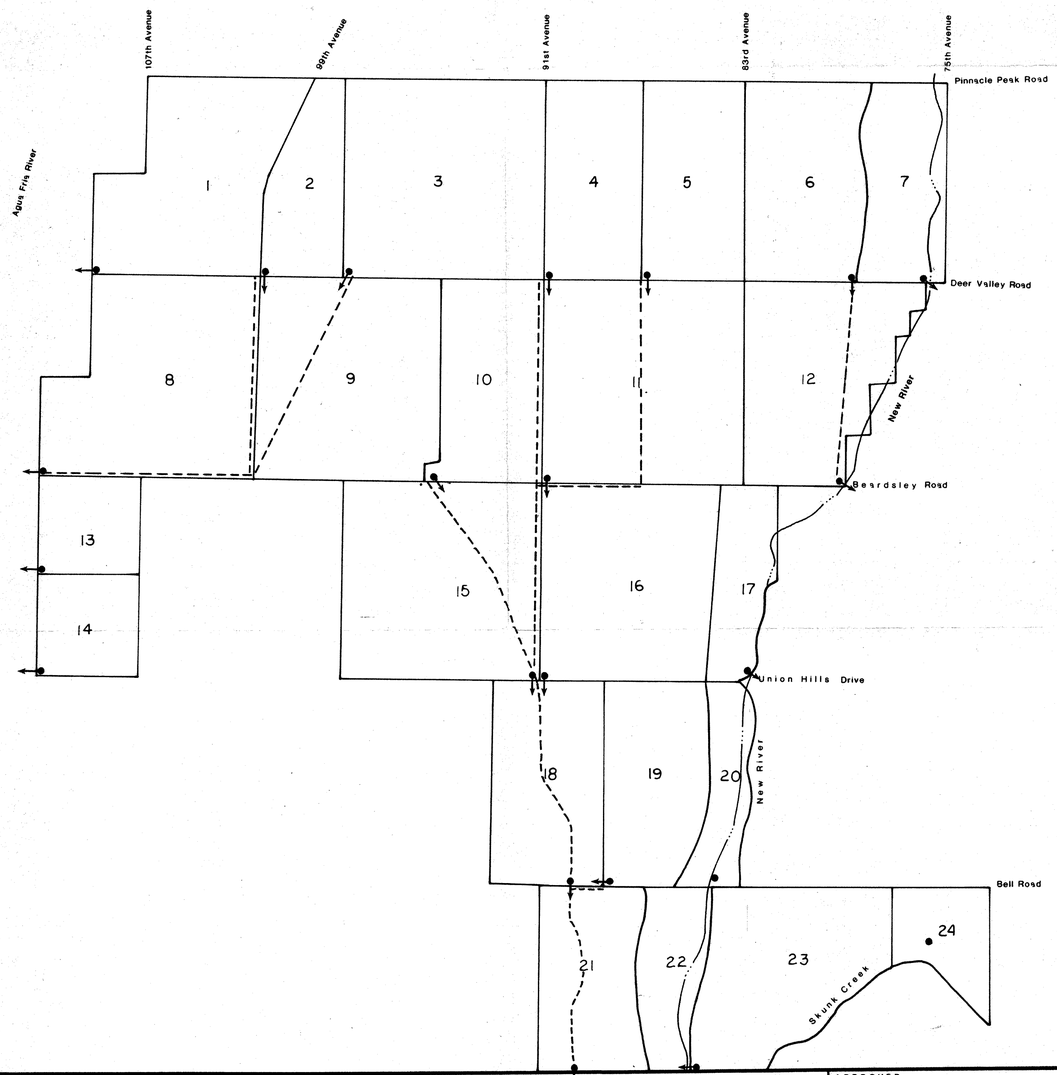
SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — DATE
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. — DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.
17802 SKY PARK CIRCLE, IRVINE, CALIFORNIA 92714

APPROVED — DATE
APPROVED — DATE

STORM WATER MASTER PLAN
DRAINAGE SUBBASINS – NORTH OF PINNACLE PEAK ROAD
CITY OF PEORIA, AZ

SHEET 1 OF 3 SHEETS



LEGEND

SUBBASIN BOUNDARY	
SUBBASIN NUMBER	1
CONCENTRATION POINT & FLOW DIRECTION	
ROUTING FLOW PATH	
STREAM CENTERLINE	

REV	DATE	BY	DESCRIPTION

SCALE: 1:24,000

DESIGNED KKM
DRAWN D. CLARK
CHECKED JM

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — DATE
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. — DATE

