Contract No. FCD 98-30

OSBORN ROAD STORM DRAIN

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FINAL

68TH STREET AND ARCADIA FLOODING INVESTIGATION

APRIL 13, 2000

Registered Professional Engineer (Civil)
CERTIFICATE NO.
28163
ALAN J.
HUMPHREY
Date Signed 4/13/00
ARIZONA, U.S.A.

Submitted to:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Submitted by:

PARSONS BRINCKERHOFF

1501 W. Fountainhead Parkway, Suite 400
Tempe, AZ 85282
480-966-8295

PCN No. 027 04 30

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100 YEARS
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1.0 INTRODUCTION

1.1 Location

The watershed is located in Scottsdale, Phoenix and Paradise Valley Arizona. It is bounded on the north by Camelback Mountain and Chaparral Road and on the west, south and east by the Arizona Canal. Figure 1, Vicinity Map, shows the approximate boundary of the watershed. The point of interest is the existing detention basin at the intersection of 68th Street and Calle Redondo in Scottsdale.

1.2 History

Runoff generated on the southern slopes of Camelback Mountain flow from north to south. The runoff is impeded by the Arizona Canal. The banks of the canal are higher than the adjacent ground. The area north of the bank of the canal has been designated a 100-year Flood Zone A by the Federal Emergency Management Agency (FEMA). The flood zone behind the canal is delineated on various Flood Insurance Rate Maps (FIRMs). The existing detention basin is shown on FIRM No. 04013C2160 D. Figure 2 shows relevant portions of the FIRM.

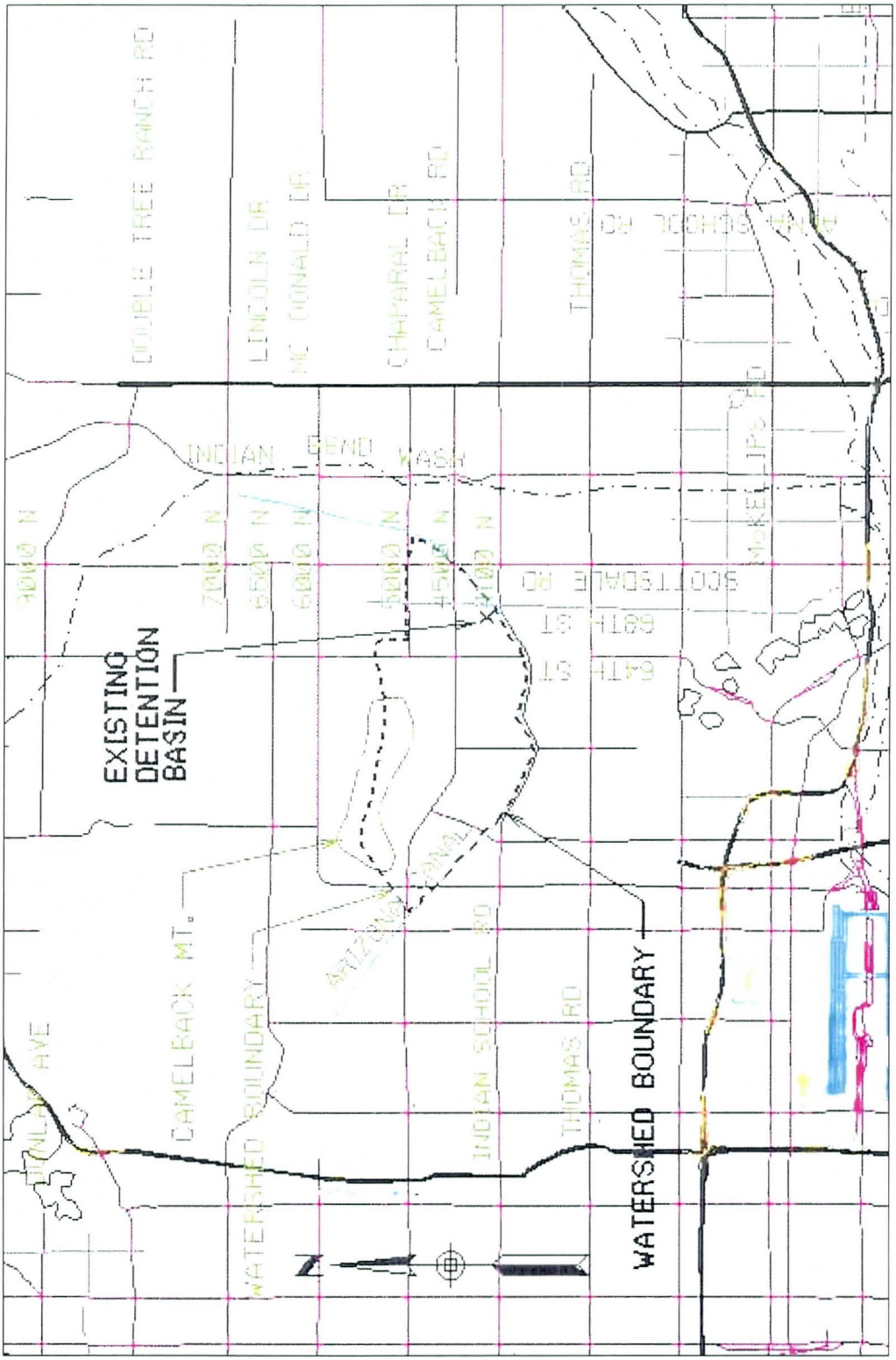
Existing storm drains and detention basins along the north side of the canal provide flood relief during smaller storms and help to mitigate damage during larger storms. However, the existing systems are inadequate to provide sufficient protection during the 100-year storm to allow the area to be removed from the flood zone.

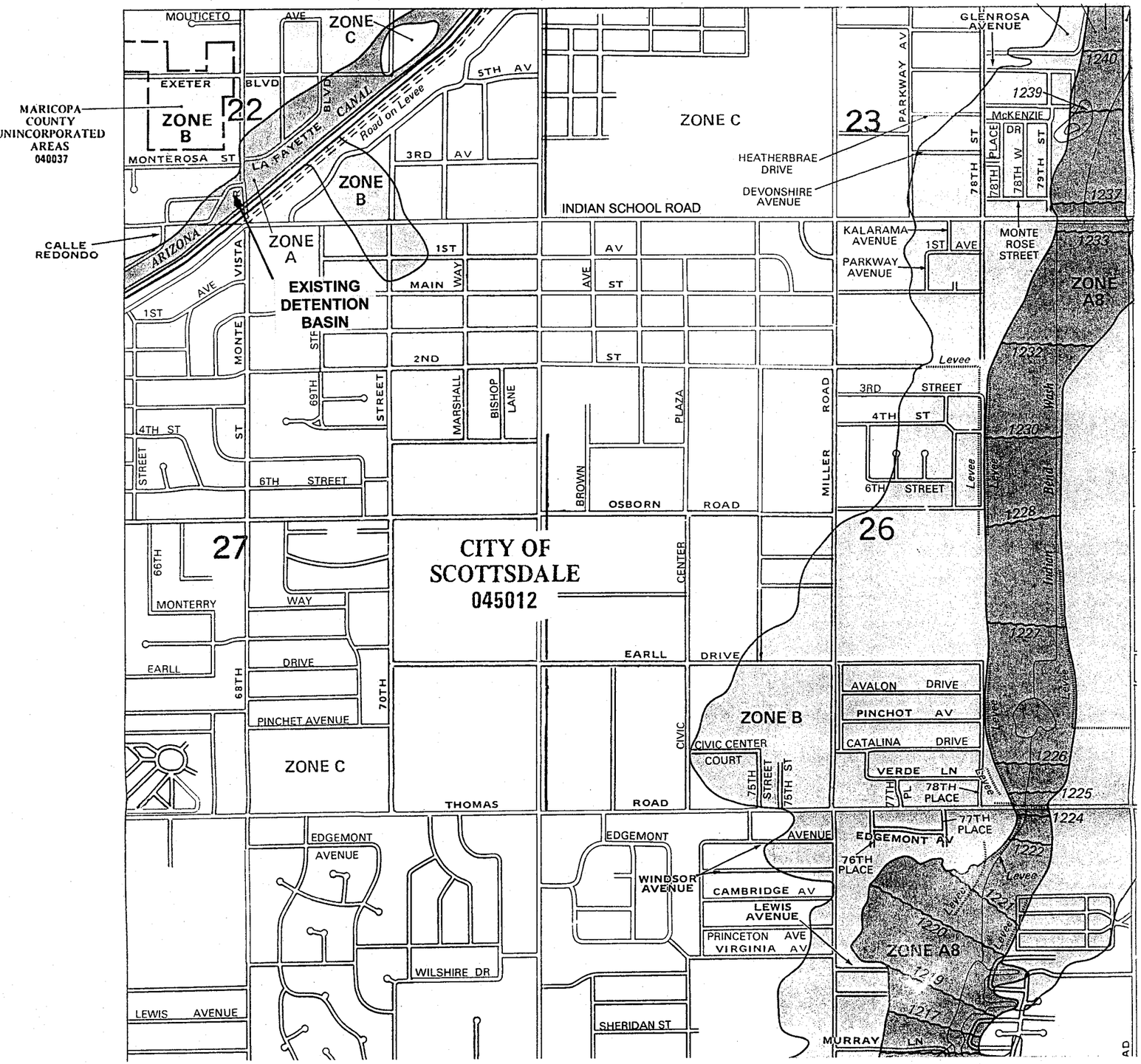
1.3 Report Purpose

The purpose of this Report is to perform a limited analysis of the conditions at the intersection of 68th Street and Calle Redondo during a 100-year storm. An existing detention basin at the intersection provides limited protection to homes in the vicinity. An existing 72-inch discharge pipe drains the basin. The existing pipe is a component of an existing storm drain system that discharges to Indian Bend Wash. Existing storm drains upstream from the existing detention basin may or may not have sufficient carrying capacity to convey the 100-year storm to the detention basin. It is beyond the scope of this report to attempt to analyze existing storm drain systems.

Existing hydrologic models are used to estimate the order of magnitude of the improvements that would be required to remove the area from the 100-year flood zone. The results of the Report are not to be used for the design of the improvements discussed. A comprehensive modeling of the hydrology in the area and an analysis of the performance of existing storm drain systems is required to design infrastructure necessary to remove homes north of the canal from the flood zone. Improvement or replacement of existing storm drain systems would be expected to significantly increase the costs described herein.

Figure 1- ***Vicinity Map***





KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	ZONE B
Zone Designations	A / AE
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7×
Zone D Boundary	
River Mile	•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Certain areas not in the Special Flood Hazard Areas (zones A and V) may be protected by flood control structures.

Coastal base flood elevations apply only landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 5.4 of the Flood Insurance Study Report.

For adjoining map panels, see separately printed Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:

APRIL 15, 1988

EFFECTIVE DATE (S) OF REVISION (S) TO THIS PANEL:

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2160 OF 4350

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2160	D
SCOTTSDALE, CITY OF	045012	2160	D
TEMPE, CITY OF	040054	2160	D

MAP NUMBER
04013C2160 D

EFFECTIVE DATE:
APRIL 15, 1988

Federal Emergency Management Agency

APPROXIMATE SCALE IN FEET
1000 0 1000

68TH STREET & ARCADIA FLOODING INVESTIGATION

FLOOD ZONE MAPPING

PARSONS BRINCKERHOFF

FIGURE 2

2.0 HYDROLOGIC MODELING

The watershed was originally modeled by two separate studies. Boyle Engineering Corporation and Huitt-Zollars Consulting Engineers developed the original models. Drainage maps from the studies are included in the Appendix. Staff from the Flood Control District of Maricopa County combined the results of the original models. The combination of the two models produced a single, 100-year hydrograph at the intersection of 68th Street and Calle Redondo. The single hydrograph is considered as the inflow into the existing detention basin. Parsons Brinckerhoff created multiple

HEC-1 models with reservoir routing routines to estimate the effects of enlarging the existing detention basin and/or varying the discharge rate from the basin.

3.0 ALTERNATIVE CONDITIONS

Eight alternative conditions were considered in the operation of the detention basin. All conditions are hypothetical. Actual discharge conditions of the existing outlet pipe are unknown. Runoff entering the storm drain system downstream from the detention basin will impact the rate of outflow from the detention basin. The hydraulic conditions within the storm drain downstream from the basin are unknown. Assumed discharges from the detention basin are used to estimate the conditions at the detention basin during the storm. Results of the analyses are included in the Appendix.

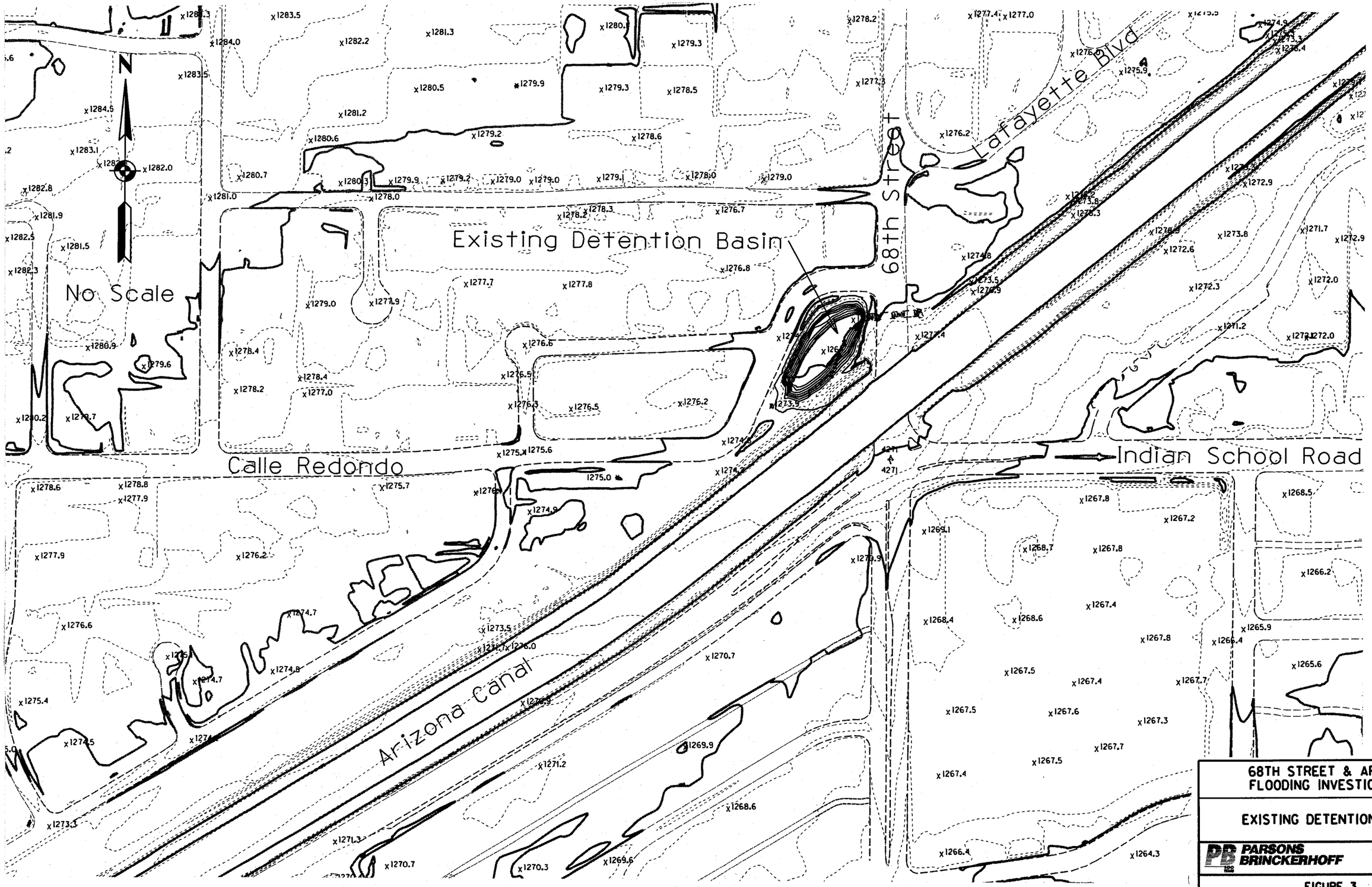
The existing detention basin has a maximum water surface elevation of approximately 1274.0. Storage volume at this elevation is approximately 4.9 acre-feet. The existing 72-inch discharge pipe has an invert elevation of approximately 1264.2. Figure 3 shows the configuration of the existing basin.

Various alternative conditions considered require the enlargement of the existing detention basin. The area in the vicinity of the basin is fully developed. Enlargement of the basin would require the removal of existing homes and streets. Schematic grading plans for the enlarged basins are included in the Appendix with the output from the corresponding HEC-1 model. If a house must be removed to enlarge the basin, the entire lot is considered to be part of the basin. Lot size is approximate. Property line locations are estimated using aerial photographs and the diagram shown in Figure 4.

Alternative Condition Number 1

Description

Alternative Condition Number 1 is modeled by HEC-1 model Extext.dat. The physical conditions considered are the existing detention basin and the existing discharge pipe. The discharge pipe is assumed to operate under inlet control. It is assumed that there are no backwater effects in the storm drain downstream from the basin. The HY-8 model shows a maximum interpolated discharge of 343 cfs.

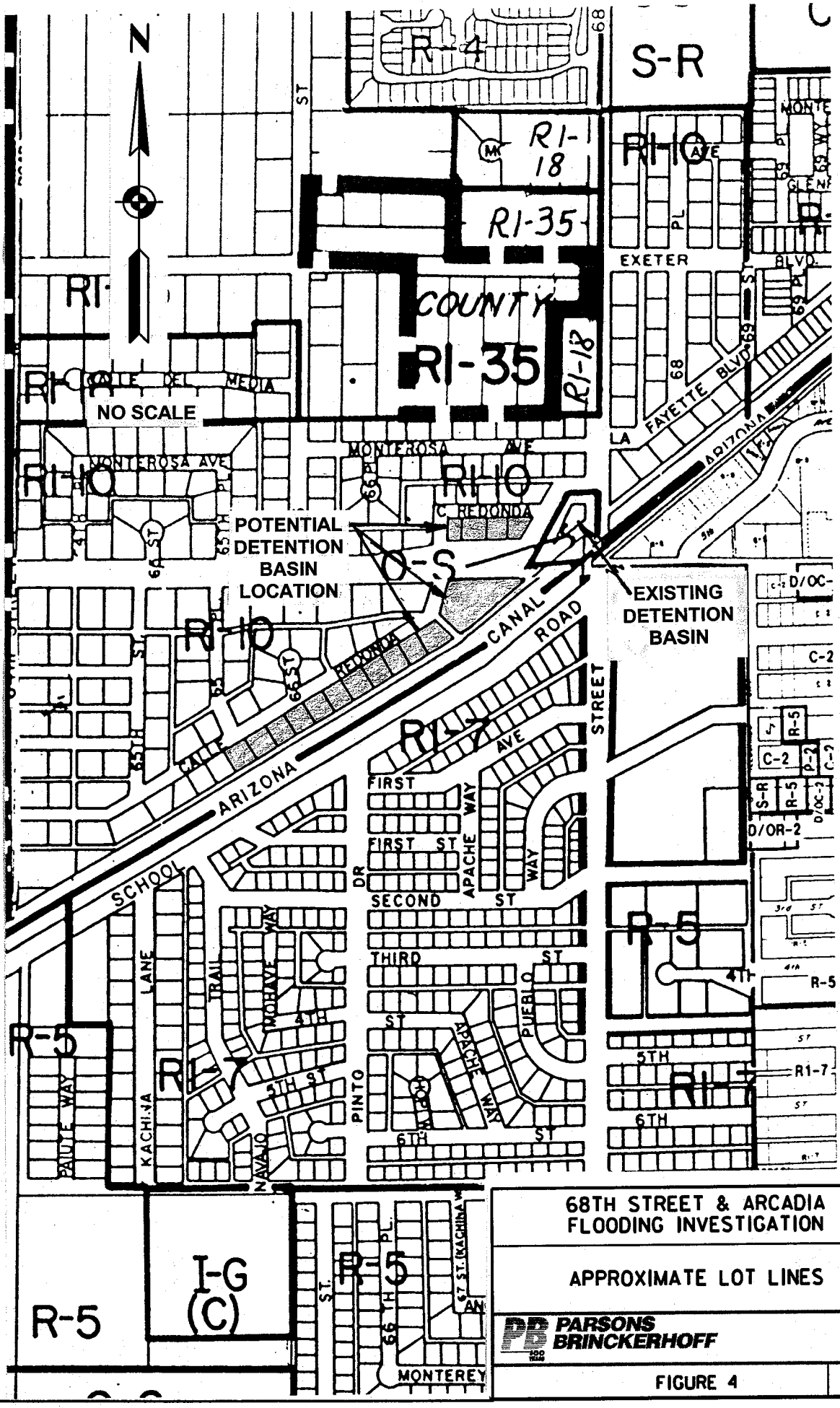


68TH STREET & ARCADIA
FLOODING INVESTIGATION

EXISTING DETENTION BASIN

PARSONS BRINCKERHOFF

FIGURE 3



68TH STREET & ARCADIA FLOODING INVESTIGATION

APPROXIMATE LOT LINES

PARSONS BRINCKERHOFF

FIGURE 4

Results
The existing detention basin is not able to contain the runoff during the design storm. Even if the existing pipe was able to discharge to a storm drain sufficiently large to convey the flows without backwater effects, the existing pipe is unable to admit the anticipated runoff without causing flooding. Additional detention or increased discharge capacity is required to allow the basin to operate during the design storm without flooding.

Alternative Condition Number 2
Description
Alternative Condition Number 2 is modeled by HEC-1 model Propext3.dat. The physical conditions considered are an enlarged detention basin with the existing discharge pipe. The discharge pipe is assumed to operate under inlet control. It is assumed that there are no backwater effects in the storm drain downstream from the basin. The basin is enlarged sufficiently to allow the discharge pipe to drain the basin without allowing the water surface to rise above elevation 1274.

Results
The existing detention basin is enlarged by removing three existing houses and excavating the site. This scenario is only valid if the discharge pipe is able to operate under inlet control during the entire storm.

Estimated Cost
The cost of the improvements for this alternative is estimated at $2.5 million.

Alternative Condition Number 3
Description
Alternative Condition Number 3 is modeled by HEC-1 model Propext2.dat. The physical conditions considered are an enlarged detention basin with the existing discharge pipe. The discharge pipe is assumed to operate with a maximum discharge rate of 200 cfs. It is assumed that backwater effects in the storm drain downstream from the basin limit the discharge rate to 200 cfs. The basin discharge is modeled as a culvert in inlet control for flows below 200 cfs. The basin is enlarged sufficiently to allow the discharge pipe to drain the basin without allowing the water surface to rise above elevation 1274.

Results
The existing detention basin is enlarged by removing three existing houses and excavating the site. This scenario is only valid if the discharge pipe is able to operate under inlet control with a maximum discharge of 200 cfs.

Estimated Cost
The cost of the improvements for this alternative is estimated at $2.6 million.

Alternative Condition Number 4
Description
Alternative Condition Number 4 is modeled by HEC-1 model Propext.dat. The physical conditions considered are an enlarged detention basin and the existing discharge pipe. The discharge pipe is assumed to operate with a maximum discharge rate of 100 cfs.

It is assumed that backwater effects in the storm drain downstream from the basin limit the discharge rate to 100 cfs. The basin discharge is modeled as a culvert in inlet control for flows below 100 cfs. The basin is enlarged sufficiently to allow the discharge pipe to drain the basin without allowing the water surface to rise above elevation 1274.

Results
The existing detention basin is enlarged by removing five existing houses and excavating the site. This scenario is only valid if the discharge pipe is able to operate under inlet control with a maximum discharge of 100 cfs.