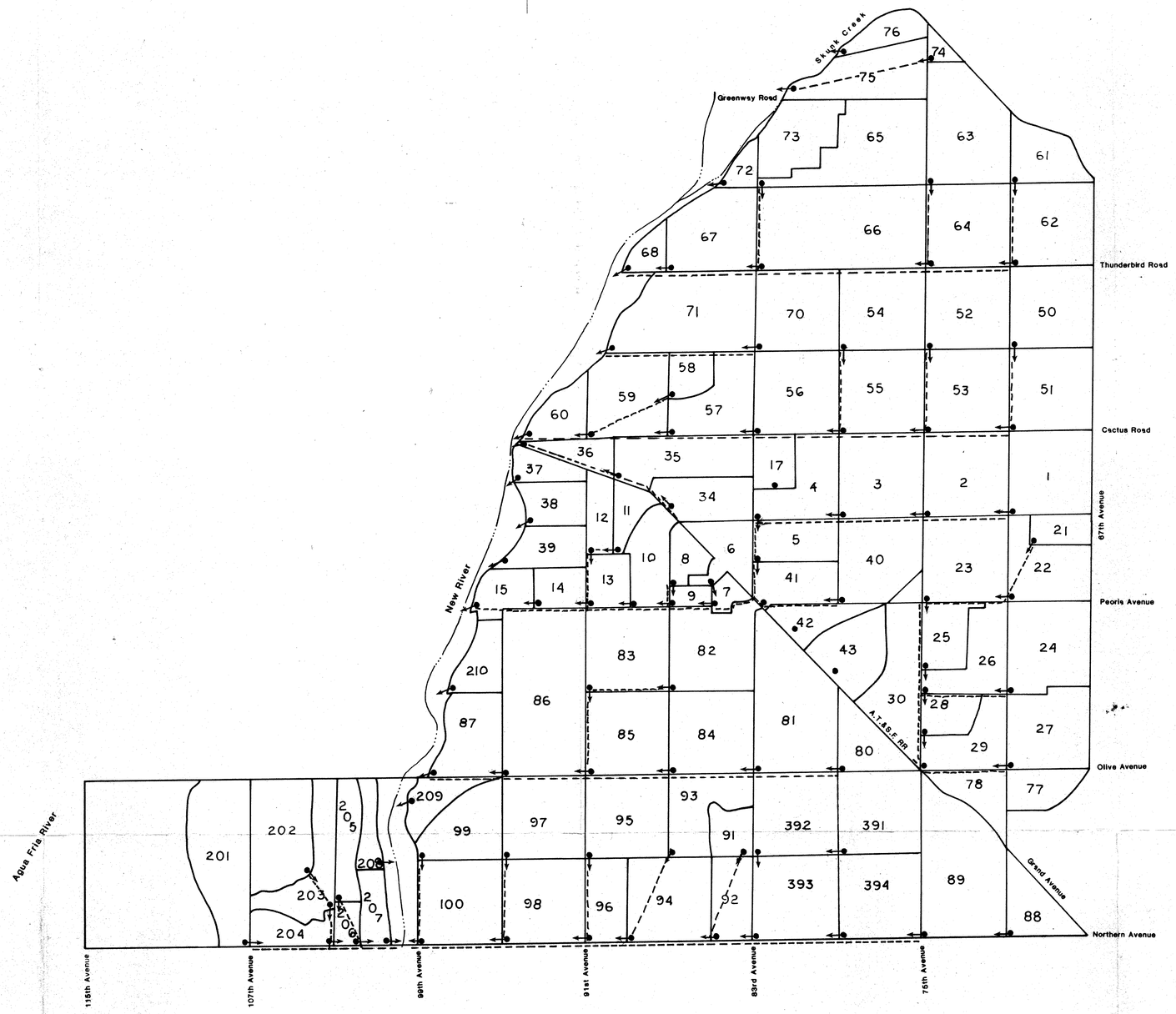
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.
17802 SKY PARK CIRCLE, IRVINE, CALIFORNIA 92714

APPROVED — DATE
APPROVED — DATE

STORM WATER MASTER PLAN
DRAINAGE SUBBASINS – PINNACLE PEAK ROAD TO BELL ROAD
CITY OF PEORIA, AZ

SHEET 2 OF 3 SHEETS

CC 8-80 FILE JOB NO.



LEGEND

SUBBASIN BOUNDARY	□
SUBBASIN NUMBER	1
CONCENTRATION POINT & FLOW DIRECTION	←●
ROUTING FLOW PATH	- - - - - -
STREAM CENTERLINE	—··—

REV	DATE	BY	DESCRIPTION

SCALE: 1:24,000

DESIGNED KKM
DRAWN D. CLARK
CHECKED SM

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — DATE
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. — DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.
17802 SKY PARK CIRCLE, IRVINE, CALIFORNIA 92714

APPROVED — DATE
APPROVED — DATE

STORM WATER MASTER PLAN
DRAINAGE SUBBASINS - BELL ROAD TO NORTHERN AVENUE
CITY OF PEORIA, AZ

SHEET 3 OF 3 SHEETS

JOB NO. ____ FILE ____ CC 9-80