Estimated Cost
The cost of the improvements for this alternative is estimated at $4.1 million.

Alternative Condition Number 5

Description
Alternative Condition Number 5 is modeled by HEC-1 model Retain.dat. The physical conditions considered are an enlarged detention basin with the existing discharge pipe. The discharge from the basin is assumed to be zero during the storm. The existing discharge pipe is assumed to drain the basin after the storm. These conditions are modeled to represent a worst-case scenario. The basin is enlarged sufficiently to allow the discharge pipe to drain the basin without allowing the water surface to rise above elevation 1274.

Results
The existing detention basin is enlarged by removing approximately 16 existing houses and excavating the site. This scenario is only valid if the discharge pipe is unable to operate during the design storm.

Estimated Cost
The cost of the improvements for this alternative is estimated at $11.9 million.

Alternative Condition Number 6

Description
Alternative Condition Number 6 is modeled by HEC-1 model Extext2.dat. The physical conditions considered are the existing detention basin with the existing discharge pipe and a second hypothetical discharge pipe connected to the proposed Osborn Road storm drain. The Osborn Road Storm Drain is designed to convey the 10-year storm. Alternative Condition Number 6 assumes a 10-year peak flow in the Osborn system during the 100-year storm north of the Arizona Canal.

The existing discharge pipe is assumed to operate under inlet control. As seen in Alternative Condition 1, the maximum outflow through the existing pipe is estimated at 343 cfs. It is assumed that there are no backwater effects in the storm drain downstream from the basin. The hypothetical discharge pipe to the Osborn Road storm drain is sized to restrict the flow that enters the Osborn Road Storm Drain to a maximum of 35 cfs. The Osborn Road storm drain has an excess capacity of approximately 35 cfs. The hypothetical pipe is assumed to have a constant discharge of 35 cfs.

Results
The existing detention basin is not able to contain the runoff during the design storm. Assuming an unimpeded discharge in the existing pipe and a constant discharge of 35 cfs to the proposed Osborn Road Storm Drain, the existing basin has a peak stage of 1276.1. Additional detention or increased discharge capacity is required to allow the basin to operate during the design storm without flooding.

Estimated Cost
The cost of the improvements for this alternative is estimated at $2.1 million.

Alternative Condition Number 7
Description
Alternative Condition Number 6 is modeled by HEC-1 model Osbext.dat. The physical conditions considered are an enlarged detention basin, the existing discharge pipe and a second hypothetical 30-inch discharge pipe connected to the proposed Osborn Road storm drain. The Osborn Road storm drain is designed to convey the 10-year storm. Alternative Condition Number 7 assumes a 10-year peak flow in the Osborn system during the 100-year storm north of the Arizona Canal.

The existing discharge pipe is assumed to operate with a maximum discharge rate of 100 cfs. It is assumed that backwater effects in the storm drain downstream from the basin limit the discharge rate to 100 cfs. The basin discharge is modeled as a culvert in inlet control for flows below 100 cfs. The hypothetical discharge pipe to the Osborn Road storm drain is sized to restrict the flow that enters the Osborn Road Storm Drain to a maximum of 35 cfs. The Osborn Road storm drain has an excess capacity of approximately 30 to 35 cfs. StormCad models included in the Appendix show the Osborn system operating without flooding (downstream from Navajo Trail) if a hypothetical pipe from Arcadia contributes 30 cfs. A second model shows the HGL in the Osborn storm drain above the ground elevation if the same hypothetical pipe contributes 35 cfs. The hypothetical pipe is assumed to have a constant discharge of 35 cfs.

Results
The existing detention basin is enlarged by removing five existing houses and excavating the site. This scenario is only valid if the discharge pipe is able to operate under inlet control with a maximum discharge of 100 cfs. Addition of the storm drain to Osborn Road does not provide an improvement over Alternative Condition Number 4. In Alternative Number 4, the discharge from the existing pipe was limited to 100 cfs. The removal of 5 houses was required to provide sufficient detention for the system to operate. This scenario also requires the removal of 5 houses.

Estimated Cost
The cost of the improvements for this alternative is estimated at $4.5 million.

Alternative Condition Number 8
Description
Alternative Condition Number 8 is modeled by HEC-1 model Hypono.dat. The physical conditions considered are a hypothetical storm drain between the existing detention basin and Indian Bend Wash. The existing discharge pipe is considered to have zero

outflow under this scenario. The route for the hypothetical storm drain is indeterminate and may ultimately not be feasible. Numerous conflicts with existing utilities are known to exist if a southern route is considered. Installation of the Osborn Road storm drain may eliminate any practical routes to the south. Hydraulic calculations are based on average slopes and distances between the detention basin and the wash. Additional inflow to the system between Indian Bend Wash and the existing detention basin are not considered.

The hydraulic model for the hypothetical storm drain is based on three feet of tailwater above the outlet pipe in Indian Bend Wash. An HY8/StormCad analysis indicates the hypothetical outlet will operate under outlet control up to elevation 1274. The discharge curve in the HEC-1 model reflects these conditions.

Results
The analysis shows that a hypothetical storm drain with a diameter of 102 inches is adequate to drain the existing detention basin without causing flooding. However, review of the output from the HEC-1 model indicates that the calculated water surface elevation in the detention basin is 1274.1. This is the maximum practical water surface in the basin. Although the 102-inch pipe meets the design conditions, it is doubtful that a functioning system could be constructed with 102-inch pipe. A minimum pipe size for this type of system is more likely to be 108 inches or 11'x6' concrete box culvert. Pipe size would be expected to increase dramatically if the system were to collect local runoff between the basin and Indian Bend Wash.

Estimated Cost
The cost of the improvements for this alternative is estimated at approximately $4 to $6 million per mile. Total cost of the project could range from $5 to $11 million depending on the length of the system and the difficulty of construction.

A Summary Table of the results of these analyses is included on the following page.

4.0 SUMMARY AND CONCLUSIONS

The existing detention basin and discharge pipe are inadequate during the 100-year storm. Flooding is expected to occur without an increase in detention basin volume or an increase in the carrying capacity of the discharge pipe. The discharge capacity of the existing 72-inch outflow pipe is unknown during a storm event. Inflows into the system downstream from the detention basin are expected to cause backwater effects in the basin, but the extent of these effects is unknown.

The excess capacity in the proposed Osborn Road storm drain is approximately 35 cfs. Providing a connection between the existing detention basin and the Osborn Road storm drain does not provide sufficient discharge capacity to drain the basin during the 100-year storm, even if the existing 72-inch discharge pipe is able to operate under inlet control throughout the storm. Additional detention volume is also required under this scenario. At a minimum, two houses would have to be removed to provide sufficient detention volume. Models show that the existing 72-inch discharge pipe

operating under inlet control is sufficient to drain the basin if two houses are removed to provide extra detention volume.

Depending on the actual operation of the existing 72-inch discharge line during a storm event, removal of two to fourteen houses is required to provide sufficient detention volume to provide flood protection during a 100-year storm. The area that would be removed from the floodplain by these improvements is unknown. Bottlenecks in the drainage pathways that convey runoff to the detention basin could cause localized flooding as the runoff travels toward the basin. Improvement of existing systems or installation of new storm drains to convey flow to the existing detention basin could result in substantial increases in project cost.

A hypothetical storm drain designed to drain the basin during the 100-year storm would be approximately 102 inches in diameter. Routing the storm drain to Indian Bend Wash will be extremely difficult. The Osborn Road corridor is heavily traveled, has numerous utilities and has large diameter storm drains in several locations, including the proposed Osborn Road storm drain. This corridor was examined in-depth during the Alternative Analysis Study for the Osborn Road storm drain. It was not considered a suitable location for a large diameter storm drain. The Osborn Road storm drain occupies the Earll Drive corridor. The Scottsdale Road Corridor has numerous existing utilities, including a 90-inch storm drain. It is also a principal north/south traffic corridor through the area. Indian School Road is a possible corridor, but it is heavily traveled and was recently widened and improved. Additional construction along Indian School Road may have undesirable ramifications. There does not appear to be an unencumbered route between the existing detention basin and Indian Bend Wash.

Summary Table

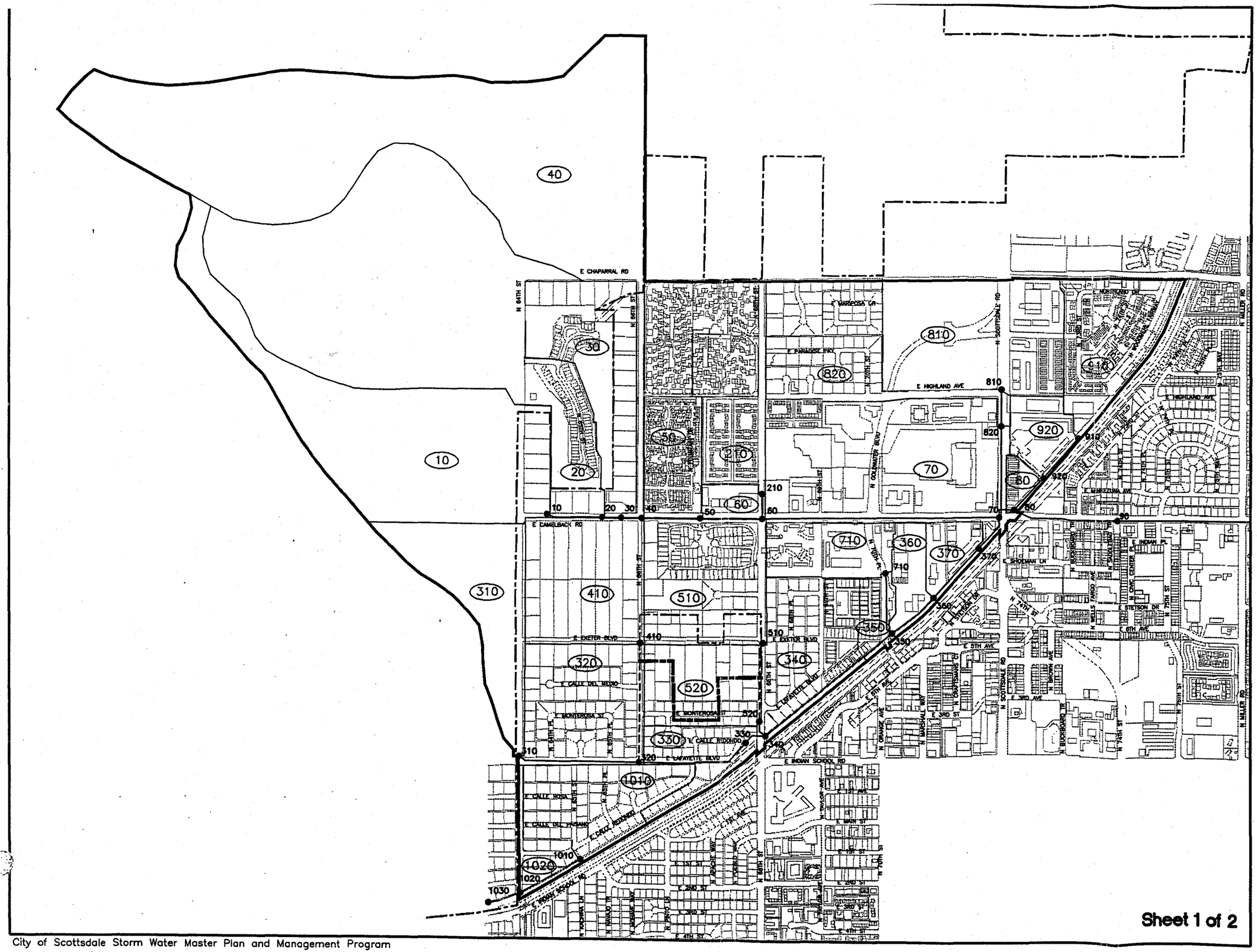
Alternative Condition	[1]Existing Outlet Assumed Discharge Condition	Peak Flow in Existing Outlet	Peak Flow to Osborn Outfall	Enlarge Existing Detention Basin	Houses Removed	Estimated Cost	100-year Protection Provided?
1	Inlet Control	343	NA	No	0	NA	No
2	Inlet Control	326	NA	Yes	2	$2.5 mil	Yes
3	200 cfs maximum	200	NA	Yes	4	$2.6 mil	Yes
4	100 cfs maximum	100	NA	Yes	5	$4.1 mil	Yes
5	0	0	NA	Yes	14	$11.9 mil	Yes
6	Inlet Control	343	35	No	0	$2.1 mil	No
7	100 cfs maximum	100	35	Yes	5	$4.5 mil	Yes
8	0	0	See Footnote 2	No	0	$5 mil to $11 mil	Yes

[1]Actual flow conditions are unknown. Extensive studies are required to determine actual outflow conditions. Outflows shown are assumed for purposes of estimation only.

[2]Peak discharge of 450 cfs to hypothetical system required to drain existing detention basin without causing flooding during 100-year storm. Analysis assumes no flow into the Osborn Outfall.

APPENDIX

Existing Hydrologic Mapping



Sheet 1 of 2

0 500 1000

1" = 1000'

Legend

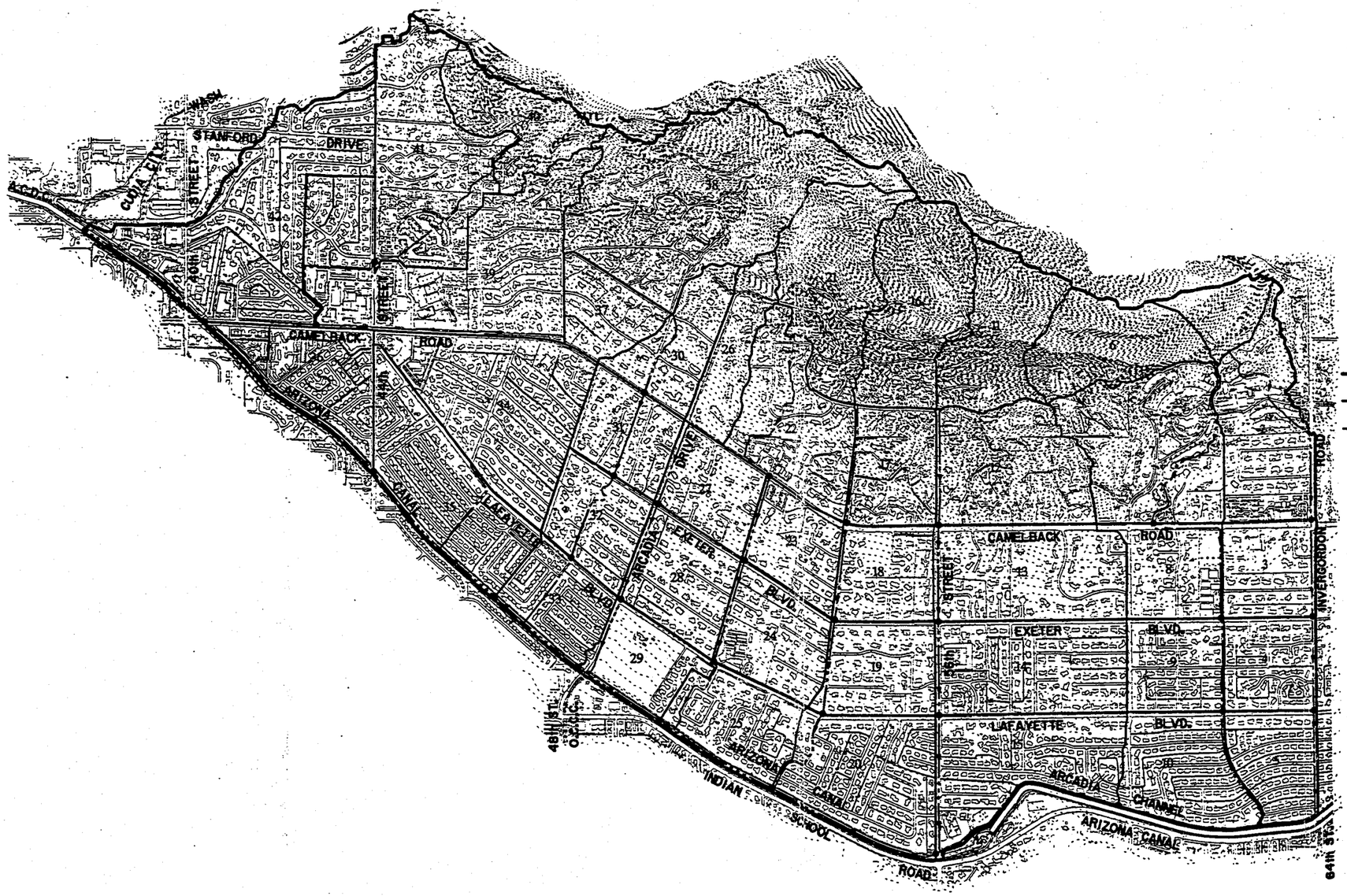
- Analysis Node
- Storage Basin
- Basin Boundary
- Drainage Area
- Roadway Reach
- Channel
- Pipe/Culvert
- City Boundary

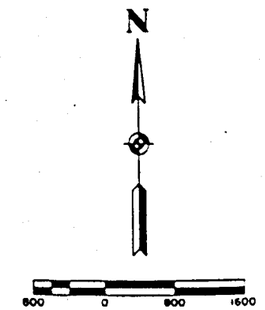
City of Scottsdale

BOYLE ENGINEERING CORPORATION

Basin 17 Camelback \ Scottsdale Rd. Drainage Map

FILE NAME: ALT-DRA.DGN 08-15-95





LEGEND

- WATERSHED BOUNDARY
- SUBBASIN BOUNDARY
- ROUTING REACH
- 2 SUBBASIN IDENTIFICATION NUMBER
- ● CONCENTRATION POINT

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
ENGINEERING DIVISION

ARCADIA AREA
DRAINAGE STUDY
PROJECT NO. 94-21

	BY	DATE
DESIGNED	L. GRAND	01-95
DRAWN	S. SMITH	02-95
CHECKED	[illegible]	04-95

HUITT - ZOLLARS INC.
CONSULTING ENGINEERS

DRAINAGE AREA MAP

FIGURE
IV-1

Alternative Condition Number 1

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  15:14:30  *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
****************************************
```

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

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

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

1 HEC-1 INPUT PAGE 1

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

  1           ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
  2           ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
  3           ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
  4           ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
  5           ID
  6           ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
  7           ID          ALTERNATIVE CONDITION NO. 1- EXISTING DETENTION BASIN,
```

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

```
 8          ID                                        EXISTING OUTFALL
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: EXTEXT.DAT
13          ID
14          IT       2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI       0       0       0       0       0       0       0       0       0       0
18          QI       0       1       1       1       1       2       2       3       3       4
19          QI       4       4       4       4       4       4       4       4       4       4
20          QI       4       4       4       4       5       5       5       5       5       5
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23          QI       9       9      10      10      11      12      12      13      13      14
24          QI      14      15      15      16      16      17      17      18      19      21
25          QI      24      27      32      38      46      56      68      82     101     128
26          QI     176     265     411     558     635     634     597     554     522     503
27          QI     491     477     455     426     396     367     342     319     299     280
28          QI     263     254     249     248     253     260     264     269     273     276
29          QI     280     285     290     292     291     290     283     276     278     287
30          QI     297     286     275     263     250     237     222     207     193     180
31          QI     168     158     148     139     130     122     115     107     101      95
32          QI      89      84      79      75      70      66      63      60      57      54
33          QI      52      50      48      46      44      43      41      40      39      38
34          QI      37      36      35      34      34      33      32      32      31      30
35          QI      30      29      29      28      28      27      26      26      25      24
36          QI      23      21      20      19      18      17      16      15      14      13
37          QI      13      12      11      11      10      10       9       9       9       8
38          QI       8       8       7       7       7       7       6       6       6       6
39          QI       5       5       5       5       5       5       4       4       4       4
40          QI       4       4       4       4       3       3       3       3       3       3
41          QI       3       3       3       3       3       2       2       2       2       2
42          QI       2       2       2       2       2       2       2       2       2       2
43          QI       2       2       2       2       2       2       1       1       1       1
44          QI       1       1       1       1       1       1       1       1       1       1
45          QI       1       1       1       1       1       1       1       1       1       1
46          QI       1       1       1       1       1       1       1       1       1       1

47          KK  RETAIN
48          KM   EXISTING RETENTION BASIN NORTH OF ARIZONA CANAL
49          KM   ASSUME VERTICAL STORAGE ABOVE ELEVATION 1274.0
50          KM   ASSUME FIXED OUTFLOW ABOVE ELEVATION 1274.0
```

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

```
          51          RS       1    STOR       0
          52          SA    0.13    0.18    0.21    0.25    0.29    0.32    0.36    0.40    1.38    1.38
          53          SE    1265    1266    1267    1268    1269    1270    1271    1272    1274    1300
1                                                   HEC-1 INPUT                                                PAGE   2

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

          54          SQ       0      40      80     120     160     200     240     320     343     343
          55          SE    1265 1267.08 1267.61 1268.53 1269.37 1270.20 1271.09 1273.25  1274.0    1300
          56          ZZ
1*****************************************                                                  ****************************************
 *                                       *                                                  *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                  *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991               *                                                  *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.0.1E              *                                                  *          609 SECOND STREET           *
 *     Lahey F77L-EM/32 version 5.01     *                                                  *       DAVIS, CALIFORNIA 95616        *
 *       Dodson & Associates, Inc.       *                                                  *           (916) 551-1748             *
 *  RUN DATE  04/06/00  TIME  15:14:30   *                                                  *                                      *
 *****************************************                                                  ****************************************
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COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 1- EXISTING DETENTION BASIN,
EXISTING OUTFALL

ALAN HUMPHREY
9/99

FILE: EXTEXT.DAT

```
     IT          HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
                      IDATE     21MAY97  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     21MAY97  ENDING DATE
                     NDTIME        0958  ENDING TIME
```

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

ICENT 19 CENTURY MARK

COMPUTATION INTERVAL 0.03 HOURS
TOTAL TIME BASE 9.97 HOURS

ENGLISH UNITS

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

*** ***

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              **************
              *            *
  15 KK       *     FLOOD  *
              *            *
              **************
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68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

SUBBASIN RUNOFF DATA

0 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

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HYDROGRAPH AT STATION FLOOD

****

DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	21 MAY 0230	76	17.	21 MAY 0500	151	89.	21 MAY 0730	226	5.
21 MAY 0002	2	0.	21 MAY 0232	77	17.	21 MAY 0502	152	84.	21 MAY 0732	227	4.
21 MAY 0004	3	0.	21 MAY 0234	78	18.	21 MAY 0504	153	79.	21 MAY 0734	228	4.
21 MAY 0006	4	0.	21 MAY 0236	79	19.	21 MAY 0506	154	75.	21 MAY 0736	229	4.

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

21 MAY 0008	5	0.	*	21 MAY 0238	80	21.	*	21 MAY 0508	155	70.	*	21 MAY 0738	230	4.
21 MAY 0010	6	0.	*	21 MAY 0240	81	24.	*	21 MAY 0510	156	66.	*	21 MAY 0740	231	4.
21 MAY 0012	7	0.	*	21 MAY 0242	82	27.	*	21 MAY 0512	157	63.	*	21 MAY 0742	232	4.
21 MAY 0014	8	0.	*	21 MAY 0244	83	32.	*	21 MAY 0514	158	60.	*	21 MAY 0744	233	4.
21 MAY 0016	9	0.	*	21 MAY 0246	84	38.	*	21 MAY 0516	159	57.	*	21 MAY 0746	234	4.
21 MAY 0018	10	0.	*	21 MAY 0248	85	46.	*	21 MAY 0518	160	54.	*	21 MAY 0748	235	3.
21 MAY 0020	11	0.	*	21 MAY 0250	86	56.	*	21 MAY 0520	161	52.	*	21 MAY 0750	236	3.
21 MAY 0022	12	1.	*	21 MAY 0252	87	68.	*	21 MAY 0522	162	50.	*	21 MAY 0752	237	3.
21 MAY 0024	13	1.	*	21 MAY 0254	88	82.	*	21 MAY 0524	163	48.	*	21 MAY 0754	238	3.
21 MAY 0026	14	1.	*	21 MAY 0256	89	101.	*	21 MAY 0526	164	46.	*	21 MAY 0756	239	3.
21 MAY 0028	15	1.	*	21 MAY 0258	90	128.	*	21 MAY 0528	165	44.	*	21 MAY 0758	240	3.
21 MAY 0030	16	2.	*	21 MAY 0300	91	176.	*	21 MAY 0530	166	43.	*	21 MAY 0800	241	3.
21 MAY 0032	17	2.	*	21 MAY 0302	92	265.	*	21 MAY 0532	167	41.	*	21 MAY 0802	242	3.
21 MAY 0034	18	3.	*	21 MAY 0304	93	411.	*	21 MAY 0534	168	40.	*	21 MAY 0804	243	3.
21 MAY 0036	19	3.	*	21 MAY 0306	94	558.	*	21 MAY 0536	169	39.	*	21 MAY 0806	244	3.
21 MAY 0038	20	4.	*	21 MAY 0308	95	635.	*	21 MAY 0538	170	38.	*	21 MAY 0808	245	3.
21 MAY 0040	21	4.	*	21 MAY 0310	96	634.	*	21 MAY 0540	171	37.	*	21 MAY 0810	246	2.
21 MAY 0042	22	4.	*	21 MAY 0312	97	597.	*	21 MAY 0542	172	36.	*	21 MAY 0812	247	2.
21 MAY 0044	23	4.	*	21 MAY 0314	98	554.	*	21 MAY 0544	173	35.	*	21 MAY 0814	248	2.
21 MAY 0046	24	4.	*	21 MAY 0316	99	522.	*	21 MAY 0546	174	34.	*	21 MAY 0816	249	2.
21 MAY 0048	25	4.	*	21 MAY 0318	100	503.	*	21 MAY 0548	175	34.	*	21 MAY 0818	250	2.
21 MAY 0050	26	4.	*	21 MAY 0320	101	491.	*	21 MAY 0550	176	33.	*	21 MAY 0820	251	2.
21 MAY 0052	27	4.	*	21 MAY 0322	102	477.	*	21 MAY 0552	177	32.	*	21 MAY 0822	252	2.
21 MAY 0054	28	4.	*	21 MAY 0324	103	455.	*	21 MAY 0554	178	32.	*	21 MAY 0824	253	2.
21 MAY 0056	29	4.	*	21 MAY 0326	104	426.	*	21 MAY 0556	179	31.	*	21 MAY 0826	254	2.
21 MAY 0058	30	4.	*	21 MAY 0328	105	396.	*	21 MAY 0558	180	30.	*	21 MAY 0828	255	2.
21 MAY 0100	31	4.	*	21 MAY 0330	106	367.	*	21 MAY 0600	181	30.	*	21 MAY 0830	256	2.
21 MAY 0102	32	4.	*	21 MAY 0332	107	342.	*	21 MAY 0602	182	29.	*	21 MAY 0832	257	2.
21 MAY 0104	33	4.	*	21 MAY 0334	108	319.	*	21 MAY 0604	183	29.	*	21 MAY 0834	258	2.
21 MAY 0106	34	4.	*	21 MAY 0336	109	299.	*	21 MAY 0606	184	28.	*	21 MAY 0836	259	2.
21 MAY 0108	35	5.	*	21 MAY 0338	110	280.	*	21 MAY 0608	185	28.	*	21 MAY 0838	260	2.
21 MAY 0110	36	5.	*	21 MAY 0340	111	263.	*	21 MAY 0610	186	27.	*	21 MAY 0840	261	2.
21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

21 MAY 0138	50	5.	21 MAY 0408	125	291.	21 MAY 0638	200	13.	21 MAY 0908	275	1.
21 MAY 0140	51	5.	21 MAY 0410	126	290.	21 MAY 0640	201	13.	21 MAY 0910	276	1.
21 MAY 0142	52	6.	21 MAY 0412	127	283.	21 MAY 0642	202	12.	21 MAY 0912	277	1.
21 MAY 0144	53	6.	21 MAY 0414	128	276.	21 MAY 0644	203	11.	21 MAY 0914	278	1.
21 MAY 0146	54	6.	21 MAY 0416	129	278.	21 MAY 0646	204	11.	21 MAY 0916	279	1.
21 MAY 0148	55	6.	21 MAY 0418	130	287.	21 MAY 0648	205	10.	21 MAY 0918	280	1.
21 MAY 0150	56	7.	21 MAY 0420	131	297.	21 MAY 0650	206	10.	21 MAY 0920	281	1.
21 MAY 0152	57	7.	21 MAY 0422	132	286.	21 MAY 0652	207	9.	21 MAY 0922	282	1.
21 MAY 0154	58	7.	21 MAY 0424	133	275.	21 MAY 0654	208	9.	21 MAY 0924	283	1.
21 MAY 0156	59	8.	21 MAY 0426	134	263.	21 MAY 0656	209	9.	21 MAY 0926	284	1.
21 MAY 0158	60	8.	21 MAY 0428	135	250.	21 MAY 0658	210	8.	21 MAY 0928	285	1.
21 MAY 0200	61	9.	21 MAY 0430	136	237.	21 MAY 0700	211	8.	21 MAY 0930	286	1.
21 MAY 0202	62	9.	21 MAY 0432	137	222.	21 MAY 0702	212	8.	21 MAY 0932	287	1.
21 MAY 0204	63	10.	21 MAY 0434	138	207.	21 MAY 0704	213	7.	21 MAY 0934	288	1.
21 MAY 0206	64	10.	21 MAY 0436	139	193.	21 MAY 0706	214	7.	21 MAY 0936	289	1.
21 MAY 0208	65	11.	21 MAY 0438	140	180.	21 MAY 0708	215	7.	21 MAY 0938	290	1.
21 MAY 0210	66	12.	21 MAY 0440	141	168.	21 MAY 0710	216	7.	21 MAY 0940	291	1.
21 MAY 0212	67	12.	21 MAY 0442	142	158.	21 MAY 0712	217	6.	21 MAY 0942	292	1.
21 MAY 0214	68	13.	21 MAY 0444	143	148.	21 MAY 0714	218	6.	21 MAY 0944	293	1.
21 MAY 0216	69	13.	21 MAY 0446	144	139.	21 MAY 0716	219	6.	21 MAY 0946	294	1.
21 MAY 0218	70	14.	21 MAY 0448	145	130.	21 MAY 0718	220	6.	21 MAY 0948	295	1.
21 MAY 0220	71	14.	21 MAY 0450	146	122.	21 MAY 0720	221	5.	21 MAY 0950	296	1.
21 MAY 0222	72	15.	21 MAY 0452	147	115.	21 MAY 0722	222	5.	21 MAY 0952	297	1.
21 MAY 0224	73	15.	21 MAY 0454	148	107.	21 MAY 0724	223	5.	21 MAY 0954	298	1.
21 MAY 0226	74	16.	21 MAY 0456	149	101.	21 MAY 0726	224	5.	21 MAY 0956	299	1.
21 MAY 0228	75	16.	21 MAY 0458	150	95.	21 MAY 0728	225	5.	21 MAY 0958	300	1.

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 635.	3.13		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

CUMULATIVE AREA = 0.00 SQ MI

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                **************
                *            *
47 KK           *    RETAIN  *
                *            *
                **************
                              EXISTING RETENTION BASIN NORTH OF ARIZONA CANAL
                              ASSUME VERTICAL STORAGE ABOVE ELEVATION 1274.0
                              ASSUME FIXED OUTFLOW ABOVE ELEVATION 1274.0

                HYDROGRAPH ROUTING DATA

51 RS             STORAGE ROUTING
                       NSTPS          1  NUMBER OF SUBREACHES
                        ITYP       STOR  TYPE OF INITIAL CONDITION
                      RSVRIC       0.00  INITIAL CONDITION
                           X       0.00 WORKING R AND D COEFFICIENT

52 SA                  AREA        0.1       0.2       0.2       0.3       0.3       0.3       0.4       0.4       1.4       1.4

53 SE             ELEVATION    1265.00   1266.00   1267.00   1268.00   1269.00   1270.00   1271.00   1272.00   1274.00   1300.00

54 SQ             DISCHARGE         0.       40.       80.      120.      160.      200.      240.      320.      343.      343.

55 SE             ELEVATION    1265.00   1267.08   1267.61   1268.53   1269.37   1270.20   1271.09   1273.25   1274.00   1300.00

                                                        ***

                                          COMPUTED STORAGE-ELEVATION DATA

                STORAGE        0.00      0.15      0.35      0.58      0.85      1.15      1.49      1.87      3.56     39.44
                ELEVATION   1265.00   1266.00   1267.00   1268.00   1269.00   1270.00   1271.00   1272.00   1274.00   1300.00

                                       COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                STORAGE        0.00      0.15      0.35      0.37      0.48      0.58      0.72      0.85      0.96      1.15
                OUTFLOW        0.00     19.23     38.46     40.00     80.00     96.96    120.00    142.38    160.00    190.36
                ELEVATION   1265.00   1266.00   1267.00   1267.08   1267.61   1268.00   1268.53   1269.00   1269.37   1270.00

                STORAGE        1.22      1.49      1.53      1.87      2.69      3.56     39.44
                OUTFLOW      200.00    235.96    240.00    273.70    320.00    343.00    343.00
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Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

ELEVATION 1270.20 1271.00 1271.09 1272.00 1273.25 1274.00 1300.00

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HYDROGRAPH AT STATION RETAIN

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DA MON HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA MON HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA MON HRMN	ORD	OUTFLOW	STORAGE	STAGE
21 MAY 0000	1	0.	0.0	1265.0	21 MAY 0320	101	343.	6.5	1276.1	21 MAY 0640	201	15.	0.1	1265.8
21 MAY 0002	2	0.	0.0	1265.0	21 MAY 0322	102	343.	6.8	1276.4	21 MAY 0642	202	14.	0.1	1265.8
21 MAY 0004	3	0.	0.0	1265.0	21 MAY 0324	103	343.	7.2	1276.6	21 MAY 0644	203	14.	0.1	1265.7
21 MAY 0006	4	0.	0.0	1265.0	21 MAY 0326	104	343.	7.5	1276.8	21 MAY 0646	204	13.	0.1	1265.7
21 MAY 0008	5	0.	0.0	1265.0	21 MAY 0328	105	343.	7.6	1277.0	21 MAY 0648	205	12.	0.1	1265.6
21 MAY 0010	6	0.	0.0	1265.0	21 MAY 0330	106	343.	7.7	1277.0	21 MAY 0650	206	12.	0.1	1265.6
21 MAY 0012	7	0.	0.0	1265.0	21 MAY 0332	107	343.	7.8	1277.1	21 MAY 0652	207	11.	0.1	1265.6
21 MAY 0014	8	0.	0.0	1265.0	21 MAY 0334	108	343.	7.7	1277.0	21 MAY 0654	208	10.	0.1	1265.5
21 MAY 0016	9	0.	0.0	1265.0	21 MAY 0336	109	343.	7.6	1277.0	21 MAY 0656	209	10.	0.1	1265.5
21 MAY 0018	10	0.	0.0	1265.0	21 MAY 0338	110	343.	7.5	1276.9	21 MAY 0658	210	10.	0.1	1265.5
21 MAY 0020	11	0.	0.0	1265.0	21 MAY 0340	111	343.	7.3	1276.7	21 MAY 0700	211	9.	0.1	1265.5
21 MAY 0022	12	0.	0.0	1265.0	21 MAY 0342	112	343.	7.1	1276.5	21 MAY 0702	212	9.	0.1	1265.5
21 MAY 0024	13	0.	0.0	1265.0	21 MAY 0344	113	343.	6.8	1276.4	21 MAY 0704	213	8.	0.1	1265.4
21 MAY 0026	14	1.	0.0	1265.0	21 MAY 0346	114	343.	6.6	1276.2	21 MAY 0706	214	8.	0.1	1265.4
21 MAY 0028	15	1.	0.0	1265.0	21 MAY 0348	115	343.	6.3	1276.0	21 MAY 0708	215	8.	0.1	1265.4
21 MAY 0030	16	1.	0.0	1265.0	21 MAY 0350	116	343.	6.1	1275.8	21 MAY 0710	216	7.	0.1	1265.4
21 MAY 0032	17	1.	0.0	1265.1	21 MAY 0352	117	343.	5.8	1275.7	21 MAY 0712	217	7.	0.1	1265.4
21 MAY 0034	18	2.	0.0	1265.1	21 MAY 0354	118	343.	5.6	1275.5	21 MAY 0714	218	7.	0.1	1265.4
21 MAY 0036	19	2.	0.0	1265.1	21 MAY 0356	119	343.	5.4	1275.4	21 MAY 0716	219	7.	0.1	1265.3
21 MAY 0038	20	2.	0.0	1265.1	21 MAY 0358	120	343.	5.2	1275.2	21 MAY 0718	220	6.	0.1	1265.3
21 MAY 0040	21	3.	0.0	1265.2	21 MAY 0400	121	343.	5.1	1275.1	21 MAY 0720	221	6.	0.0	1265.3
21 MAY 0042	22	3.	0.0	1265.2	21 MAY 0402	122	343.	4.9	1275.0	21 MAY 0722	222	6.	0.0	1265.3
21 MAY 0044	23	3.	0.0	1265.2	21 MAY 0404	123	343.	4.7	1274.9	21 MAY 0724	223	6.	0.0	1265.3
21 MAY 0046	24	4.	0.0	1265.2	21 MAY 0406	124	343.	4.6	1274.8	21 MAY 0726	224	5.	0.0	1265.3
21 MAY 0048	25	4.	0.0	1265.2	21 MAY 0408	125	343.	4.5	1274.7	21 MAY 0728	225	5.	0.0	1265.3
21 MAY 0050	26	4.	0.0	1265.2	21 MAY 0410	126	343.	4.3	1274.6	21 MAY 0730	226	5.	0.0	1265.3
21 MAY 0052	27	4.	0.0	1265.2	21 MAY 0412	127	343.	4.2	1274.4	21 MAY 0732	227	5.	0.0	1265.3
21 MAY 0054	28	4.	0.0	1265.2	21 MAY 0414	128	343.	4.0	1274.3	21 MAY 0734	228	5.	0.0	1265.2
21 MAY 0056	29	4.	0.0	1265.2	21 MAY 0416	129	343.	3.8	1274.2	21 MAY 0736	229	4.	0.0	1265.2
21 MAY 0058	30	4.	0.0	1265.2	21 MAY 0418	130	343.	3.6	1274.1	21 MAY 0738	230	4.	0.0	1265.2
21 MAY 0100	31	4.	0.0	1265.2	21 MAY 0420	131	342.	3.5	1274.0	21 MAY 0740	231	4.	0.0	1265.2
21 MAY 0102	32	4.	0.0	1265.2	21 MAY 0422	132	338.	3.4	1273.8	21 MAY 0742	232	4.	0.0	1265.2
21 MAY 0104	33	4.	0.0	1265.2	21 MAY 0424	133	334.	3.2	1273.7	21 MAY 0744	233	4.	0.0	1265.2
21 MAY 0106	34	4.	0.0	1265.2	21 MAY 0426	134	329.	3.0	1273.6	21 MAY 0746	234	4.	0.0	1265.2
21 MAY 0108	35	4.	0.0	1265.2	21 MAY 0428	135	324.	2.8	1273.4	21 MAY 0748	235	4.	0.0	1265.2

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

21	MAY	0110	36	4.	0.0	1265.2	*	21	MAY	0430	136	317.	2.6	1273.2	*	21	MAY	0750	236	4.	0.0	1265.2
21	MAY	0112	37	5.	0.0	1265.2	*	21	MAY	0432	137	304.	2.4	1272.8	*	21	MAY	0752	237	3.	0.0	1265.2
21	MAY	0114	38	5.	0.0	1265.2	*	21	MAY	0434	138	291.	2.2	1272.5	*	21	MAY	0754	238	3.	0.0	1265.2
21	MAY	0116	39	5.	0.0	1265.2	*	21	MAY	0436	139	278.	1.9	1272.1	*	21	MAY	0756	239	3.	0.0	1265.2
21	MAY	0118	40	5.	0.0	1265.3	*	21	MAY	0438	140	259.	1.7	1271.6	*	21	MAY	0758	240	3.	0.0	1265.2
21	MAY	0120	41	5.	0.0	1265.3	*	21	MAY	0440	141	239.	1.5	1271.1	*	21	MAY	0800	241	3.	0.0	1265.2
21	MAY	0122	42	5.	0.0	1265.3	*	21	MAY	0442	142	216.	1.3	1270.6	*	21	MAY	0802	242	3.	0.0	1265.2
21	MAY	0124	43	5.	0.0	1265.3	*	21	MAY	0444	143	196.	1.2	1270.1	*	21	MAY	0804	243	3.	0.0	1265.2
21	MAY	0126	44	5.	0.0	1265.3	*	21	MAY	0446	144	178.	1.1	1269.7	*	21	MAY	0806	244	3.	0.0	1265.2
21	MAY	0128	45	5.	0.0	1265.3	*	21	MAY	0448	145	163.	1.0	1269.4	*	21	MAY	0808	245	3.	0.0	1265.2
21	MAY	0130	46	5.	0.0	1265.3	*	21	MAY	0450	146	149.	0.9	1269.1	*	21	MAY	0810	246	3.	0.0	1265.1
21	MAY	0132	47	5.	0.0	1265.3	*	21	MAY	0452	147	138.	0.8	1268.9	*	21	MAY	0812	247	3.	0.0	1265.1
21	MAY	0134	48	5.	0.0	1265.3	*	21	MAY	0454	148	128.	0.8	1268.7	*	21	MAY	0814	248	2.	0.0	1265.1
21	MAY	0136	49	5.	0.0	1265.3	*	21	MAY	0456	149	119.	0.7	1268.5	*	21	MAY	0816	249	2.	0.0	1265.1
21	MAY	0138	50	5.	0.0	1265.3	*	21	MAY	0458	150	111.	0.7	1268.3	*	21	MAY	0818	250	2.	0.0	1265.1
21	MAY	0140	51	5.	0.0	1265.3	*	21	MAY	0500	151	104.	0.6	1268.2	*	21	MAY	0820	251	2.	0.0	1265.1
21	MAY	0142	52	5.	0.0	1265.3	*	21	MAY	0502	152	97.	0.6	1268.0	*	21	MAY	0822	252	2.	0.0	1265.1
21	MAY	0144	53	5.	0.0	1265.3	*	21	MAY	0504	153	91.	0.5	1267.9	*	21	MAY	0824	253	2.	0.0	1265.1
21	MAY	0146	54	6.	0.0	1265.3	*	21	MAY	0506	154	86.	0.5	1267.7	*	21	MAY	0826	254	2.	0.0	1265.1
21	MAY	0148	55	6.	0.0	1265.3	*	21	MAY	0508	155	80.	0.5	1267.6	*	21	MAY	0828	255	2.	0.0	1265.1
21	MAY	0150	56	6.	0.0	1265.3	*	21	MAY	0510	156	73.	0.5	1267.5	*	21	MAY	0830	256	2.	0.0	1265.1
21	MAY	0152	57	6.	0.1	1265.3	*	21	MAY	0512	157	67.	0.4	1267.4	*	21	MAY	0832	257	2.	0.0	1265.1
21	MAY	0154	58	6.	0.1	1265.3	*	21	MAY	0514	158	64.	0.4	1267.4	*	21	MAY	0834	258	2.	0.0	1265.1
21	MAY	0156	59	7.	0.1	1265.4	*	21	MAY	0516	159	60.	0.4	1267.4	*	21	MAY	0836	259	2.	0.0	1265.1
21	MAY	0158	60	7.	0.1	1265.4	*	21	MAY	0518	160	57.	0.4	1267.3	*	21	MAY	0838	260	2.	0.0	1265.1
21	MAY	0200	61	8.	0.1	1265.4	*	21	MAY	0520	161	55.	0.4	1267.3	*	21	MAY	0840	261	2.	0.0	1265.1
21	MAY	0202	62	8.	0.1	1265.4	*	21	MAY	0522	162	52.	0.4	1267.2	*	21	MAY	0842	262	2.	0.0	1265.1
21	MAY	0204	63	8.	0.1	1265.4	*	21	MAY	0524	163	50.	0.4	1267.2	*	21	MAY	0844	263	2.	0.0	1265.1
21	MAY	0206	64	9.	0.1	1265.5	*	21	MAY	0526	164	48.	0.4	1267.2	*	21	MAY	0846	264	2.	0.0	1265.1
21	MAY	0208	65	9.	0.1	1265.5	*	21	MAY	0528	165	46.	0.4	1267.2	*	21	MAY	0848	265	2.	0.0	1265.1
21	MAY	0210	66	10.	0.1	1265.5	*	21	MAY	0530	166	44.	0.4	1267.1	*	21	MAY	0850	266	2.	0.0	1265.1
21	MAY	0212	67	11.	0.1	1265.5	*	21	MAY	0532	167	43.	0.4	1267.1	*	21	MAY	0852	267	2.	0.0	1265.1
21	MAY	0214	68	11.	0.1	1265.6	*	21	MAY	0534	168	41.	0.4	1267.1	*	21	MAY	0854	268	2.	0.0	1265.1
21	MAY	0216	69	12.	0.1	1265.6	*	21	MAY	0536	169	40.	0.4	1267.1	*	21	MAY	0856	269	1.	0.0	1265.1
21	MAY	0218	70	12.	0.1	1265.6	*	21	MAY	0538	170	40.	0.4	1267.1	*	21	MAY	0858	270	1.	0.0	1265.1
21	MAY	0220	71	13.	0.1	1265.7	*	21	MAY	0540	171	39.	0.4	1267.0	*	21	MAY	0900	271	1.	0.0	1265.1
21	MAY	0222	72	13.	0.1	1265.7	*	21	MAY	0542	172	39.	0.4	1267.0	*	21	MAY	0902	272	1.	0.0	1265.1
21	MAY	0224	73	14.	0.1	1265.7	*	21	MAY	0544	173	38.	0.3	1267.0	*	21	MAY	0904	273	1.	0.0	1265.1
21	MAY	0226	74	14.	0.1	1265.7	*	21	MAY	0546	174	37.	0.3	1266.9	*	21	MAY	0906	274	1.	0.0	1265.1
21	MAY	0228	75	15.	0.1	1265.8	*	21	MAY	0548	175	36.	0.3	1266.9	*	21	MAY	0908	275	1.	0.0	1265.1
21	MAY	0230	76	15.	0.1	1265.8	*	21	MAY	0550	176	36.	0.3	1266.9	*	21	MAY	0910	276	1.	0.0	1265.1
21	MAY	0232	77	16.	0.1	1265.8	*	21	MAY	0552	177	35.	0.3	1266.8	*	21	MAY	0912	277	1.	0.0	1265.1
21	MAY	0234	78	16.	0.1	1265.8	*	21	MAY	0554	178	34.	0.3	1266.8	*	21	MAY	0914	278	1.	0.0	1265.1
21	MAY	0236	79	17.	0.1	1265.9	*	21	MAY	0556	179	34.	0.3	1266.7	*	21	MAY	0916	279	1.	0.0	1265.1
21	MAY	0238	80	18.	0.1	1265.9	*	21	MAY	0558	180	33.	0.3	1266.7	*	21	MAY	0918	280	1.	0.0	1265.1

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

21 MAY 0240	81	19.	0.2	1266.0	*	21 MAY 0600	181	32.	0.3	1266.7	*	21 MAY 0920	281	1.	0.0	1265.1
21 MAY 0242	82	21.	0.2	1266.1	*	21 MAY 0602	182	32.	0.3	1266.6	*	21 MAY 0922	282	1.	0.0	1265.1
21 MAY 0244	83	23.	0.2	1266.2	*	21 MAY 0604	183	31.	0.3	1266.6	*	21 MAY 0924	283	1.	0.0	1265.1
21 MAY 0246	84	26.	0.2	1266.3	*	21 MAY 0606	184	30.	0.3	1266.6	*	21 MAY 0926	284	1.	0.0	1265.1
21 MAY 0248	85	30.	0.3	1266.5	*	21 MAY 0608	185	30.	0.3	1266.5	*	21 MAY 0928	285	1.	0.0	1265.1
21 MAY 0250	86	35.	0.3	1266.8	*	21 MAY 0610	186	29.	0.3	1266.5	*	21 MAY 0930	286	1.	0.0	1265.1
21 MAY 0252	87	43.	0.4	1267.1	*	21 MAY 0612	187	29.	0.2	1266.5	*	21 MAY 0932	287	1.	0.0	1265.1
21 MAY 0254	88	63.	0.4	1267.4	*	21 MAY 0614	188	28.	0.2	1266.5	*	21 MAY 0934	288	1.	0.0	1265.1
21 MAY 0256	89	81.	0.5	1267.6	*	21 MAY 0616	189	27.	0.2	1266.4	*	21 MAY 0936	289	1.	0.0	1265.1
21 MAY 0258	90	94.	0.6	1267.9	*	21 MAY 0618	190	27.	0.2	1266.4	*	21 MAY 0938	290	1.	0.0	1265.1
21 MAY 0300	91	116.	0.7	1268.4	*	21 MAY 0620	191	26.	0.2	1266.3	*	21 MAY 0940	291	1.	0.0	1265.1
21 MAY 0302	92	155.	0.9	1269.3	*	21 MAY 0622	192	25.	0.2	1266.3	*	21 MAY 0942	292	1.	0.0	1265.1
21 MAY 0304	93	217.	1.3	1270.6	*	21 MAY 0624	193	24.	0.2	1266.2	*	21 MAY 0944	293	1.	0.0	1265.1
21 MAY 0306	94	281.	2.0	1272.2	*	21 MAY 0626	194	23.	0.2	1266.2	*	21 MAY 0946	294	1.	0.0	1265.1
21 MAY 0308	95	323.	2.8	1273.4	*	21 MAY 0628	195	22.	0.2	1266.1	*	21 MAY 0948	295	1.	0.0	1265.1
21 MAY 0310	96	343.	3.6	1274.1	*	21 MAY 0630	196	21.	0.2	1266.1	*	21 MAY 0950	296	1.	0.0	1265.1
21 MAY 0312	97	343.	4.4	1274.6	*	21 MAY 0632	197	20.	0.2	1266.0	*	21 MAY 0952	297	1.	0.0	1265.1
21 MAY 0314	98	343.	5.0	1275.1	*	21 MAY 0634	198	19.	0.1	1266.0	*	21 MAY 0954	298	1.	0.0	1265.1
21 MAY 0316	99	343.	5.6	1275.5	*	21 MAY 0636	199	17.	0.1	1265.9	*	21 MAY 0956	299	1.	0.0	1265.1
21 MAY 0318	100	343.	6.0	1275.8	*	21 MAY 0638	200	16.	0.1	1265.8	*	21 MAY 0958	300	1.	0.0	1265.1
					*						*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 343.	3.17		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
8.	3.53	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1277.06	3.53	1268.71	1267.28	1267.28	1267.28

CUMULATIVE AREA = 0.00 SQ MI

1

RUNOFF SUMMARY

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

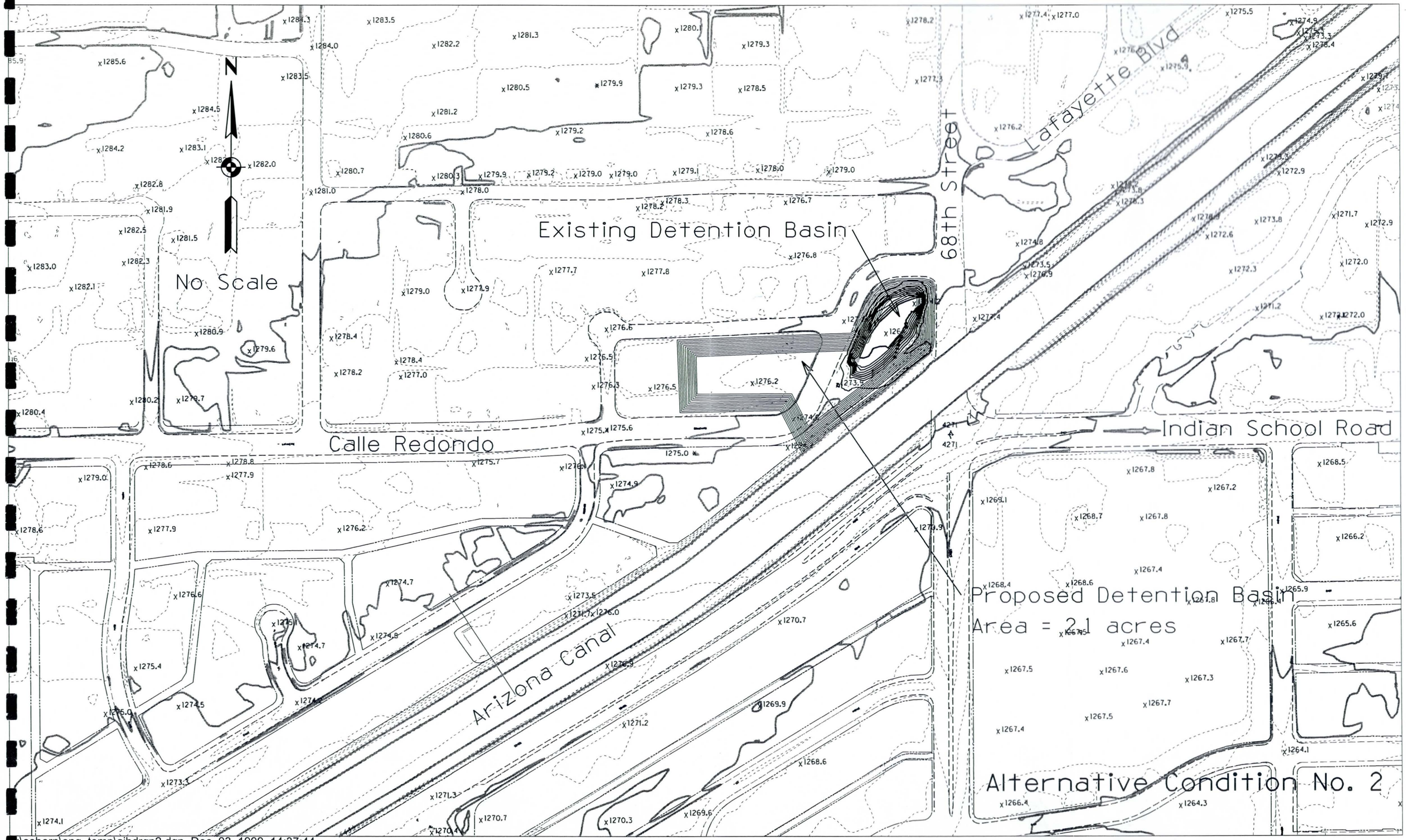
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00		
+	ROUTED TO	RETAIN	343.	3.17	116.	71.	71.	0.00	1277.06	3.53
+										

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

Condition No. 1
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control

Alternative Condition Number 2



:\osborn\eng_temp\ajhdrgn2.dgn Dec. 03, 1999 14:37:44

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  14:14:13  *
 ****************************************
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

1 HEC-1 INPUT PAGE 1

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

  1           ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
  2           ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
  3           ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
  4           ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
  5           ID
  6           ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
  7           ID          ALTERNATIVE CONDITION NO. 2- PROPOSED 100-YEAR DETENTION BASIN,
```

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

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 8          ID                                        EXISTING OUTFALL UNDER INLET CONTROL ONL
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: PROPEXT3.DAT
13          ID
14          IT       2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI       0       0       0       0       0       0       0       0       0       0
18          QI       0       1       1       1       1       2       2       3       3       4
19          QI       4       4       4       4       4       4       4       4       4       4
20          QI       4       4       4       4       5       5       5       5       5       5
21          QI       5       5       5       5       5       5       5       5       5       5
22          QI       5       6       6       6       6       7       7       7       8       8
23          QI       9       9      10      10      11      12      12      13      13      14
24          QI      14      15      15      16      16      17      17      18      19      21
25          QI      24      27      32      38      46      56      68      82     101     128
26          QI     176     265     411     558     635     634     597     554     522     503
27          QI     491     477     455     426     396     367     342     319     299     280
28          QI     263     254     249     248     253     260     264     269     273     276
29          QI     280     285     290     292     291     290     283     276     278     287
30          QI     297     286     275     263     250     237     222     207     193     180
31          QI     168     158     148     139     130     122     115     107     101      95
32          QI      89      84      79      75      70      66      63      60      57      54
33          QI      52      50      48      46      44      43      41      40      39      38
34          QI      37      36      35      34      34      33      32      32      31      30
35          QI      30      29      29      28      28      27      26      26      25      24
36          QI      23      21      20      19      18      17      16      15      14      13
37          QI      13      12      11      11      10      10       9       9       9       8
38          QI       8       8       7       7       7       7       6       6       6       6
39          QI       5       5       5       5       5       5       4       4       4       4
40          QI       4       4       4       4       3       3       3       3       3       3
41          QI       3       3       3       3       3       2       2       2       2       2
42          QI       2       2       2       2       2       2       2       2       2       2
43          QI       2       2       2       2       2       2       1       1       1       1
44          QI       1       1       1       1       1       1       1       1       1       1
45          QI       1       1       1       1       1       1       1       1       1       1
46          QI       1       1       1       1       1       1       1       1       1       1

47          KK  RETAIN
48          KM   RETENTION BASIN NORTH OF ARIZONA CANAL
49          KM   REMOVE 3 HOUSES
50          RS       1    STOR       0
```

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

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          51          SA    1.02    1.37    1.56    2.06
          52          SE    1264    1268    1270    1275
          53          SQ       0      40      80     120     160     200     240     320     360
1                                                HEC-1 INPUT                                                PAGE  2

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

          54          SE    1265 1267.08 1267.61 1268.53 1269.37 1270.20 1271.09 1273.25 1274.58
          55          ZZ
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.0.1E            *                                    *          609 SECOND STREET           *
 *     Lahey F77L-EM/32 version 5.01    *                                    *       DAVIS, CALIFORNIA 95616        *
 *       Dodson & Associates, Inc.      *                                    *           (916) 551-1748             *
 *  RUN DATE  04/06/00  TIME  14:14:13  *                                    *                                      *
 ****************************************                                    ****************************************
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COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 2- PROPOSED 100-YEAR DETENTION BASIN,
EXISTING OUTFALL UNDER INLET CONTROL ONL

ALAN HUMPHREY
9/99

FILE: PROPEXT3.DAT

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IT          HYDROGRAPH TIME DATA
                 NMIN           2  MINUTES IN COMPUTATION INTERVAL
                IDATE     21MAY97  STARTING DATE
                ITIME        0000  STARTING TIME
                   NQ         300  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE     21MAY97  ENDING DATE
               NDTIME        0958  ENDING TIME
               ICENT          19  CENTURY MARK
```

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

COMPUTATION INTERVAL 0.03 HOURS
TOTAL TIME BASE 9.97 HOURS

ENGLISH UNITS

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

*** ***

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              **************
              *            *
  15 KK       *     FLOOD  *
              *            *
              **************
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68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

SUBBASIN RUNOFF DATA

0 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

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HYDROGRAPH AT STATION FLOOD

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DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	*	21 MAY 0230	76	17.	*	21 MAY 0500	151	89.	*	21 MAY 0730	226	5.
21 MAY 0002	2	0.	*	21 MAY 0232	77	17.	*	21 MAY 0502	152	84.	*	21 MAY 0732	227	4.
21 MAY 0004	3	0.	*	21 MAY 0234	78	18.	*	21 MAY 0504	153	79.	*	21 MAY 0734	228	4.
21 MAY 0006	4	0.	*	21 MAY 0236	79	19.	*	21 MAY 0506	154	75.	*	21 MAY 0736	229	4.
21 MAY 0008	5	0.	*	21 MAY 0238	80	21.	*	21 MAY 0508	155	70.	*	21 MAY 0738	230	4.

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

21 MAY 0010	6	0.	*	21 MAY 0240	81	24.	*	21 MAY 0510	156	66.	*	21 MAY 0740	231	4.
21 MAY 0012	7	0.	*	21 MAY 0242	82	27.	*	21 MAY 0512	157	63.	*	21 MAY 0742	232	4.
21 MAY 0014	8	0.	*	21 MAY 0244	83	32.	*	21 MAY 0514	158	60.	*	21 MAY 0744	233	4.
21 MAY 0016	9	0.	*	21 MAY 0246	84	38.	*	21 MAY 0516	159	57.	*	21 MAY 0746	234	4.
21 MAY 0018	10	0.	*	21 MAY 0248	85	46.	*	21 MAY 0518	160	54.	*	21 MAY 0748	235	3.
21 MAY 0020	11	0.	*	21 MAY 0250	86	56.	*	21 MAY 0520	161	52.	*	21 MAY 0750	236	3.
21 MAY 0022	12	1.	*	21 MAY 0252	87	68.	*	21 MAY 0522	162	50.	*	21 MAY 0752	237	3.
21 MAY 0024	13	1.	*	21 MAY 0254	88	82.	*	21 MAY 0524	163	48.	*	21 MAY 0754	238	3.
21 MAY 0026	14	1.	*	21 MAY 0256	89	101.	*	21 MAY 0526	164	46.	*	21 MAY 0756	239	3.
21 MAY 0028	15	1.	*	21 MAY 0258	90	128.	*	21 MAY 0528	165	44.	*	21 MAY 0758	240	3.
21 MAY 0030	16	2.	*	21 MAY 0300	91	176.	*	21 MAY 0530	166	43.	*	21 MAY 0800	241	3.
21 MAY 0032	17	2.	*	21 MAY 0302	92	265.	*	21 MAY 0532	167	41.	*	21 MAY 0802	242	3.
21 MAY 0034	18	3.	*	21 MAY 0304	93	411.	*	21 MAY 0534	168	40.	*	21 MAY 0804	243	3.
21 MAY 0036	19	3.	*	21 MAY 0306	94	558.	*	21 MAY 0536	169	39.	*	21 MAY 0806	244	3.
21 MAY 0038	20	4.	*	21 MAY 0308	95	635.	*	21 MAY 0538	170	38.	*	21 MAY 0808	245	3.
21 MAY 0040	21	4.	*	21 MAY 0310	96	634.	*	21 MAY 0540	171	37.	*	21 MAY 0810	246	2.
21 MAY 0042	22	4.	*	21 MAY 0312	97	597.	*	21 MAY 0542	172	36.	*	21 MAY 0812	247	2.
21 MAY 0044	23	4.	*	21 MAY 0314	98	554.	*	21 MAY 0544	173	35.	*	21 MAY 0814	248	2.
21 MAY 0046	24	4.	*	21 MAY 0316	99	522.	*	21 MAY 0546	174	34.	*	21 MAY 0816	249	2.
21 MAY 0048	25	4.	*	21 MAY 0318	100	503.	*	21 MAY 0548	175	34.	*	21 MAY 0818	250	2.
21 MAY 0050	26	4.	*	21 MAY 0320	101	491.	*	21 MAY 0550	176	33.	*	21 MAY 0820	251	2.
21 MAY 0052	27	4.	*	21 MAY 0322	102	477.	*	21 MAY 0552	177	32.	*	21 MAY 0822	252	2.
21 MAY 0054	28	4.	*	21 MAY 0324	103	455.	*	21 MAY 0554	178	32.	*	21 MAY 0824	253	2.
21 MAY 0056	29	4.	*	21 MAY 0326	104	426.	*	21 MAY 0556	179	31.	*	21 MAY 0826	254	2.
21 MAY 0058	30	4.	*	21 MAY 0328	105	396.	*	21 MAY 0558	180	30.	*	21 MAY 0828	255	2.
21 MAY 0100	31	4.	*	21 MAY 0330	106	367.	*	21 MAY 0600	181	30.	*	21 MAY 0830	256	2.
21 MAY 0102	32	4.	*	21 MAY 0332	107	342.	*	21 MAY 0602	182	29.	*	21 MAY 0832	257	2.
21 MAY 0104	33	4.	*	21 MAY 0334	108	319.	*	21 MAY 0604	183	29.	*	21 MAY 0834	258	2.
21 MAY 0106	34	4.	*	21 MAY 0336	109	299.	*	21 MAY 0606	184	28.	*	21 MAY 0836	259	2.
21 MAY 0108	35	5.	*	21 MAY 0338	110	280.	*	21 MAY 0608	185	28.	*	21 MAY 0838	260	2.
21 MAY 0110	36	5.	*	21 MAY 0340	111	263.	*	21 MAY 0610	186	27.	*	21 MAY 0840	261	2.
21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
			*				*				*			

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	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	9.97-HR
+	(CFS)	(HR)					
			(CFS)				
+	635.	3.13		116.	71.	71.	71.
			(INCHES)	0.000	0.000	0.000	0.000
			(AC-FT)	58.	58.	58.	58.

CUMULATIVE AREA = 0.00 SQ MI

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          *            *
47 KK     *    RETAIN  *
          *            *
          **************
                         RETENTION BASIN NORTH OF ARIZONA CANAL
                         REMOVE 3 HOUSES

             HYDROGRAPH ROUTING DATA

50 RS          STORAGE ROUTING
                    NSTPS           1  NUMBER OF SUBREACHES
                     ITYP        STOR  TYPE OF INITIAL CONDITION
                   RSVRIC        0.00  INITIAL CONDITION
                        X        0.00 WORKING R AND D COEFFICIENT

51 SA              AREA         1.0       1.4       1.6       2.1

52 SE          ELEVATION     1264.00   1268.00   1270.00   1275.00

53 SQ          DISCHARGE          0.       40.       80.      120.      160.      200.      240.      320.      360.

54 SE          ELEVATION     1265.00   1267.08   1267.61   1268.53   1269.37   1270.20   1271.09   1273.25   1274.58
                                                             ***

                                          COMPUTED STORAGE-ELEVATION DATA

         STORAGE       0.00      4.76      7.69     16.71
       ELEVATION    1264.00   1268.00   1270.00   1275.00

                                       COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

         STORAGE       0.00      1.06      3.54      4.24      4.76      5.50      6.73      7.69      8.00      9.45
         OUTFLOW       0.00      0.00     40.00     80.00     96.96    120.00    160.00    190.36    200.00    240.00
       ELEVATION    1264.00   1265.00   1267.08   1267.61   1268.00   1268.53   1269.37   1270.00   1270.20   1271.09

         STORAGE      13.27     15.86     16.71
         OUTFLOW     320.00    360.00    372.63
       ELEVATION    1273.25   1274.58   1275.00
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                                          HYDROGRAPH AT STATION   RETAIN

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Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
21	MAY	0000	1	0.	0.0	1264.0	21	MAY	0320	101	291.	11.9	1272.5	21	MAY	0640	201	29.	2.8	1266.5
21	MAY	0002	2	0.	0.0	1264.0	21	MAY	0322	102	301.	12.4	1272.8	21	MAY	0642	202	28.	2.8	1266.4
21	MAY	0004	3	0.	0.0	1264.0	21	MAY	0324	103	311.	12.8	1273.0	21	MAY	0644	203	27.	2.7	1266.4
21	MAY	0006	4	0.	0.0	1264.0	21	MAY	0326	104	318.	13.2	1273.2	21	MAY	0646	204	26.	2.7	1266.4
21	MAY	0008	5	0.	0.0	1264.0	21	MAY	0328	105	322.	13.4	1273.3	21	MAY	0648	205	26.	2.7	1266.3
21	MAY	0010	6	0.	0.0	1264.0	21	MAY	0330	106	325.	13.6	1273.4	21	MAY	0650	206	25.	2.6	1266.3
21	MAY	0012	7	0.	0.0	1264.0	21	MAY	0332	107	326.	13.7	1273.5	21	MAY	0652	207	24.	2.6	1266.3
21	MAY	0014	8	0.	0.0	1264.0	21	MAY	0334	108	326.	13.7	1273.5	21	MAY	0654	208	24.	2.5	1266.2
21	MAY	0016	9	0.	0.0	1264.0	21	MAY	0336	109	326.	13.6	1273.4	21	MAY	0656	209	23.	2.5	1266.2
21	MAY	0018	10	0.	0.0	1264.0	21	MAY	0338	110	324.	13.5	1273.4	21	MAY	0658	210	22.	2.5	1266.2
21	MAY	0020	11	0.	0.0	1264.0	21	MAY	0340	111	322.	13.4	1273.3	21	MAY	0700	211	22.	2.4	1266.1
21	MAY	0022	12	0.	0.0	1264.0	21	MAY	0342	112	319.	13.2	1273.2	21	MAY	0702	212	21.	2.4	1266.1
21	MAY	0024	13	0.	0.0	1264.0	21	MAY	0344	113	315.	13.0	1273.1	21	MAY	0704	213	21.	2.3	1266.1
21	MAY	0026	14	0.	0.0	1264.0	21	MAY	0346	114	311.	12.9	1273.0	21	MAY	0706	214	20.	2.3	1266.0
21	MAY	0028	15	0.	0.0	1264.0	21	MAY	0348	115	308.	12.7	1272.9	21	MAY	0708	215	19.	2.3	1266.0
21	MAY	0030	16	0.	0.0	1264.0	21	MAY	0350	116	305.	12.6	1272.8	21	MAY	0710	216	19.	2.2	1266.0
21	MAY	0032	17	0.	0.0	1264.0	21	MAY	0352	117	303.	12.4	1272.8	21	MAY	0712	217	18.	2.2	1266.0
21	MAY	0034	18	0.	0.0	1264.0	21	MAY	0354	118	301.	12.3	1272.7	21	MAY	0714	218	18.	2.2	1265.9
21	MAY	0036	19	0.	0.0	1264.0	21	MAY	0356	119	299.	12.3	1272.7	21	MAY	0716	219	17.	2.1	1265.9
21	MAY	0038	20	0.	0.0	1264.0	21	MAY	0358	120	298.	12.2	1272.6	21	MAY	0718	220	17.	2.1	1265.9
21	MAY	0040	21	0.	0.1	1264.1	21	MAY	0400	121	297.	12.1	1272.6	21	MAY	0720	221	16.	2.1	1265.8
21	MAY	0042	22	0.	0.1	1264.1	21	MAY	0402	122	296.	12.1	1272.6	21	MAY	0722	222	16.	2.0	1265.8
21	MAY	0044	23	0.	0.1	1264.1	21	MAY	0404	123	295.	12.1	1272.6	21	MAY	0724	223	15.	2.0	1265.8
21	MAY	0046	24	0.	0.1	1264.1	21	MAY	0406	124	295.	12.1	1272.6	21	MAY	0726	224	15.	2.0	1265.8
21	MAY	0048	25	0.	0.1	1264.1	21	MAY	0408	125	295.	12.1	1272.6	21	MAY	0728	225	14.	2.0	1265.8
21	MAY	0050	26	0.	0.1	1264.1	21	MAY	0410	126	295.	12.1	1272.6	21	MAY	0730	226	14.	1.9	1265.7
21	MAY	0052	27	0.	0.1	1264.1	21	MAY	0412	127	294.	12.0	1272.6	21	MAY	0732	227	14.	1.9	1265.7
21	MAY	0054	28	0.	0.1	1264.1	21	MAY	0414	128	293.	12.0	1272.5	21	MAY	0734	228	13.	1.9	1265.7
21	MAY	0056	29	0.	0.1	1264.1	21	MAY	0416	129	292.	12.0	1272.5	21	MAY	0736	229	13.	1.9	1265.7
21	MAY	0058	30	0.	0.2	1264.1	21	MAY	0418	130	292.	11.9	1272.5	21	MAY	0738	230	12.	1.8	1265.6
21	MAY	0100	31	0.	0.2	1264.2	21	MAY	0420	131	292.	11.9	1272.5	21	MAY	0740	231	12.	1.8	1265.6
21	MAY	0102	32	0.	0.2	1264.2	21	MAY	0422	132	292.	11.9	1272.5	21	MAY	0742	232	12.	1.8	1265.6
21	MAY	0104	33	0.	0.2	1264.2	21	MAY	0424	133	291.	11.9	1272.5	21	MAY	0744	233	11.	1.8	1265.6
21	MAY	0106	34	0.	0.2	1264.2	21	MAY	0426	134	290.	11.8	1272.4	21	MAY	0746	234	11.	1.7	1265.6
21	MAY	0108	35	0.	0.2	1264.2	21	MAY	0428	135	288.	11.7	1272.4	21	MAY	0748	235	11.	1.7	1265.6
21	MAY	0110	36	0.	0.2	1264.2	21	MAY	0430	136	286.	11.6	1272.3	21	MAY	0750	236	10.	1.7	1265.5
21	MAY	0112	37	0.	0.2	1264.2	21	MAY	0432	137	282.	11.5	1272.2	21	MAY	0752	237	10.	1.7	1265.5
21	MAY	0114	38	0.	0.3	1264.2	21	MAY	0434	138	279.	11.3	1272.1	21	MAY	0754	238	10.	1.7	1265.5
21	MAY	0116	39	0.	0.3	1264.3	21	MAY	0436	139	274.	11.1	1272.0	21	MAY	0756	239	9.	1.6	1265.5
21	MAY	0118	40	0.	0.3	1264.3	21	MAY	0438	140	269.	10.8	1271.9	21	MAY	0758	240	9.	1.6	1265.5
21	MAY	0120	41	0.	0.3	1264.3	21	MAY	0440	141	264.	10.6	1271.7	21	MAY	0800	241	9.	1.6	1265.5
21	MAY	0122	42	0.	0.3	1264.3	21	MAY	0442	142	258.	10.3	1271.6	21	MAY	0802	242	9.	1.6	1265.5

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

21	MAY	0124	43	0.	0.3	1264.3	*	21	MAY	0444	143	252.	10.0	1271.4	*	21	MAY	0804	243	8.	1.6	1265.4
21	MAY	0126	44	0.	0.3	1264.3	*	21	MAY	0446	144	246.	9.7	1271.3	*	21	MAY	0806	244	8.	1.6	1265.4
21	MAY	0128	45	0.	0.3	1264.3	*	21	MAY	0448	145	240.	9.4	1271.1	*	21	MAY	0808	245	8.	1.6	1265.4
21	MAY	0130	46	0.	0.4	1264.3	*	21	MAY	0450	146	232.	9.1	1270.9	*	21	MAY	0810	246	8.	1.5	1265.4
21	MAY	0132	47	0.	0.4	1264.4	*	21	MAY	0452	147	223.	8.8	1270.7	*	21	MAY	0812	247	7.	1.5	1265.4
21	MAY	0134	48	0.	0.4	1264.4	*	21	MAY	0454	148	215.	8.5	1270.5	*	21	MAY	0814	248	7.	1.5	1265.4
21	MAY	0136	49	0.	0.4	1264.4	*	21	MAY	0456	149	207.	8.3	1270.4	*	21	MAY	0816	249	7.	1.5	1265.4
21	MAY	0138	50	0.	0.4	1264.4	*	21	MAY	0458	150	199.	8.0	1270.2	*	21	MAY	0818	250	7.	1.5	1265.4
21	MAY	0140	51	0.	0.4	1264.4	*	21	MAY	0500	151	190.	7.7	1270.0	*	21	MAY	0820	251	7.	1.5	1265.3
21	MAY	0142	52	0.	0.4	1264.4	*	21	MAY	0502	152	181.	7.4	1269.8	*	21	MAY	0822	252	6.	1.5	1265.3
21	MAY	0144	53	0.	0.5	1264.4	*	21	MAY	0504	153	173.	7.1	1269.6	*	21	MAY	0824	253	6.	1.4	1265.3
21	MAY	0146	54	0.	0.5	1264.5	*	21	MAY	0506	154	165.	6.9	1269.5	*	21	MAY	0826	254	6.	1.4	1265.3
21	MAY	0148	55	0.	0.5	1264.5	*	21	MAY	0508	155	157.	6.6	1269.3	*	21	MAY	0828	255	6.	1.4	1265.3
21	MAY	0150	56	0.	0.5	1264.5	*	21	MAY	0510	156	150.	6.4	1269.2	*	21	MAY	0830	256	6.	1.4	1265.3
21	MAY	0152	57	0.	0.5	1264.5	*	21	MAY	0512	157	142.	6.2	1269.0	*	21	MAY	0832	257	6.	1.4	1265.3
21	MAY	0154	58	0.	0.6	1264.5	*	21	MAY	0514	158	135.	6.0	1268.9	*	21	MAY	0834	258	5.	1.4	1265.3
21	MAY	0156	59	0.	0.6	1264.5	*	21	MAY	0516	159	129.	5.8	1268.7	*	21	MAY	0836	259	5.	1.4	1265.3
21	MAY	0158	60	0.	0.6	1264.6	*	21	MAY	0518	160	122.	5.6	1268.6	*	21	MAY	0838	260	5.	1.4	1265.3
21	MAY	0200	61	0.	0.6	1264.6	*	21	MAY	0520	161	117.	5.4	1268.5	*	21	MAY	0840	261	5.	1.4	1265.3
21	MAY	0202	62	0.	0.6	1264.6	*	21	MAY	0522	162	111.	5.2	1268.3	*	21	MAY	0842	262	5.	1.4	1265.3
21	MAY	0204	63	0.	0.7	1264.6	*	21	MAY	0524	163	106.	5.1	1268.2	*	21	MAY	0844	263	5.	1.4	1265.2
21	MAY	0206	64	0.	0.7	1264.7	*	21	MAY	0526	164	101.	4.9	1268.1	*	21	MAY	0846	264	5.	1.3	1265.2
21	MAY	0208	65	0.	0.7	1264.7	*	21	MAY	0528	165	97.	4.8	1268.0	*	21	MAY	0848	265	4.	1.3	1265.2
21	MAY	0210	66	0.	0.8	1264.7	*	21	MAY	0530	166	92.	4.6	1267.9	*	21	MAY	0850	266	4.	1.3	1265.2
21	MAY	0212	67	0.	0.8	1264.7	*	21	MAY	0532	167	88.	4.5	1267.8	*	21	MAY	0852	267	4.	1.3	1265.2
21	MAY	0214	68	0.	0.8	1264.8	*	21	MAY	0534	168	84.	4.4	1267.7	*	21	MAY	0854	268	4.	1.3	1265.2
21	MAY	0216	69	0.	0.9	1264.8	*	21	MAY	0536	169	80.	4.2	1267.6	*	21	MAY	0856	269	4.	1.3	1265.2
21	MAY	0218	70	0.	0.9	1264.8	*	21	MAY	0538	170	74.	4.1	1267.5	*	21	MAY	0858	270	4.	1.3	1265.2
21	MAY	0220	71	0.	0.9	1264.9	*	21	MAY	0540	171	69.	4.0	1267.5	*	21	MAY	0900	271	4.	1.3	1265.2
21	MAY	0222	72	0.	1.0	1264.9	*	21	MAY	0542	172	64.	4.0	1267.4	*	21	MAY	0902	272	4.	1.3	1265.2
21	MAY	0224	73	0.	1.0	1265.0	*	21	MAY	0544	173	60.	3.9	1267.3	*	21	MAY	0904	273	3.	1.3	1265.2
21	MAY	0226	74	0.	1.1	1265.0	*	21	MAY	0546	174	56.	3.8	1267.3	*	21	MAY	0906	274	3.	1.3	1265.2
21	MAY	0228	75	1.	1.1	1265.0	*	21	MAY	0548	175	53.	3.8	1267.2	*	21	MAY	0908	275	3.	1.3	1265.2
21	MAY	0230	76	1.	1.1	1265.1	*	21	MAY	0550	176	50.	3.7	1267.2	*	21	MAY	0910	276	3.	1.3	1265.2
21	MAY	0232	77	2.	1.2	1265.1	*	21	MAY	0552	177	47.	3.7	1267.2	*	21	MAY	0912	277	3.	1.3	1265.2
21	MAY	0234	78	3.	1.2	1265.1	*	21	MAY	0554	178	45.	3.6	1267.1	*	21	MAY	0914	278	3.	1.2	1265.2
21	MAY	0236	79	3.	1.3	1265.2	*	21	MAY	0556	179	43.	3.6	1267.1	*	21	MAY	0916	279	3.	1.2	1265.2
21	MAY	0238	80	4.	1.3	1265.2	*	21	MAY	0558	180	41.	3.6	1267.1	*	21	MAY	0918	280	3.	1.2	1265.1
21	MAY	0240	81	5.	1.4	1265.3	*	21	MAY	0600	181	40.	3.5	1267.1	*	21	MAY	0920	281	3.	1.2	1265.1
21	MAY	0242	82	6.	1.4	1265.3	*	21	MAY	0602	182	39.	3.5	1267.1	*	21	MAY	0922	282	3.	1.2	1265.1
21	MAY	0244	83	7.	1.5	1265.4	*	21	MAY	0604	183	39.	3.5	1267.0	*	21	MAY	0924	283	3.	1.2	1265.1
21	MAY	0246	84	8.	1.6	1265.4	*	21	MAY	0606	184	39.	3.5	1267.0	*	21	MAY	0926	284	3.	1.2	1265.1
21	MAY	0248	85	10.	1.7	1265.5	*	21	MAY	0608	185	38.	3.4	1267.0	*	21	MAY	0928	285	2.	1.2	1265.1
21	MAY	0250	86	11.	1.8	1265.6	*	21	MAY	0610	186	38.	3.4	1267.0	*	21	MAY	0930	286	2.	1.2	1265.1
21	MAY	0252	87	14.	1.9	1265.7	*	21	MAY	0612	187	37.	3.4	1266.9	*	21	MAY	0932	287	2.	1.2	1265.1

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

21 MAY	0254	88	16.	2.1	1265.8	*	21 MAY	0614	188	37.	3.3	1266.9	*	21 MAY	0934	288	2.	1.2	1265.1
21 MAY	0256	89	19.	2.3	1266.0	*	21 MAY	0616	189	36.	3.3	1266.9	*	21 MAY	0936	289	2.	1.2	1265.1
21 MAY	0258	90	24.	2.5	1266.2	*	21 MAY	0618	190	36.	3.3	1266.9	*	21 MAY	0938	290	2.	1.2	1265.1
21 MAY	0300	91	29.	2.9	1266.5	*	21 MAY	0620	191	35.	3.2	1266.8	*	21 MAY	0940	291	2.	1.2	1265.1
21 MAY	0302	92	38.	3.4	1267.0	*	21 MAY	0622	192	35.	3.2	1266.8	*	21 MAY	0942	292	2.	1.2	1265.1
21 MAY	0304	93	76.	4.2	1267.6	*	21 MAY	0624	193	34.	3.2	1266.8	*	21 MAY	0944	293	2.	1.2	1265.1
21 MAY	0306	94	112.	5.2	1268.3	*	21 MAY	0626	194	33.	3.1	1266.7	*	21 MAY	0946	294	2.	1.2	1265.1
21 MAY	0308	95	153.	6.5	1269.2	*	21 MAY	0628	195	33.	3.1	1266.7	*	21 MAY	0948	295	2.	1.2	1265.1
21 MAY	0310	96	193.	7.8	1270.1	*	21 MAY	0630	196	32.	3.0	1266.7	*	21 MAY	0950	296	2.	1.2	1265.1
21 MAY	0312	97	225.	8.9	1270.8	*	21 MAY	0632	197	31.	3.0	1266.6	*	21 MAY	0952	297	2.	1.2	1265.1
21 MAY	0314	98	248.	9.8	1271.3	*	21 MAY	0634	198	31.	3.0	1266.6	*	21 MAY	0954	298	2.	1.2	1265.1
21 MAY	0316	99	264.	10.6	1271.8	*	21 MAY	0636	199	30.	2.9	1266.6	*	21 MAY	0956	299	2.	1.2	1265.1
21 MAY	0318	100	278.	11.3	1272.1	*	21 MAY	0638	200	29.	2.9	1266.5	*	21 MAY	0958	300	2.	1.2	1265.1
						*							*						

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 326.	3.57		115.	70.	70.	70.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	57.	57.	57.	57.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
14.	3.57	6.	4.	4.	4.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1273.46	3.57	1268.30	1266.84	1266.84	1266.84

CUMULATIVE AREA = 0.00 SQ MI

1

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

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

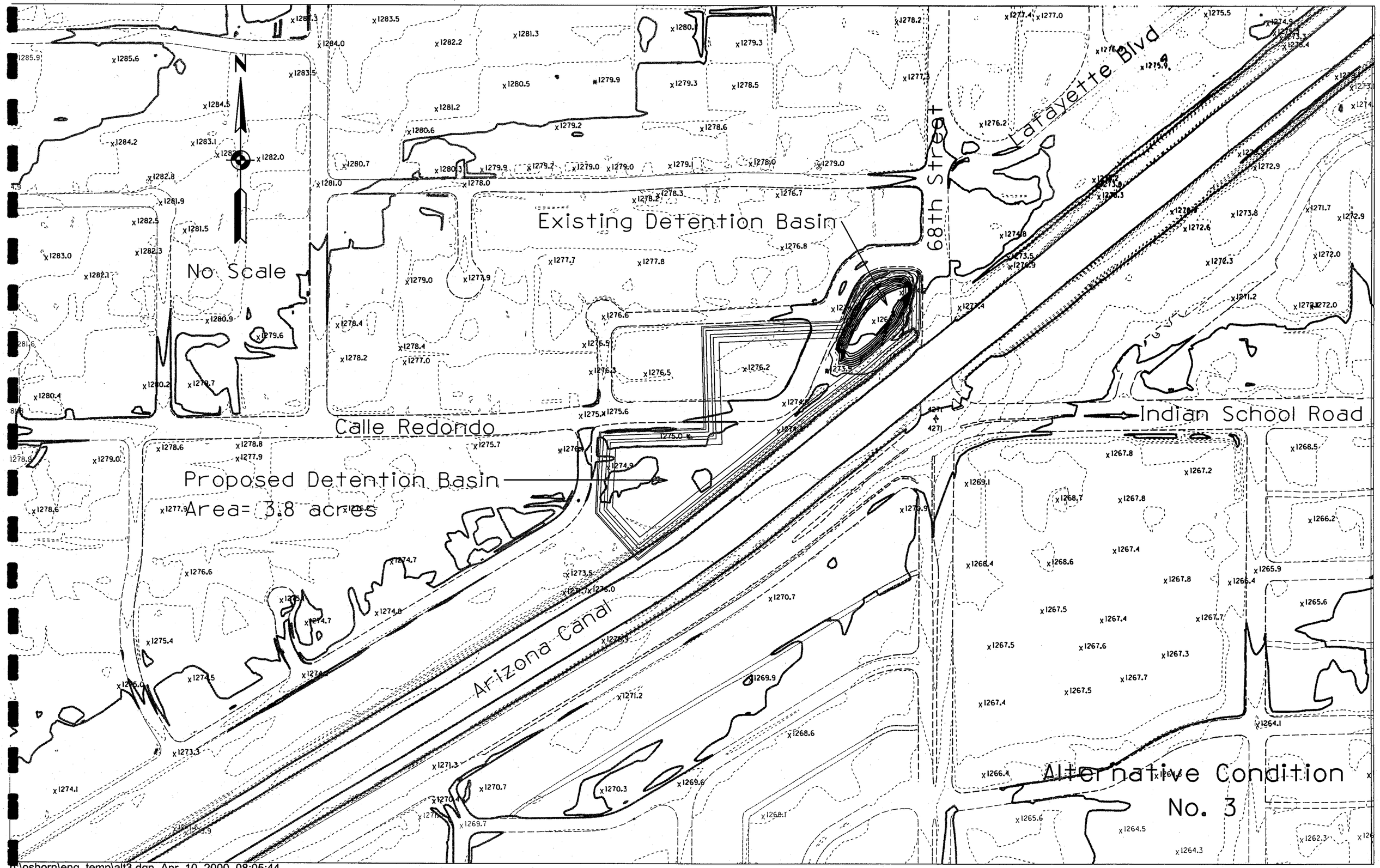
Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00		
+	ROUTED TO	RETAIN	326.	3.57	115.	70.	70.	0.00	1273.46	3.57
+										

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

Condition No. 2
Proposed 100-yr Detention Basin
Existing Discharge Pipe Under Inlet Control

Alternative Condition Number 3



n:\osborn\eng_temp\alt3.dgn Apr. 10, 2000 08:05:44

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/10/00  TIME  07:59:08  *
 ****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
****************************************
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```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

1 HEC-1 INPUT PAGE 1

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

  1           ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
  2           ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
  3           ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
  4           ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
  5           ID
  6           ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
  7           ID          ALTERNATIVE CONDITION NO. 3- PROPOSED 100-YEAR DETENTION BASIN
```

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

```
 8          ID                                        EXISTING OUTFALL LIMITED TO 200 CFS
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: PROPEXT2.DAT
13          ID
14          IT      2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI      0       0       0       0       0       0       0       0       0       0
18          QI      0       1       1       1       1       2       2       3       3       4
19          QI      4       4       4       4       4       4       4       4       4       4
20          QI      4       4       4       4       5       5       5       5       5       5
21          QI      5       5       5       5       5       5       5       5       5       5
22          QI      5       6       6       6       6       7       7       7       8       8
23          QI      9       9      10      10      11      12      12      13      13      14
24          QI     14      15      15      16      16      17      17      18      19      21
25          QI     24      27      32      38      46      56      68      82     101     128
26          QI    176     265     411     558     635     634     597     554     522     503
27          QI    491     477     455     426     396     367     342     319     299     280
28          QI    263     254     249     248     253     260     264     269     273     276
29          QI    280     285     290     292     291     290     283     276     278     287
30          QI    297     286     275     263     250     237     222     207     193     180
31          QI    168     158     148     139     130     122     115     107     101      95
32          QI     89      84      79      75      70      66      63      60      57      54
33          QI     52      50      48      46      44      43      41      40      39      38
34          QI     37      36      35      34      34      33      32      32      31      30
35          QI     30      29      29      28      28      27      26      26      25      24
36          QI     23      21      20      19      18      17      16      15      14      13
37          QI     13      12      11      11      10      10       9       9       9       8
38          QI      8       8       7       7       7       7       6       6       6       6
39          QI      5       5       5       5       5       5       4       4       4       4
40          QI      4       4       4       4       3       3       3       3       3       3
41          QI      3       3       3       3       3       2       2       2       2       2
42          QI      2       2       2       2       2       2       2       2       2       2
43          QI      2       2       2       2       2       2       1       1       1       1
44          QI      1       1       1       1       1       1       1       1       1       1
45          QI      1       1       1       1       1       1       1       1       1       1
46          QI      1       1       1       1       1       1       1       1       1       1

47          KK  RETAIN
48          KM   RETENTION BASIN NORTH OF ARIZONA CANAL
49          KM   REMOVE 3 HOUSES
50          RS      1    STOR       0
```

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

```
          51          SA    2.08    2.62    2.90    3.63
          52          SE    1264    1268    1270    1275
          53          SQ       0      40      80     120     160     200     200     200     200
1                                                  HEC-1 INPUT                                                    PAGE  2

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

          54          SE    1265 1267.08 1267.61 1268.53 1269.37 1270.20 1271.09 1273.25 1274.58
          55          ZZ
1****************************************                                  ****************************************
 *                                      *                                  *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                  *   U.S. ARMY CORPS OF ENGINEERS       *
 *              MAY  1991               *                                  *   HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.0.1E            *                                  *         609 SECOND STREET            *
 *     Lahey F77L-EM/32 version 5.01    *                                  *      DAVIS, CALIFORNIA 95616         *
 *       Dodson & Associates, Inc.      *                                  *          (916) 551-1748              *
 *  RUN DATE  04/10/00  TIME  07:59:08  *                                  *                                      *
 ****************************************                                  ****************************************
```

COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 3- PROPOSED 100-YEAR DETENTION BASIN
EXISTING OUTFALL LIMITED TO 200 CFS

ALAN HUMPHREY
9/99

FILE: PROPEXT2.DAT

```
IT          HYDROGRAPH TIME DATA
                  NMIN          2  MINUTES IN COMPUTATION INTERVAL
                 IDATE     21MAY97  STARTING DATE
                 ITIME        0000  STARTING TIME
                    NQ         300  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE     21MAY97  ENDING DATE
               NDTIME        0958  ENDING TIME
                ICENT          19  CENTURY MARK
```

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

COMPUTATION INTERVAL 0.03 HOURS
TOTAL TIME BASE 9.97 HOURS

ENGLISH UNITS

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

*** ***

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              **************
              *            *
 15 KK        *     FLOOD  *
              *            *
              **************
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68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

SUBBASIN RUNOFF DATA

0 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

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HYDROGRAPH AT STATION FLOOD

****

DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	*	21 MAY 0230	76	17.	*	21 MAY 0500	151	89.	*	21 MAY 0730	226	5.
21 MAY 0002	2	0.	*	21 MAY 0232	77	17.	*	21 MAY 0502	152	84.	*	21 MAY 0732	227	4.
21 MAY 0004	3	0.	*	21 MAY 0234	78	18.	*	21 MAY 0504	153	79.	*	21 MAY 0734	228	4.
21 MAY 0006	4	0.	*	21 MAY 0236	79	19.	*	21 MAY 0506	154	75.	*	21 MAY 0736	229	4.
21 MAY 0008	5	0.	*	21 MAY 0238	80	21.	*	21 MAY 0508	155	70.	*	21 MAY 0738	230	4.

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

21 MAY 0010	6	0.	*	21 MAY 0240	81	24.	*	21 MAY 0510	156	66.	*	21 MAY 0740	231	4.
21 MAY 0012	7	0.	*	21 MAY 0242	82	27.	*	21 MAY 0512	157	63.	*	21 MAY 0742	232	4.
21 MAY 0014	8	0.	*	21 MAY 0244	83	32.	*	21 MAY 0514	158	60.	*	21 MAY 0744	233	4.
21 MAY 0016	9	0.	*	21 MAY 0246	84	38.	*	21 MAY 0516	159	57.	*	21 MAY 0746	234	4.
21 MAY 0018	10	0.	*	21 MAY 0248	85	46.	*	21 MAY 0518	160	54.	*	21 MAY 0748	235	3.
21 MAY 0020	11	0.	*	21 MAY 0250	86	56.	*	21 MAY 0520	161	52.	*	21 MAY 0750	236	3.
21 MAY 0022	12	1.	*	21 MAY 0252	87	68.	*	21 MAY 0522	162	50.	*	21 MAY 0752	237	3.
21 MAY 0024	13	1.	*	21 MAY 0254	88	82.	*	21 MAY 0524	163	48.	*	21 MAY 0754	238	3.
21 MAY 0026	14	1.	*	21 MAY 0256	89	101.	*	21 MAY 0526	164	46.	*	21 MAY 0756	239	3.
21 MAY 0028	15	1.	*	21 MAY 0258	90	128.	*	21 MAY 0528	165	44.	*	21 MAY 0758	240	3.
21 MAY 0030	16	2.	*	21 MAY 0300	91	176.	*	21 MAY 0530	166	43.	*	21 MAY 0800	241	3.
21 MAY 0032	17	2.	*	21 MAY 0302	92	265.	*	21 MAY 0532	167	41.	*	21 MAY 0802	242	3.
21 MAY 0034	18	3.	*	21 MAY 0304	93	411.	*	21 MAY 0534	168	40.	*	21 MAY 0804	243	3.
21 MAY 0036	19	3.	*	21 MAY 0306	94	558.	*	21 MAY 0536	169	39.	*	21 MAY 0806	244	3.
21 MAY 0038	20	4.	*	21 MAY 0308	95	635.	*	21 MAY 0538	170	38.	*	21 MAY 0808	245	3.
21 MAY 0040	21	4.	*	21 MAY 0310	96	634.	*	21 MAY 0540	171	37.	*	21 MAY 0810	246	2.
21 MAY 0042	22	4.	*	21 MAY 0312	97	597.	*	21 MAY 0542	172	36.	*	21 MAY 0812	247	2.
21 MAY 0044	23	4.	*	21 MAY 0314	98	554.	*	21 MAY 0544	173	35.	*	21 MAY 0814	248	2.
21 MAY 0046	24	4.	*	21 MAY 0316	99	522.	*	21 MAY 0546	174	34.	*	21 MAY 0816	249	2.
21 MAY 0048	25	4.	*	21 MAY 0318	100	503.	*	21 MAY 0548	175	34.	*	21 MAY 0818	250	2.
21 MAY 0050	26	4.	*	21 MAY 0320	101	491.	*	21 MAY 0550	176	33.	*	21 MAY 0820	251	2.
21 MAY 0052	27	4.	*	21 MAY 0322	102	477.	*	21 MAY 0552	177	32.	*	21 MAY 0822	252	2.
21 MAY 0054	28	4.	*	21 MAY 0324	103	455.	*	21 MAY 0554	178	32.	*	21 MAY 0824	253	2.
21 MAY 0056	29	4.	*	21 MAY 0326	104	426.	*	21 MAY 0556	179	31.	*	21 MAY 0826	254	2.
21 MAY 0058	30	4.	*	21 MAY 0328	105	396.	*	21 MAY 0558	180	30.	*	21 MAY 0828	255	2.
21 MAY 0100	31	4.	*	21 MAY 0330	106	367.	*	21 MAY 0600	181	30.	*	21 MAY 0830	256	2.
21 MAY 0102	32	4.	*	21 MAY 0332	107	342.	*	21 MAY 0602	182	29.	*	21 MAY 0832	257	2.
21 MAY 0104	33	4.	*	21 MAY 0334	108	319.	*	21 MAY 0604	183	29.	*	21 MAY 0834	258	2.
21 MAY 0106	34	4.	*	21 MAY 0336	109	299.	*	21 MAY 0606	184	28.	*	21 MAY 0836	259	2.
21 MAY 0108	35	5.	*	21 MAY 0338	110	280.	*	21 MAY 0608	185	28.	*	21 MAY 0838	260	2.
21 MAY 0110	36	5.	*	21 MAY 0340	111	263.	*	21 MAY 0610	186	27.	*	21 MAY 0840	261	2.
21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
			*				*				*			

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	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	9.97-HR
+	(CFS)	(HR)					
			(CFS)				
+	635.	3.13		116.	71.	71.	71.
			(INCHES)	0.000	0.000	0.000	0.000
			(AC-FT)	58.	58.	58.	58.

CUMULATIVE AREA = 0.00 SQ MI

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Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

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          *            *
47 KK     *   RETAIN   *
          *            *
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                         RETENTION BASIN NORTH OF ARIZONA CANAL
                         REMOVE 3 HOUSES

            HYDROGRAPH ROUTING DATA

50 RS         STORAGE ROUTING
                   NSTPS          1  NUMBER OF SUBREACHES
                    ITYP       STOR  TYPE OF INITIAL CONDITION
                  RSVRIC       0.00  INITIAL CONDITION
                       X       0.00 WORKING R AND D COEFFICIENT

51 SA              AREA        2.1       2.6       2.9       3.6

52 SE         ELEVATION     1264.00   1268.00   1270.00   1275.00

53 SQ         DISCHARGE          0.       40.       80.      120.      160.      200.      200.      200.      200.

54 SE         ELEVATION     1265.00   1267.08   1267.61   1268.53   1269.37   1270.20   1271.09   1273.25   1274.58
                                                            ***

                                          COMPUTED STORAGE-ELEVATION DATA

        STORAGE       0.00      9.38     14.90     31.19
      ELEVATION    1264.00   1268.00   1270.00   1275.00

                                     COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

        STORAGE       0.00      2.14      7.03      8.37      9.38     10.79     13.10     14.90     15.48     18.14
        OUTFLOW       0.00      0.00     40.00     80.00     96.96    120.00    160.00    190.36    200.00    200.00
      ELEVATION    1264.00   1265.00   1267.08   1267.61   1268.00   1268.53   1269.37   1270.00   1270.20   1271.09

        STORAGE      25.07     29.68     31.19
        OUTFLOW     200.00    200.00    200.00
      ELEVATION    1273.25   1274.58   1275.00
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                                          HYDROGRAPH AT STATION   RETAIN

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Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
21	MAY	0000	1	0.	0.0	1264.0	21	MAY	0320	101	186.	14.6	1269.9	21	MAY	0640	201	53.	7.4	1267.2
21	MAY	0002	2	0.	0.0	1264.0	21	MAY	0322	102	199.	15.4	1270.2	21	MAY	0642	202	49.	7.3	1267.2
21	MAY	0004	3	0.	0.0	1264.0	21	MAY	0324	103	200.	16.2	1270.4	21	MAY	0644	203	46.	7.2	1267.2
21	MAY	0006	4	0.	0.0	1264.0	21	MAY	0326	104	200.	16.8	1270.6	21	MAY	0646	204	44.	7.1	1267.1
21	MAY	0008	5	0.	0.0	1264.0	21	MAY	0328	105	200.	17.4	1270.8	21	MAY	0648	205	41.	7.1	1267.1
21	MAY	0010	6	0.	0.0	1264.0	21	MAY	0330	106	200.	17.9	1271.0	21	MAY	0650	206	40.	7.0	1267.1
21	MAY	0012	7	0.	0.0	1264.0	21	MAY	0332	107	200.	18.3	1271.1	21	MAY	0652	207	39.	6.9	1267.0
21	MAY	0014	8	0.	0.0	1264.0	21	MAY	0334	108	200.	18.7	1271.3	21	MAY	0654	208	38.	6.8	1267.0
21	MAY	0016	9	0.	0.0	1264.0	21	MAY	0336	109	200.	19.0	1271.4	21	MAY	0656	209	38.	6.7	1267.0
21	MAY	0018	10	0.	0.0	1264.0	21	MAY	0338	110	200.	19.2	1271.4	21	MAY	0658	210	37.	6.7	1266.9
21	MAY	0020	11	0.	0.0	1264.0	21	MAY	0340	111	200.	19.4	1271.5	21	MAY	0700	211	36.	6.6	1266.9
21	MAY	0022	12	0.	0.0	1264.0	21	MAY	0342	112	200.	19.6	1271.5	21	MAY	0702	212	36.	6.5	1266.9
21	MAY	0024	13	0.	0.0	1264.0	21	MAY	0344	113	200.	19.7	1271.6	21	MAY	0704	213	35.	6.4	1266.8
21	MAY	0026	14	0.	0.0	1264.0	21	MAY	0346	114	200.	19.9	1271.6	21	MAY	0706	214	34.	6.3	1266.8
21	MAY	0028	15	0.	0.0	1264.0	21	MAY	0348	115	200.	20.0	1271.7	21	MAY	0708	215	34.	6.3	1266.8
21	MAY	0030	16	0.	0.0	1264.0	21	MAY	0350	116	200.	20.2	1271.7	21	MAY	0710	216	33.	6.2	1266.7
21	MAY	0032	17	0.	0.0	1264.0	21	MAY	0352	117	200.	20.3	1271.8	21	MAY	0712	217	33.	6.1	1266.7
21	MAY	0034	18	0.	0.0	1264.0	21	MAY	0354	118	200.	20.5	1271.8	21	MAY	0714	218	32.	6.1	1266.7
21	MAY	0036	19	0.	0.0	1264.0	21	MAY	0356	119	200.	20.7	1271.9	21	MAY	0716	219	31.	6.0	1266.6
21	MAY	0038	20	0.	0.0	1264.0	21	MAY	0358	120	200.	20.9	1272.0	21	MAY	0718	220	31.	5.9	1266.6
21	MAY	0040	21	0.	0.1	1264.0	21	MAY	0400	121	200.	21.1	1272.0	21	MAY	0720	221	30.	5.8	1266.6
21	MAY	0042	22	0.	0.1	1264.0	21	MAY	0402	122	200.	21.4	1272.1	21	MAY	0722	222	30.	5.8	1266.5
21	MAY	0044	23	0.	0.1	1264.0	21	MAY	0404	123	200.	21.6	1272.2	21	MAY	0724	223	29.	5.7	1266.5
21	MAY	0046	24	0.	0.1	1264.0	21	MAY	0406	124	200.	21.8	1272.2	21	MAY	0726	224	29.	5.6	1266.5
21	MAY	0048	25	0.	0.1	1264.0	21	MAY	0408	125	200.	22.1	1272.3	21	MAY	0728	225	28.	5.6	1266.5
21	MAY	0050	26	0.	0.1	1264.1	21	MAY	0410	126	200.	22.3	1272.4	21	MAY	0730	226	28.	5.5	1266.4
21	MAY	0052	27	0.	0.1	1264.1	21	MAY	0412	127	200.	22.6	1272.5	21	MAY	0732	227	27.	5.5	1266.4
21	MAY	0054	28	0.	0.1	1264.1	21	MAY	0414	128	200.	22.8	1272.5	21	MAY	0734	228	27.	5.4	1266.4
21	MAY	0056	29	0.	0.1	1264.1	21	MAY	0416	129	200.	23.0	1272.6	21	MAY	0736	229	26.	5.3	1266.4
21	MAY	0058	30	0.	0.2	1264.1	21	MAY	0418	130	200.	23.2	1272.7	21	MAY	0738	230	26.	5.3	1266.3
21	MAY	0100	31	0.	0.2	1264.1	21	MAY	0420	131	200.	23.5	1272.8	21	MAY	0740	231	25.	5.2	1266.3
21	MAY	0102	32	0.	0.2	1264.1	21	MAY	0422	132	200.	23.7	1272.8	21	MAY	0742	232	25.	5.2	1266.3
21	MAY	0104	33	0.	0.2	1264.1	21	MAY	0424	133	200.	24.0	1272.9	21	MAY	0744	233	24.	5.1	1266.3
21	MAY	0106	34	0.	0.2	1264.1	21	MAY	0426	134	200.	24.2	1273.0	21	MAY	0746	234	24.	5.0	1266.2
21	MAY	0108	35	0.	0.2	1264.1	21	MAY	0428	135	200.	24.3	1273.0	21	MAY	0748	235	23.	5.0	1266.2
21	MAY	0110	36	0.	0.2	1264.1	21	MAY	0430	136	200.	24.4	1273.1	21	MAY	0750	236	23.	4.9	1266.2
21	MAY	0112	37	0.	0.2	1264.1	21	MAY	0432	137	200.	24.5	1273.1	21	MAY	0752	237	22.	4.9	1266.2
21	MAY	0114	38	0.	0.3	1264.1	21	MAY	0434	138	200.	24.6	1273.1	21	MAY	0754	238	22.	4.8	1266.1
21	MAY	0116	39	0.	0.3	1264.1	21	MAY	0436	139	200.	24.6	1273.1	21	MAY	0756	239	22.	4.8	1266.1
21	MAY	0118	40	0.	0.3	1264.1	21	MAY	0438	140	200.	24.5	1273.1	21	MAY	0758	240	21.	4.7	1266.1
21	MAY	0120	41	0.	0.3	1264.1	21	MAY	0440	141	200.	24.4	1273.1	21	MAY	0800	241	21.	4.7	1266.1
21	MAY	0122	42	0.	0.3	1264.1	21	MAY	0442	142	200.	24.3	1273.0	21	MAY	0802	242	20.	4.6	1266.1

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

21	MAY	0124	43	0.	0.3	1264.1	*	21	MAY	0444	143	200.	24.2	1273.0	*	21	MAY	0804	243	20.	4.6	1266.0
21	MAY	0126	44	0.	0.3	1264.2	*	21	MAY	0446	144	200.	24.1	1272.9	*	21	MAY	0806	244	20.	4.5	1266.0
21	MAY	0128	45	0.	0.3	1264.2	*	21	MAY	0448	145	200.	23.9	1272.9	*	21	MAY	0808	245	19.	4.5	1266.0
21	MAY	0130	46	0.	0.4	1264.2	*	21	MAY	0450	146	200.	23.7	1272.8	*	21	MAY	0810	246	19.	4.4	1266.0
21	MAY	0132	47	0.	0.4	1264.2	*	21	MAY	0452	147	200.	23.5	1272.7	*	21	MAY	0812	247	18.	4.4	1266.0
21	MAY	0134	48	0.	0.4	1264.2	*	21	MAY	0454	148	200.	23.2	1272.7	*	21	MAY	0814	248	18.	4.3	1265.9
21	MAY	0136	49	0.	0.4	1264.2	*	21	MAY	0456	149	200.	22.9	1272.6	*	21	MAY	0816	249	18.	4.3	1265.9
21	MAY	0138	50	0.	0.4	1264.2	*	21	MAY	0458	150	200.	22.7	1272.5	*	21	MAY	0818	250	17.	4.3	1265.9
21	MAY	0140	51	0.	0.4	1264.2	*	21	MAY	0500	151	200.	22.4	1272.4	*	21	MAY	0820	251	17.	4.2	1265.9
21	MAY	0142	52	0.	0.4	1264.2	*	21	MAY	0502	152	200.	22.1	1272.3	*	21	MAY	0822	252	17.	4.2	1265.9
21	MAY	0144	53	0.	0.5	1264.2	*	21	MAY	0504	153	200.	21.7	1272.2	*	21	MAY	0824	253	16.	4.1	1265.8
21	MAY	0146	54	0.	0.5	1264.2	*	21	MAY	0506	154	200.	21.4	1272.1	*	21	MAY	0826	254	16.	4.1	1265.8
21	MAY	0148	55	0.	0.5	1264.2	*	21	MAY	0508	155	200.	21.0	1272.0	*	21	MAY	0828	255	16.	4.1	1265.8
21	MAY	0150	56	0.	0.5	1264.2	*	21	MAY	0510	156	200.	20.7	1271.9	*	21	MAY	0830	256	15.	4.0	1265.8
21	MAY	0152	57	0.	0.5	1264.2	*	21	MAY	0512	157	200.	20.3	1271.8	*	21	MAY	0832	257	15.	4.0	1265.8
21	MAY	0154	58	0.	0.6	1264.3	*	21	MAY	0514	158	200.	19.9	1271.6	*	21	MAY	0834	258	15.	4.0	1265.8
21	MAY	0156	59	0.	0.6	1264.3	*	21	MAY	0516	159	200.	19.5	1271.5	*	21	MAY	0836	259	15.	3.9	1265.8
21	MAY	0158	60	0.	0.6	1264.3	*	21	MAY	0518	160	200.	19.1	1271.4	*	21	MAY	0838	260	14.	3.9	1265.7
21	MAY	0200	61	0.	0.6	1264.3	*	21	MAY	0520	161	200.	18.7	1271.3	*	21	MAY	0840	261	14.	3.9	1265.7
21	MAY	0202	62	0.	0.6	1264.3	*	21	MAY	0522	162	200.	18.3	1271.1	*	21	MAY	0842	262	14.	3.8	1265.7
21	MAY	0204	63	0.	0.7	1264.3	*	21	MAY	0524	163	200.	17.9	1271.0	*	21	MAY	0844	263	13.	3.8	1265.7
21	MAY	0206	64	0.	0.7	1264.3	*	21	MAY	0526	164	200.	17.5	1270.9	*	21	MAY	0846	264	13.	3.8	1265.7
21	MAY	0208	65	0.	0.7	1264.3	*	21	MAY	0528	165	200.	17.0	1270.7	*	21	MAY	0848	265	13.	3.7	1265.7
21	MAY	0210	66	0.	0.8	1264.4	*	21	MAY	0530	166	200.	16.6	1270.6	*	21	MAY	0850	266	13.	3.7	1265.7
21	MAY	0212	67	0.	0.8	1264.4	*	21	MAY	0532	167	200.	16.2	1270.4	*	21	MAY	0852	267	12.	3.7	1265.6
21	MAY	0214	68	0.	0.8	1264.4	*	21	MAY	0534	168	200.	15.7	1270.3	*	21	MAY	0854	268	12.	3.6	1265.6
21	MAY	0216	69	0.	0.9	1264.4	*	21	MAY	0536	169	197.	15.3	1270.1	*	21	MAY	0856	269	12.	3.6	1265.6
21	MAY	0218	70	0.	0.9	1264.4	*	21	MAY	0538	170	190.	14.9	1270.0	*	21	MAY	0858	270	12.	3.6	1265.6
21	MAY	0220	71	0.	0.9	1264.4	*	21	MAY	0540	171	183.	14.5	1269.8	*	21	MAY	0900	271	11.	3.5	1265.6
21	MAY	0222	72	0.	1.0	1264.5	*	21	MAY	0542	172	176.	14.1	1269.7	*	21	MAY	0902	272	11.	3.5	1265.6
21	MAY	0224	73	0.	1.0	1264.5	*	21	MAY	0544	173	170.	13.7	1269.6	*	21	MAY	0904	273	11.	3.5	1265.6
21	MAY	0226	74	0.	1.1	1264.5	*	21	MAY	0546	174	164.	13.3	1269.5	*	21	MAY	0906	274	11.	3.5	1265.6
21	MAY	0228	75	0.	1.1	1264.5	*	21	MAY	0548	175	158.	13.0	1269.3	*	21	MAY	0908	275	11.	3.4	1265.5
21	MAY	0230	76	0.	1.2	1264.5	*	21	MAY	0550	176	152.	12.6	1269.2	*	21	MAY	0910	276	10.	3.4	1265.5
21	MAY	0232	77	0.	1.2	1264.6	*	21	MAY	0552	177	147.	12.3	1269.1	*	21	MAY	0912	277	10.	3.4	1265.5
21	MAY	0234	78	0.	1.2	1264.6	*	21	MAY	0554	178	141.	12.0	1269.0	*	21	MAY	0914	278	10.	3.4	1265.5
21	MAY	0236	79	0.	1.3	1264.6	*	21	MAY	0556	179	136.	11.7	1268.9	*	21	MAY	0916	279	10.	3.3	1265.5
21	MAY	0238	80	0.	1.4	1264.6	*	21	MAY	0558	180	131.	11.4	1268.8	*	21	MAY	0918	280	10.	3.3	1265.5
21	MAY	0240	81	0.	1.4	1264.7	*	21	MAY	0600	181	126.	11.2	1268.7	*	21	MAY	0920	281	9.	3.3	1265.5
21	MAY	0242	82	0.	1.5	1264.7	*	21	MAY	0602	182	122.	10.9	1268.6	*	21	MAY	0922	282	9.	3.3	1265.5
21	MAY	0244	83	0.	1.6	1264.7	*	21	MAY	0604	183	118.	10.7	1268.5	*	21	MAY	0924	283	9.	3.2	1265.5
21	MAY	0246	84	0.	1.7	1264.8	*	21	MAY	0606	184	114.	10.4	1268.4	*	21	MAY	0926	284	9.	3.2	1265.5
21	MAY	0248	85	0.	1.8	1264.8	*	21	MAY	0608	185	110.	10.2	1268.3	*	21	MAY	0928	285	9.	3.2	1265.4
21	MAY	0250	86	0.	1.9	1264.9	*	21	MAY	0610	186	106.	10.0	1268.2	*	21	MAY	0930	286	8.	3.2	1265.4
21	MAY	0252	87	0.	2.1	1265.0	*	21	MAY	0612	187	103.	9.7	1268.1	*	21	MAY	0932	287	8.	3.2	1265.4

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

21	MAY	0254	88	1.	2.3	1265.1	*	21	MAY	0614	188	99.	9.5	1268.1	*	21	MAY	0934	288	8.	3.1	1265.4
21	MAY	0256	89	3.	2.5	1265.2	*	21	MAY	0616	189	96.	9.3	1268.0	*	21	MAY	0936	289	8.	3.1	1265.4
21	MAY	0258	90	6.	2.8	1265.3	*	21	MAY	0618	190	93.	9.1	1267.9	*	21	MAY	0938	290	8.	3.1	1265.4
21	MAY	0300	91	9.	3.2	1265.5	*	21	MAY	0620	191	90.	9.0	1267.8	*	21	MAY	0940	291	8.	3.1	1265.4
21	MAY	0302	92	14.	3.8	1265.7	*	21	MAY	0622	192	87.	8.8	1267.8	*	21	MAY	0942	292	8.	3.1	1265.4
21	MAY	0304	93	21.	4.7	1266.1	*	21	MAY	0624	193	84.	8.6	1267.7	*	21	MAY	0944	293	7.	3.0	1265.4
21	MAY	0306	94	31.	6.0	1266.6	*	21	MAY	0626	194	81.	8.4	1267.6	*	21	MAY	0946	294	7.	3.0	1265.4
21	MAY	0308	95	54.	7.5	1267.3	*	21	MAY	0628	195	77.	8.3	1267.6	*	21	MAY	0948	295	7.	3.0	1265.4
21	MAY	0310	96	91.	9.0	1267.9	*	21	MAY	0630	196	72.	8.1	1267.5	*	21	MAY	0950	296	7.	3.0	1265.4
21	MAY	0312	97	114.	10.4	1268.4	*	21	MAY	0632	197	68.	8.0	1267.4	*	21	MAY	0952	297	7.	3.0	1265.4
21	MAY	0314	98	136.	11.7	1268.9	*	21	MAY	0634	198	63.	7.8	1267.4	*	21	MAY	0954	298	7.	3.0	1265.3
21	MAY	0316	99	154.	12.8	1269.3	*	21	MAY	0636	199	60.	7.7	1267.3	*	21	MAY	0956	299	7.	2.9	1265.3
21	MAY	0318	100	171.	13.7	1269.6	*	21	MAY	0638	200	56.	7.6	1267.3	*	21	MAY	0958	300	6.	2.9	1265.3
							*								*							

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 200.	3.40		111.	67.	67.	67.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	55.	56.	56.	56.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
25.	4.57	12.	8.	8.	8.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1273.09	4.57	1268.88	1267.16	1267.16	1267.16

CUMULATIVE AREA = 0.00 SQ MI

1

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

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

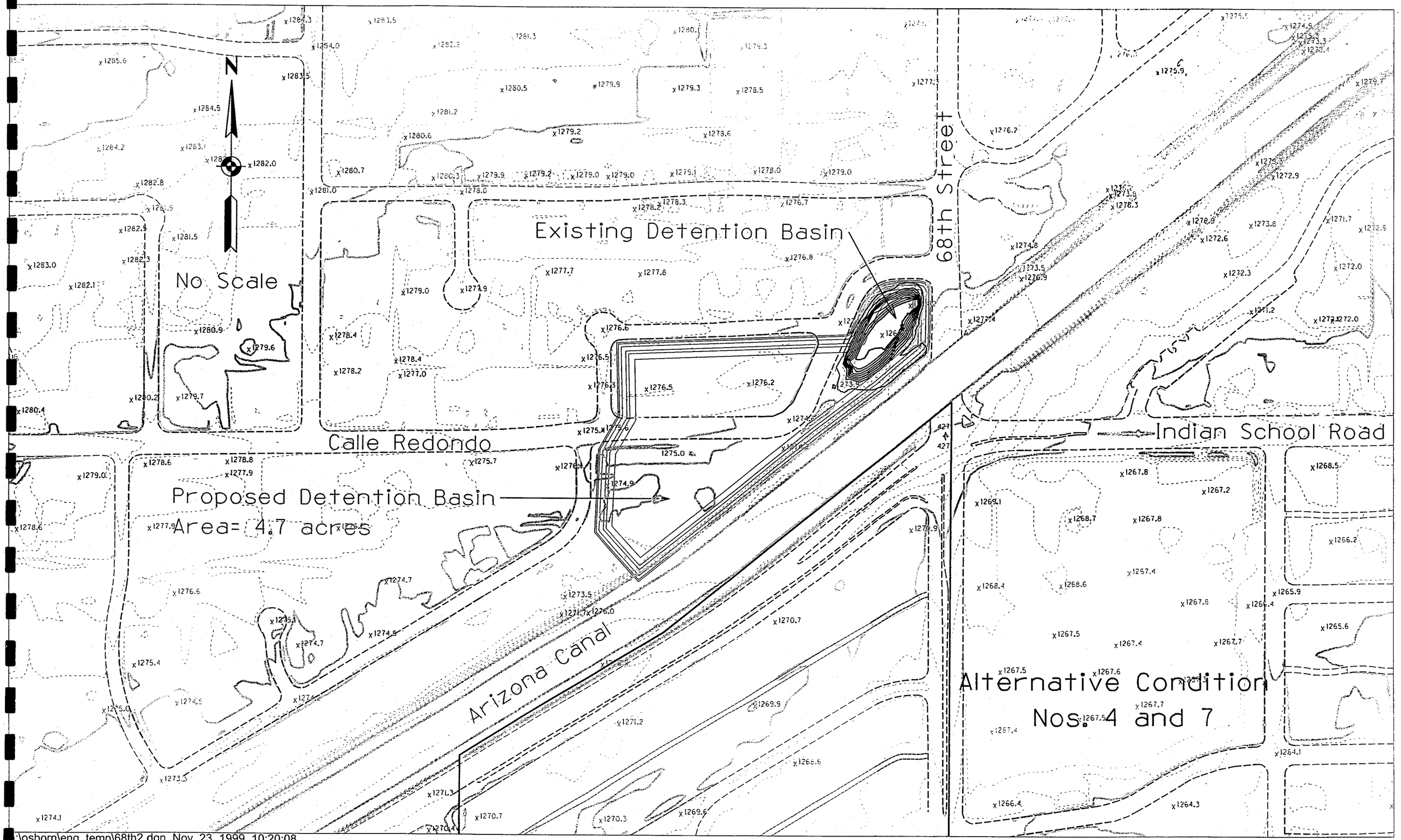
Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00	
+	ROUTED TO	RETAIN	200.	3.40	111.	67.	67.	0.00	1273.09 4.57
+									

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

Condition No. 3
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 200 cfs Max

Alternative Condition Number 4



:\osborn\eng_temp\68th2.dgn Nov. 23, 1999 10:20:08

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  14:21:58  *
 ****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
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```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

1 HEC-1 INPUT PAGE 1

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

   1          ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
   2          ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
   3          ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
   4          ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
   5          ID
   6          ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
   7          ID          ALTERNATIVE CONDITION NO. 4- PROPOSED 100-YEAR DETENTION BASIN
```

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

```
 8          ID                                        EXISTING OUTFALL LIMITED TO 100 CFS
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: PROPEXT.DAT
13          ID
14          IT      2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI       0       0       0       0       0       0       0       0       0       0
18          QI       0       1       1       1       1       2       2       3       3       4
19          QI       4       4       4       4       4       4       4       4       4       4
20          QI       4       4       4       4       5       5       5       5       5       5
21          QI       5       5       5       5       5       5       5       5       5       5
22          QI       5       6       6       6       6       7       7       7       8       8
23          QI       9       9      10      10      11      12      12      13      13      14
24          QI      14      15      15      16      16      17      17      18      19      21
25          QI      24      27      32      38      46      56      68      82     101     128
26          QI     176     265     411     558     635     634     597     554     522     503
27          QI     491     477     455     426     396     367     342     319     299     280
28          QI     263     254     249     248     253     260     264     269     273     276
29          QI     280     285     290     292     291     290     283     276     278     287
30          QI     297     286     275     263     250     237     222     207     193     180
31          QI     168     158     148     139     130     122     115     107     101      95
32          QI      89      84      79      75      70      66      63      60      57      54
33          QI      52      50      48      46      44      43      41      40      39      38
34          QI      37      36      35      34      34      33      32      32      31      30
35          QI      30      29      29      28      28      27      26      26      25      24
36          QI      23      21      20      19      18      17      16      15      14      13
37          QI      13      12      11      11      10      10       9       9       9       8
38          QI       8       8       7       7       7       7       6       6       6       6
39          QI       5       5       5       5       5       5       4       4       4       4
40          QI       4       4       4       4       3       3       3       3       3       3
41          QI       3       3       3       3       3       2       2       2       2       2
42          QI       2       2       2       2       2       2       2       2       2       2
43          QI       2       2       2       2       2       2       1       1       1       1
44          QI       1       1       1       1       1       1       1       1       1       1
45          QI       1       1       1       1       1       1       1       1       1       1
46          QI       1       1       1       1       1       1       1       1       1       1

47          KK  RETAIN
48          KM   RETENTION BASIN NORTH OF ARIZONA CANAL
49          KM   REMOVE 5 HOUSES
50          RS       1    STOR       0
```

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

```
          51          SA    3.04    3.57    3.85    4.27    4.56
          52          SE    1264    1268    1270    1273    1275
          53          SQ       0      40      80     100     100     100     100     100     100
1                                                HEC-1 INPUT                                                    PAGE  2

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

          54          SE    1265 1267.08 1267.61 1268.53 1269.37 1270.20 1271.09 1273.25 1274.58
          55          ZZ
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.0.1E            *                                    *          609 SECOND STREET           *
 *     Lahey F77L-EM/32 version 5.01    *                                    *       DAVIS, CALIFORNIA 95616        *
 *       Dodson & Associates, Inc.      *                                    *           (916) 551-1748             *
 *  RUN DATE  04/06/00  TIME  14:21:58  *                                    *                                      *
 ****************************************                                    ****************************************
```

COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 4- PROPOSED 100-YEAR DETENTION BASIN
EXISTING OUTFALL LIMITED TO 100 CFS

ALAN HUMPHREY
9/99

FILE: PROPEXT.DAT

```
IT          HYDROGRAPH TIME DATA
                  NMIN           2  MINUTES IN COMPUTATION INTERVAL
                 IDATE     21MAY97  STARTING DATE
                 ITIME        0000  STARTING TIME
                    NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     21MAY97  ENDING DATE
                NDTIME        0958  ENDING TIME
                 ICENT          19  CENTURY MARK
```

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

COMPUTATION INTERVAL 0.03 HOURS
TOTAL TIME BASE 9.97 HOURS

ENGLISH UNITS

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

*** ***

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              **************
              *            *
  15 KK       *     FLOOD  *
              *            *
              **************
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68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

SUBBASIN RUNOFF DATA

0 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

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HYDROGRAPH AT STATION FLOOD

****

DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	*	21 MAY 0230	76	17.	*	21 MAY 0500	151	89.	*	21 MAY 0730	226	5.
21 MAY 0002	2	0.	*	21 MAY 0232	77	17.	*	21 MAY 0502	152	84.	*	21 MAY 0732	227	4.
21 MAY 0004	3	0.	*	21 MAY 0234	78	18.	*	21 MAY 0504	153	79.	*	21 MAY 0734	228	4.
21 MAY 0006	4	0.	*	21 MAY 0236	79	19.	*	21 MAY 0506	154	75.	*	21 MAY 0736	229	4.
21 MAY 0008	5	0.	*	21 MAY 0238	80	21.	*	21 MAY 0508	155	70.	*	21 MAY 0738	230	4.

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

21 MAY 0010	6	0.	*	21 MAY 0240	81	24.	*	21 MAY 0510	156	66.	*	21 MAY 0740	231	4.
21 MAY 0012	7	0.	*	21 MAY 0242	82	27.	*	21 MAY 0512	157	63.	*	21 MAY 0742	232	4.
21 MAY 0014	8	0.	*	21 MAY 0244	83	32.	*	21 MAY 0514	158	60.	*	21 MAY 0744	233	4.
21 MAY 0016	9	0.	*	21 MAY 0246	84	38.	*	21 MAY 0516	159	57.	*	21 MAY 0746	234	4.
21 MAY 0018	10	0.	*	21 MAY 0248	85	46.	*	21 MAY 0518	160	54.	*	21 MAY 0748	235	3.
21 MAY 0020	11	0.	*	21 MAY 0250	86	56.	*	21 MAY 0520	161	52.	*	21 MAY 0750	236	3.
21 MAY 0022	12	1.	*	21 MAY 0252	87	68.	*	21 MAY 0522	162	50.	*	21 MAY 0752	237	3.
21 MAY 0024	13	1.	*	21 MAY 0254	88	82.	*	21 MAY 0524	163	48.	*	21 MAY 0754	238	3.
21 MAY 0026	14	1.	*	21 MAY 0256	89	101.	*	21 MAY 0526	164	46.	*	21 MAY 0756	239	3.
21 MAY 0028	15	1.	*	21 MAY 0258	90	128.	*	21 MAY 0528	165	44.	*	21 MAY 0758	240	3.
21 MAY 0030	16	2.	*	21 MAY 0300	91	176.	*	21 MAY 0530	166	43.	*	21 MAY 0800	241	3.
21 MAY 0032	17	2.	*	21 MAY 0302	92	265.	*	21 MAY 0532	167	41.	*	21 MAY 0802	242	3.
21 MAY 0034	18	3.	*	21 MAY 0304	93	411.	*	21 MAY 0534	168	40.	*	21 MAY 0804	243	3.
21 MAY 0036	19	3.	*	21 MAY 0306	94	558.	*	21 MAY 0536	169	39.	*	21 MAY 0806	244	3.
21 MAY 0038	20	4.	*	21 MAY 0308	95	635.	*	21 MAY 0538	170	38.	*	21 MAY 0808	245	3.
21 MAY 0040	21	4.	*	21 MAY 0310	96	634.	*	21 MAY 0540	171	37.	*	21 MAY 0810	246	2.
21 MAY 0042	22	4.	*	21 MAY 0312	97	597.	*	21 MAY 0542	172	36.	*	21 MAY 0812	247	2.
21 MAY 0044	23	4.	*	21 MAY 0314	98	554.	*	21 MAY 0544	173	35.	*	21 MAY 0814	248	2.
21 MAY 0046	24	4.	*	21 MAY 0316	99	522.	*	21 MAY 0546	174	34.	*	21 MAY 0816	249	2.
21 MAY 0048	25	4.	*	21 MAY 0318	100	503.	*	21 MAY 0548	175	34.	*	21 MAY 0818	250	2.
21 MAY 0050	26	4.	*	21 MAY 0320	101	491.	*	21 MAY 0550	176	33.	*	21 MAY 0820	251	2.
21 MAY 0052	27	4.	*	21 MAY 0322	102	477.	*	21 MAY 0552	177	32.	*	21 MAY 0822	252	2.
21 MAY 0054	28	4.	*	21 MAY 0324	103	455.	*	21 MAY 0554	178	32.	*	21 MAY 0824	253	2.
21 MAY 0056	29	4.	*	21 MAY 0326	104	426.	*	21 MAY 0556	179	31.	*	21 MAY 0826	254	2.
21 MAY 0058	30	4.	*	21 MAY 0328	105	396.	*	21 MAY 0558	180	30.	*	21 MAY 0828	255	2.
21 MAY 0100	31	4.	*	21 MAY 0330	106	367.	*	21 MAY 0600	181	30.	*	21 MAY 0830	256	2.
21 MAY 0102	32	4.	*	21 MAY 0332	107	342.	*	21 MAY 0602	182	29.	*	21 MAY 0832	257	2.
21 MAY 0104	33	4.	*	21 MAY 0334	108	319.	*	21 MAY 0604	183	29.	*	21 MAY 0834	258	2.
21 MAY 0106	34	4.	*	21 MAY 0336	109	299.	*	21 MAY 0606	184	28.	*	21 MAY 0836	259	2.
21 MAY 0108	35	5.	*	21 MAY 0338	110	280.	*	21 MAY 0608	185	28.	*	21 MAY 0838	260	2.
21 MAY 0110	36	5.	*	21 MAY 0340	111	263.	*	21 MAY 0610	186	27.	*	21 MAY 0840	261	2.
21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
			*				*				*			

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 635.	3.13		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

CUMULATIVE AREA = 0.00 SQ MI

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Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

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          *            *
47 KK     *    RETAIN  *
          *            *
          **************
                         RETENTION BASIN NORTH OF ARIZONA CANAL
                         REMOVE 5 HOUSES

             HYDROGRAPH ROUTING DATA

50 RS          STORAGE ROUTING
                    NSTPS            1  NUMBER OF SUBREACHES
                     ITYP         STOR  TYPE OF INITIAL CONDITION
                   RSVRIC         0.00  INITIAL CONDITION
                        X         0.00 WORKING R AND D COEFFICIENT

51 SA              AREA          3.0       3.6       3.8       4.3       4.6

52 SE          ELEVATION      1264.00   1268.00   1270.00   1273.00   1275.00

53 SQ          DISCHARGE           0.       40.       80.      100.      100.      100.      100.      100.      100.

54 SE          ELEVATION      1265.00   1267.08   1267.61   1268.53   1269.37   1270.20   1271.09   1273.25   1274.58
                                                            ***

                                                COMPUTED STORAGE-ELEVATION DATA

          STORAGE       0.00     13.21     20.62     32.80     41.63
        ELEVATION    1264.00   1268.00   1270.00   1273.00   1275.00

                                              COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      3.10      9.98     11.82     13.21     15.12     18.23     20.62     21.40     24.90
          OUTFLOW       0.00      0.00     40.00     80.00     88.48    100.00    100.00    100.00    100.00    100.00
        ELEVATION    1264.00   1265.00   1267.08   1267.61   1268.00   1268.53   1269.37   1270.00   1270.20   1271.09

          STORAGE      32.80     33.87     39.72     41.63
          OUTFLOW     100.00    100.00    100.00    100.00
        ELEVATION    1273.00   1273.25   1274.58   1275.00
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HYDROGRAPH AT STATION RETAIN

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Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
21	MAY	0000	1	0.	0.0	1264.0	21	MAY	0320	101	100.	15.8	1268.7	21	MAY	0640	201	100.	28.7	1272.0
21	MAY	0002	2	0.	0.0	1264.0	21	MAY	0322	102	100.	16.8	1269.0	21	MAY	0642	202	100.	28.4	1271.9
21	MAY	0004	3	0.	0.0	1264.0	21	MAY	0324	103	100.	17.8	1269.3	21	MAY	0644	203	100.	28.2	1271.9
21	MAY	0006	4	0.	0.0	1264.0	21	MAY	0326	104	100.	18.8	1269.5	21	MAY	0646	204	100.	28.0	1271.8
21	MAY	0008	5	0.	0.0	1264.0	21	MAY	0328	105	100.	19.6	1269.7	21	MAY	0648	205	100.	27.7	1271.8
21	MAY	0010	6	0.	0.0	1264.0	21	MAY	0330	106	100.	20.4	1269.9	21	MAY	0650	206	100.	27.5	1271.7
21	MAY	0012	7	0.	0.0	1264.0	21	MAY	0332	107	100.	21.1	1270.1	21	MAY	0652	207	100.	27.2	1271.6
21	MAY	0014	8	0.	0.0	1264.0	21	MAY	0334	108	100.	21.8	1270.3	21	MAY	0654	208	100.	27.0	1271.6
21	MAY	0016	9	0.	0.0	1264.0	21	MAY	0336	109	100.	22.3	1270.4	21	MAY	0656	209	100.	26.7	1271.5
21	MAY	0018	10	0.	0.0	1264.0	21	MAY	0338	110	100.	22.8	1270.6	21	MAY	0658	210	100.	26.5	1271.5
21	MAY	0020	11	0.	0.0	1264.0	21	MAY	0340	111	100.	23.3	1270.7	21	MAY	0700	211	100.	26.2	1271.4
21	MAY	0022	12	0.	0.0	1264.0	21	MAY	0342	112	100.	23.8	1270.8	21	MAY	0702	212	100.	26.0	1271.3
21	MAY	0024	13	0.	0.0	1264.0	21	MAY	0344	113	100.	24.2	1270.9	21	MAY	0704	213	100.	25.7	1271.3
21	MAY	0026	14	0.	0.0	1264.0	21	MAY	0346	114	100.	24.6	1271.0	21	MAY	0706	214	100.	25.4	1271.2
21	MAY	0028	15	0.	0.0	1264.0	21	MAY	0348	115	100.	25.0	1271.1	21	MAY	0708	215	100.	25.2	1271.2
21	MAY	0030	16	0.	0.0	1264.0	21	MAY	0350	116	100.	25.4	1271.2	21	MAY	0710	216	100.	24.9	1271.1
21	MAY	0032	17	0.	0.0	1264.0	21	MAY	0352	117	100.	25.9	1271.3	21	MAY	0712	217	100.	24.7	1271.0
21	MAY	0034	18	0.	0.0	1264.0	21	MAY	0354	118	100.	26.3	1271.4	21	MAY	0714	218	100.	24.4	1271.0
21	MAY	0036	19	0.	0.0	1264.0	21	MAY	0356	119	100.	26.8	1271.6	21	MAY	0716	219	100.	24.2	1270.9
21	MAY	0038	20	0.	0.0	1264.0	21	MAY	0358	120	100.	27.3	1271.7	21	MAY	0718	220	100.	23.9	1270.8
21	MAY	0040	21	0.	0.1	1264.0	21	MAY	0400	121	100.	27.8	1271.8	21	MAY	0720	221	100.	23.6	1270.8
21	MAY	0042	22	0.	0.1	1264.0	21	MAY	0402	122	100.	28.3	1271.9	21	MAY	0722	222	100.	23.4	1270.7
21	MAY	0044	23	0.	0.1	1264.0	21	MAY	0404	123	100.	28.8	1272.0	21	MAY	0724	223	100.	23.1	1270.6
21	MAY	0046	24	0.	0.1	1264.0	21	MAY	0406	124	100.	29.3	1272.2	21	MAY	0726	224	100.	22.9	1270.6
21	MAY	0048	25	0.	0.1	1264.0	21	MAY	0408	125	100.	29.8	1272.3	21	MAY	0728	225	100.	22.6	1270.5
21	MAY	0050	26	0.	0.1	1264.0	21	MAY	0410	126	100.	30.4	1272.4	21	MAY	0730	226	100.	22.3	1270.4
21	MAY	0052	27	0.	0.1	1264.0	21	MAY	0412	127	100.	30.9	1272.5	21	MAY	0732	227	100.	22.1	1270.4
21	MAY	0054	28	0.	0.1	1264.0	21	MAY	0414	128	100.	31.4	1272.7	21	MAY	0734	228	100.	21.8	1270.3
21	MAY	0056	29	0.	0.1	1264.0	21	MAY	0416	129	100.	31.9	1272.8	21	MAY	0736	229	100.	21.5	1270.2
21	MAY	0058	30	0.	0.2	1264.0	21	MAY	0418	130	100.	32.4	1272.9	21	MAY	0738	230	100.	21.3	1270.2
21	MAY	0100	31	0.	0.2	1264.1	21	MAY	0420	131	100.	32.9	1273.0	21	MAY	0740	231	100.	21.0	1270.1
21	MAY	0102	32	0.	0.2	1264.1	21	MAY	0422	132	100.	33.4	1273.1	21	MAY	0742	232	100.	20.7	1270.0
21	MAY	0104	33	0.	0.2	1264.1	21	MAY	0424	133	100.	33.9	1273.3	21	MAY	0744	233	100.	20.5	1270.0
21	MAY	0106	34	0.	0.2	1264.1	21	MAY	0426	134	100.	34.4	1273.4	21	MAY	0746	234	100.	20.2	1269.9
21	MAY	0108	35	0.	0.2	1264.1	21	MAY	0428	135	100.	34.8	1273.5	21	MAY	0748	235	100.	19.9	1269.8
21	MAY	0110	36	0.	0.2	1264.1	21	MAY	0430	136	100.	35.2	1273.6	21	MAY	0750	236	100.	19.7	1269.8
21	MAY	0112	37	0.	0.2	1264.1	21	MAY	0432	137	100.	35.6	1273.6	21	MAY	0752	237	100.	19.4	1269.7
21	MAY	0114	38	0.	0.3	1264.1	21	MAY	0434	138	100.	35.9	1273.7	21	MAY	0754	238	100.	19.1	1269.6
21	MAY	0116	39	0.	0.3	1264.1	21	MAY	0436	139	100.	36.2	1273.8	21	MAY	0756	239	100.	18.9	1269.5
21	MAY	0118	40	0.	0.3	1264.1	21	MAY	0438	140	100.	36.4	1273.8	21	MAY	0758	240	100.	18.6	1269.5
21	MAY	0120	41	0.	0.3	1264.1	21	MAY	0440	141	100.	36.6	1273.9	21	MAY	0800	241	100.	18.3	1269.4
21	MAY	0122	42	0.	0.3	1264.1	21	MAY	0442	142	100.	36.8	1273.9	21	MAY	0802	242	100.	18.1	1269.3

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

21 MAY 0124	43	0.	0.3	1264.1	*	21 MAY 0444	143	100.	36.9	1273.9	*	21 MAY 0804	243	100.	17.8	1269.3
21 MAY 0126	44	0.	0.3	1264.1	*	21 MAY 0446	144	100.	37.0	1274.0	*	21 MAY 0806	244	100.	17.5	1269.2
21 MAY 0128	45	0.	0.3	1264.1	*	21 MAY 0448	145	100.	37.1	1274.0	*	21 MAY 0808	245	100.	17.3	1269.1
21 MAY 0130	46	0.	0.4	1264.1	*	21 MAY 0450	146	100.	37.2	1274.0	*	21 MAY 0810	246	100.	17.0	1269.0
21 MAY 0132	47	0.	0.4	1264.1	*	21 MAY 0452	147	100.	37.3	1274.0	*	21 MAY 0812	247	100.	16.7	1269.0
21 MAY 0134	48	0.	0.4	1264.1	*	21 MAY 0454	148	100.	37.3	1274.0	*	21 MAY 0814	248	100.	16.5	1268.9
21 MAY 0136	49	0.	0.4	1264.1	*	21 MAY 0456	149	100.	37.3	1274.0	*	21 MAY 0816	249	100.	16.2	1268.8
21 MAY 0138	50	0.	0.4	1264.1	*	21 MAY 0458	150	100.	37.3	1274.0	*	21 MAY 0818	250	100.	15.9	1268.7
21 MAY 0140	51	0.	0.4	1264.1	*	21 MAY 0500	151	100.	37.3	1274.0	*	21 MAY 0820	251	100.	15.7	1268.7
21 MAY 0142	52	0.	0.4	1264.1	*	21 MAY 0502	152	100.	37.2	1274.0	*	21 MAY 0822	252	100.	15.4	1268.6
21 MAY 0144	53	0.	0.5	1264.1	*	21 MAY 0504	153	100.	37.2	1274.0	*	21 MAY 0824	253	100.	15.1	1268.5
21 MAY 0146	54	0.	0.5	1264.2	*	21 MAY 0506	154	100.	37.1	1274.0	*	21 MAY 0826	254	98.	14.9	1268.5
21 MAY 0148	55	0.	0.5	1264.2	*	21 MAY 0508	155	100.	37.1	1274.0	*	21 MAY 0828	255	97.	14.6	1268.4
21 MAY 0150	56	0.	0.5	1264.2	*	21 MAY 0510	156	100.	37.0	1274.0	*	21 MAY 0830	256	95.	14.3	1268.3
21 MAY 0152	57	0.	0.5	1264.2	*	21 MAY 0512	157	100.	36.9	1273.9	*	21 MAY 0832	257	94.	14.1	1268.2
21 MAY 0154	58	0.	0.6	1264.2	*	21 MAY 0514	158	100.	36.8	1273.9	*	21 MAY 0834	258	92.	13.8	1268.2
21 MAY 0156	59	0.	0.6	1264.2	*	21 MAY 0516	159	100.	36.6	1273.9	*	21 MAY 0836	259	91.	13.6	1268.1
21 MAY 0158	60	0.	0.6	1264.2	*	21 MAY 0518	160	100.	36.5	1273.9	*	21 MAY 0838	260	89.	13.3	1268.0
21 MAY 0200	61	0.	0.6	1264.2	*	21 MAY 0520	161	100.	36.4	1273.8	*	21 MAY 0840	261	88.	13.1	1268.0
21 MAY 0202	62	0.	0.6	1264.2	*	21 MAY 0522	162	100.	36.3	1273.8	*	21 MAY 0842	262	86.	12.9	1267.9
21 MAY 0204	63	0.	0.7	1264.2	*	21 MAY 0524	163	100.	36.1	1273.8	*	21 MAY 0844	263	85.	12.6	1267.8
21 MAY 0206	64	0.	0.7	1264.2	*	21 MAY 0526	164	100.	36.0	1273.7	*	21 MAY 0846	264	84.	12.4	1267.8
21 MAY 0208	65	0.	0.7	1264.2	*	21 MAY 0528	165	100.	35.8	1273.7	*	21 MAY 0848	265	82.	12.2	1267.7
21 MAY 0210	66	0.	0.8	1264.2	*	21 MAY 0530	166	100.	35.7	1273.7	*	21 MAY 0850	266	81.	12.0	1267.6
21 MAY 0212	67	0.	0.8	1264.3	*	21 MAY 0532	167	100.	35.5	1273.6	*	21 MAY 0852	267	78.	11.7	1267.6
21 MAY 0214	68	0.	0.8	1264.3	*	21 MAY 0534	168	100.	35.3	1273.6	*	21 MAY 0854	268	74.	11.5	1267.5
21 MAY 0216	69	0.	0.9	1264.3	*	21 MAY 0536	169	100.	35.2	1273.5	*	21 MAY 0856	269	70.	11.3	1267.5
21 MAY 0218	70	0.	0.9	1264.3	*	21 MAY 0538	170	100.	35.0	1273.5	*	21 MAY 0858	270	66.	11.2	1267.4
21 MAY 0220	71	0.	0.9	1264.3	*	21 MAY 0540	171	100.	34.8	1273.5	*	21 MAY 0900	271	62.	11.0	1267.4
21 MAY 0222	72	0.	1.0	1264.3	*	21 MAY 0542	172	100.	34.7	1273.4	*	21 MAY 0902	272	58.	10.8	1267.3
21 MAY 0224	73	0.	1.0	1264.3	*	21 MAY 0544	173	100.	34.5	1273.4	*	21 MAY 0904	273	55.	10.7	1267.3
21 MAY 0226	74	0.	1.1	1264.3	*	21 MAY 0546	174	100.	34.3	1273.3	*	21 MAY 0906	274	52.	10.5	1267.2
21 MAY 0228	75	0.	1.1	1264.4	*	21 MAY 0548	175	100.	34.1	1273.3	*	21 MAY 0908	275	49.	10.4	1267.2
21 MAY 0230	76	0.	1.2	1264.4	*	21 MAY 0550	176	100.	33.9	1273.3	*	21 MAY 0910	276	46.	10.3	1267.2
21 MAY 0232	77	0.	1.2	1264.4	*	21 MAY 0552	177	100.	33.7	1273.2	*	21 MAY 0912	277	44.	10.1	1267.1
21 MAY 0234	78	0.	1.2	1264.4	*	21 MAY 0554	178	100.	33.6	1273.2	*	21 MAY 0914	278	41.	10.0	1267.1
21 MAY 0236	79	0.	1.3	1264.4	*	21 MAY 0556	179	100.	33.4	1273.1	*	21 MAY 0916	279	40.	9.9	1267.1
21 MAY 0238	80	0.	1.4	1264.4	*	21 MAY 0558	180	100.	33.2	1273.1	*	21 MAY 0918	280	39.	9.8	1267.0
21 MAY 0240	81	0.	1.4	1264.5	*	21 MAY 0600	181	100.	33.0	1273.0	*	21 MAY 0920	281	38.	9.7	1267.0
21 MAY 0242	82	0.	1.5	1264.5	*	21 MAY 0602	182	100.	32.8	1273.0	*	21 MAY 0922	282	38.	9.6	1267.0
21 MAY 0244	83	0.	1.6	1264.5	*	21 MAY 0604	183	100.	32.6	1273.0	*	21 MAY 0924	283	37.	9.5	1266.9
21 MAY 0246	84	0.	1.7	1264.5	*	21 MAY 0606	184	100.	32.4	1272.9	*	21 MAY 0926	284	37.	9.4	1266.9
21 MAY 0248	85	0.	1.8	1264.6	*	21 MAY 0608	185	100.	32.2	1272.9	*	21 MAY 0928	285	36.	9.3	1266.9
21 MAY 0250	86	0.	1.9	1264.6	*	21 MAY 0610	186	100.	32.0	1272.8	*	21 MAY 0930	286	36.	9.2	1266.8
21 MAY 0252	87	0.	2.1	1264.7	*	21 MAY 0612	187	100.	31.8	1272.8	*	21 MAY 0932	287	35.	9.1	1266.8

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

21 MAY	0254	88	0.	2.3	1264.7	*	21 MAY	0614	188	100.	31.6	1272.7	*	21 MAY	0934	288	34.	9.0	1266.8
21 MAY	0256	89	0.	2.5	1264.8	*	21 MAY	0616	189	100.	31.4	1272.7	*	21 MAY	0936	289	34.	8.9	1266.8
21 MAY	0258	90	0.	2.9	1264.9	*	21 MAY	0618	190	100.	31.2	1272.6	*	21 MAY	0938	290	33.	8.8	1266.7
21 MAY	0300	91	1.	3.3	1265.1	*	21 MAY	0620	191	100.	31.0	1272.6	*	21 MAY	0940	291	33.	8.8	1266.7
21 MAY	0302	92	5.	3.9	1265.2	*	21 MAY	0622	192	100.	30.8	1272.5	*	21 MAY	0942	292	32.	8.7	1266.7
21 MAY	0304	93	10.	4.8	1265.5	*	21 MAY	0624	193	100.	30.5	1272.5	*	21 MAY	0944	293	32.	8.6	1266.7
21 MAY	0306	94	17.	6.1	1265.9	*	21 MAY	0626	194	100.	30.3	1272.4	*	21 MAY	0946	294	31.	8.5	1266.6
21 MAY	0308	95	27.	7.7	1266.4	*	21 MAY	0628	195	100.	30.1	1272.3	*	21 MAY	0948	295	31.	8.4	1266.6
21 MAY	0310	96	36.	9.3	1266.9	*	21 MAY	0630	196	100.	29.9	1272.3	*	21 MAY	0950	296	30.	8.3	1266.6
21 MAY	0312	97	60.	10.9	1267.3	*	21 MAY	0632	197	100.	29.6	1272.2	*	21 MAY	0952	297	30.	8.3	1266.6
21 MAY	0314	98	83.	12.3	1267.7	*	21 MAY	0634	198	100.	29.4	1272.2	*	21 MAY	0954	298	30.	8.2	1266.5
21 MAY	0316	99	90.	13.5	1268.1	*	21 MAY	0636	199	100.	29.2	1272.1	*	21 MAY	0956	299	29.	8.1	1266.5
21 MAY	0318	100	97.	14.7	1268.4	*	21 MAY	0638	200	100.	28.9	1272.1	*	21 MAY	0958	300	29.	8.0	1266.5
						*							*						

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 100.	3.33		97.	61.	61.	61.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	48.	50.	50.	50.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
37.	4.93	26.	17.	17.	17.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1274.03	4.93	1271.25	1268.68	1268.68	1268.68

CUMULATIVE AREA = 0.00 SQ MI

1

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

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

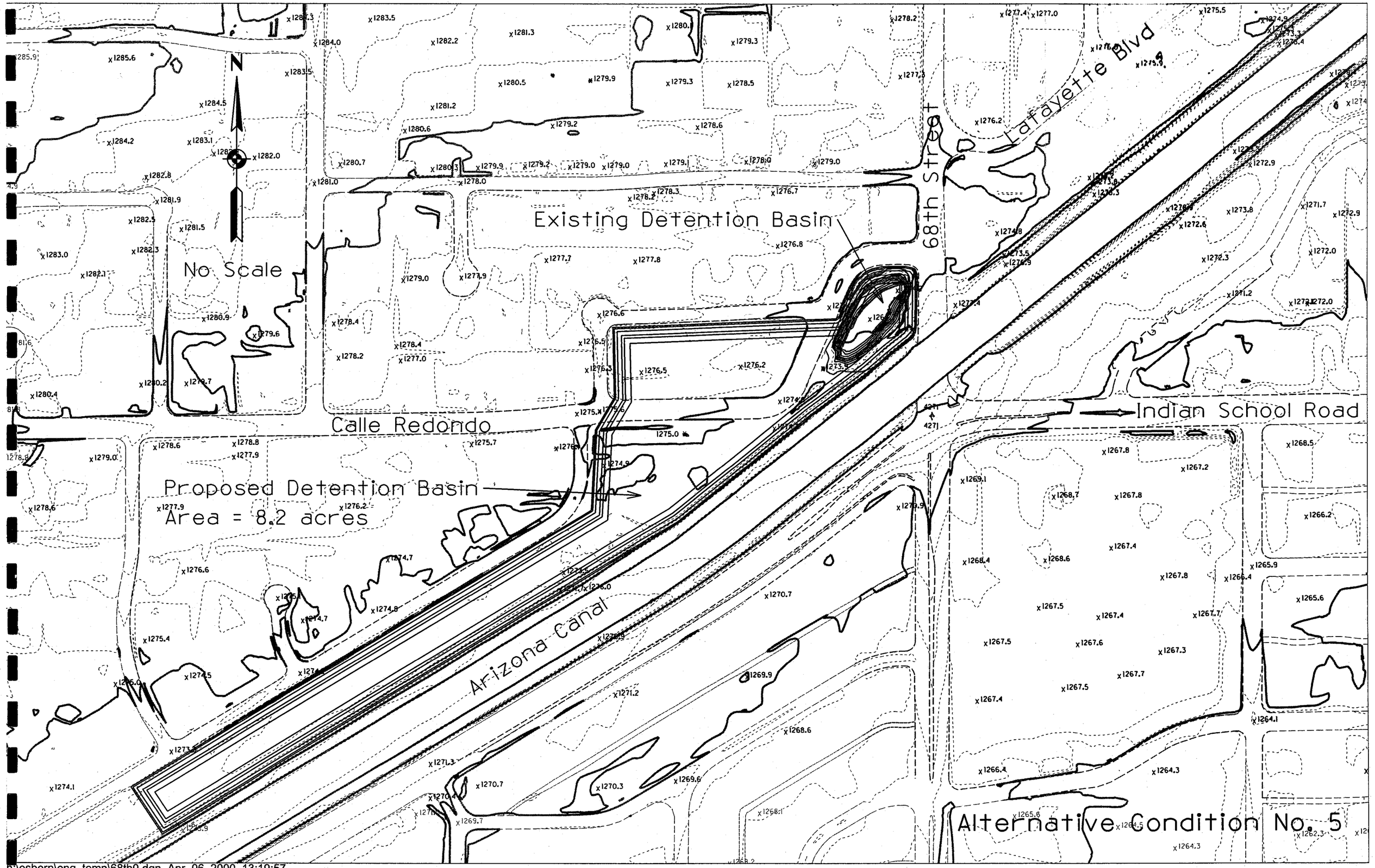
Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

	HYDROGRAPH AT								
+		FLOOD	635.	3.13	116.	71.	71.	0.00	
	ROUTED TO								
+		RETAIN	100.	3.33	97.	61.	61.	0.00	
+									1274.03	4.93

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

Condition No. 4
Proposed 100-yr Detention Basin
Existing Discharge Pipe = 100 cfs Max

Alternative Condition Number 5



n:\osborn\eng_temp\68th0.dgn Apr. 06, 2000 13:19:57

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  14:15:43  *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
****************************************
```

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

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

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

1 HEC-1 INPUT PAGE 1

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

   1          ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
   2          ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
   3          ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
   4          ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
   5          ID
   6          ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
   7          ID          ALTERNATIVE CONDITION NO. 5- PROPOSED 100-YEAR DETENTION BASIN
```

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

```
 8          ID                                        ZERO DISCHARGE AT OUTFALL
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: RETAIN.DAT
13          ID
14          IT       2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI       0       0       0       0       0       0       0       0       0       0
18          QI       0       1       1       1       1       2       2       3       3       4
19          QI       4       4       4       4       4       4       4       4       4       4
20          QI       4       4       4       4       5       5       5       5       5       5
21          QI       5       5       5       5       5       5       5       5       5       5
22          QI       5       6       6       6       6       7       7       7       8       8
23          QI       9       9      10      10      11      12      12      13      13      14
24          QI      14      15      15      16      16      17      17      18      19      21
25          QI      24      27      32      38      46      56      68      82     101     128
26          QI     176     265     411     558     635     634     597     554     522     503
27          QI     491     477     455     426     396     367     342     319     299     280
28          QI     263     254     249     248     253     260     264     269     273     276
29          QI     280     285     290     292     291     290     283     276     278     287
30          QI     297     286     275     263     250     237     222     207     193     180
31          QI     168     158     148     139     130     122     115     107     101      95
32          QI      89      84      79      75      70      66      63      60      57      54
33          QI      52      50      48      46      44      43      41      40      39      38
34          QI      37      36      35      34      34      33      32      32      31      30
35          QI      30      29      29      28      28      27      26      26      25      24
36          QI      23      21      20      19      18      17      16      15      14      13
37          QI      13      12      11      11      10      10       9       9       9       8
38          QI       8       8       7       7       7       7       6       6       6       6
39          QI       5       5       5       5       5       5       4       4       4       4
40          QI       4       4       4       4       3       3       3       3       3       3
41          QI       3       3       3       3       3       2       2       2       2       2
42          QI       2       2       2       2       2       2       2       2       2       2
43          QI       2       2       2       2       2       2       1       1       1       1
44          QI       1       1       1       1       1       1       1       1       1       1
45          QI       1       1       1       1       1       1       1       1       1       1
46          QI       1       1       1       1       1       1       1       1       1       1

47          KK  RETAIN
48          KM   RETENTION BASIN NORTH OF ARIZONA CANAL
49          KM   REMOVE 16 HOUSES
50          RS       1    STOR       0
```

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

```
            51          SA    4.54    5.84    6.52    7.54    8.23
            52          SE    1264    1268    1270    1273    1275
            53          SQ       0       1
1                                                HEC-1 INPUT                                                    PAGE  2

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

            54          SE    1265 1275.00
            55          ZZ
1****************************************                                                  ****************************************
 *                                      *                                                  *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                  *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991              *                                                  *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.0.1E             *                                                  *          609 SECOND STREET           *
 *     Lahey F77L-EM/32 version 5.01    *                                                  *       DAVIS, CALIFORNIA 95616        *
 *       Dodson & Associates, Inc.      *                                                  *           (916) 551-1748             *
 *  RUN DATE  04/06/00  TIME  14:15:43  *                                                  *                                      *
 ****************************************                                                  ****************************************
```

COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 5- PROPOSED 100-YEAR DETENTION BASIN
ZERO DISCHARGE AT OUTFALL

ALAN HUMPHREY
9/99

FILE: RETAIN.DAT

```
     IT          HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
                      IDATE     21MAY97  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     21MAY97  ENDING DATE
                     NDTIME        0958  ENDING TIME
                      ICENT          19  CENTURY MARK
```

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

COMPUTATION INTERVAL 0.03 HOURS
TOTAL TIME BASE 9.97 HOURS

ENGLISH UNITS

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

*** ***

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              **************
              *            *
  15 KK       *     FLOOD  *
              *            *
              **************
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68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

SUBBASIN RUNOFF DATA

0 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

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HYDROGRAPH AT STATION FLOOD

****

DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW	*	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	*	21 MAY 0230	76	17.	*	21 MAY 0500	151	89.	*	21 MAY 0730	226	5.
21 MAY 0002	2	0.	*	21 MAY 0232	77	17.	*	21 MAY 0502	152	84.	*	21 MAY 0732	227	4.
21 MAY 0004	3	0.	*	21 MAY 0234	78	18.	*	21 MAY 0504	153	79.	*	21 MAY 0734	228	4.
21 MAY 0006	4	0.	*	21 MAY 0236	79	19.	*	21 MAY 0506	154	75.	*	21 MAY 0736	229	4.
21 MAY 0008	5	0.	*	21 MAY 0238	80	21.	*	21 MAY 0508	155	70.	*	21 MAY 0738	230	4.

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

21 MAY 0010	6	0.	*	21 MAY 0240	81	24.	*	21 MAY 0510	156	66.	*	21 MAY 0740	231	4.
21 MAY 0012	7	0.	*	21 MAY 0242	82	27.	*	21 MAY 0512	157	63.	*	21 MAY 0742	232	4.
21 MAY 0014	8	0.	*	21 MAY 0244	83	32.	*	21 MAY 0514	158	60.	*	21 MAY 0744	233	4.
21 MAY 0016	9	0.	*	21 MAY 0246	84	38.	*	21 MAY 0516	159	57.	*	21 MAY 0746	234	4.
21 MAY 0018	10	0.	*	21 MAY 0248	85	46.	*	21 MAY 0518	160	54.	*	21 MAY 0748	235	3.
21 MAY 0020	11	0.	*	21 MAY 0250	86	56.	*	21 MAY 0520	161	52.	*	21 MAY 0750	236	3.
21 MAY 0022	12	1.	*	21 MAY 0252	87	68.	*	21 MAY 0522	162	50.	*	21 MAY 0752	237	3.
21 MAY 0024	13	1.	*	21 MAY 0254	88	82.	*	21 MAY 0524	163	48.	*	21 MAY 0754	238	3.
21 MAY 0026	14	1.	*	21 MAY 0256	89	101.	*	21 MAY 0526	164	46.	*	21 MAY 0756	239	3.
21 MAY 0028	15	1.	*	21 MAY 0258	90	128.	*	21 MAY 0528	165	44.	*	21 MAY 0758	240	3.
21 MAY 0030	16	2.	*	21 MAY 0300	91	176.	*	21 MAY 0530	166	43.	*	21 MAY 0800	241	3.
21 MAY 0032	17	2.	*	21 MAY 0302	92	265.	*	21 MAY 0532	167	41.	*	21 MAY 0802	242	3.
21 MAY 0034	18	3.	*	21 MAY 0304	93	411.	*	21 MAY 0534	168	40.	*	21 MAY 0804	243	3.
21 MAY 0036	19	3.	*	21 MAY 0306	94	558.	*	21 MAY 0536	169	39.	*	21 MAY 0806	244	3.
21 MAY 0038	20	4.	*	21 MAY 0308	95	635.	*	21 MAY 0538	170	38.	*	21 MAY 0808	245	3.
21 MAY 0040	21	4.	*	21 MAY 0310	96	634.	*	21 MAY 0540	171	37.	*	21 MAY 0810	246	2.
21 MAY 0042	22	4.	*	21 MAY 0312	97	597.	*	21 MAY 0542	172	36.	*	21 MAY 0812	247	2.
21 MAY 0044	23	4.	*	21 MAY 0314	98	554.	*	21 MAY 0544	173	35.	*	21 MAY 0814	248	2.
21 MAY 0046	24	4.	*	21 MAY 0316	99	522.	*	21 MAY 0546	174	34.	*	21 MAY 0816	249	2.
21 MAY 0048	25	4.	*	21 MAY 0318	100	503.	*	21 MAY 0548	175	34.	*	21 MAY 0818	250	2.
21 MAY 0050	26	4.	*	21 MAY 0320	101	491.	*	21 MAY 0550	176	33.	*	21 MAY 0820	251	2.
21 MAY 0052	27	4.	*	21 MAY 0322	102	477.	*	21 MAY 0552	177	32.	*	21 MAY 0822	252	2.
21 MAY 0054	28	4.	*	21 MAY 0324	103	455.	*	21 MAY 0554	178	32.	*	21 MAY 0824	253	2.
21 MAY 0056	29	4.	*	21 MAY 0326	104	426.	*	21 MAY 0556	179	31.	*	21 MAY 0826	254	2.
21 MAY 0058	30	4.	*	21 MAY 0328	105	396.	*	21 MAY 0558	180	30.	*	21 MAY 0828	255	2.
21 MAY 0100	31	4.	*	21 MAY 0330	106	367.	*	21 MAY 0600	181	30.	*	21 MAY 0830	256	2.
21 MAY 0102	32	4.	*	21 MAY 0332	107	342.	*	21 MAY 0602	182	29.	*	21 MAY 0832	257	2.
21 MAY 0104	33	4.	*	21 MAY 0334	108	319.	*	21 MAY 0604	183	29.	*	21 MAY 0834	258	2.
21 MAY 0106	34	4.	*	21 MAY 0336	109	299.	*	21 MAY 0606	184	28.	*	21 MAY 0836	259	2.
21 MAY 0108	35	5.	*	21 MAY 0338	110	280.	*	21 MAY 0608	185	28.	*	21 MAY 0838	260	2.
21 MAY 0110	36	5.	*	21 MAY 0340	111	263.	*	21 MAY 0610	186	27.	*	21 MAY 0840	261	2.
21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
			*				*				*			

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 635.	3.13		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

CUMULATIVE AREA = 0.00 SQ MI

*** ***

****

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

```
          *            *
47 KK     *    RETAIN  *
          *            *
          **************
                         RETENTION BASIN NORTH OF ARIZONA CANAL
                         REMOVE 16 HOUSES

            HYDROGRAPH ROUTING DATA

50 RS         STORAGE ROUTING
                   NSTPS          1  NUMBER OF SUBREACHES
                    ITYP       STOR  TYPE OF INITIAL CONDITION
                  RSVRIC       0.00  INITIAL CONDITION
                       X       0.00 WORKING R AND D COEFFICIENT

51 SA             AREA        4.5       5.8       6.5       7.5       8.2

52 SE         ELEVATION    1264.00   1268.00   1270.00   1273.00   1275.00

53 SQ         DISCHARGE         0.        1.

54 SE         ELEVATION    1265.00   1275.00
                                                    ***

                                   COMPUTED STORAGE-ELEVATION DATA

        STORAGE       0.00     20.71     33.06     54.13     69.90
      ELEVATION    1264.00   1268.00   1270.00   1273.00   1275.00

                              COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

        STORAGE       0.00      4.69     20.71     33.06     54.13     69.90
        OUTFLOW       0.00      0.00      0.30      0.50      0.80      1.00
      ELEVATION    1264.00   1265.00   1268.00   1270.00   1273.00   1275.00
*****************************************************************************************************************************
                                   HYDROGRAPH AT STATION   RETAIN
*****************************************************************************************************************************
                                          *                                                  *
 DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE * DA MON HRMN ORD  OUTFLOW  STORAGE   STAGE
                                          *                                                  *
 21 MAY 0000   1       0.      0.0  1264.0 * 21 MAY 0320 101       0.     17.1  1267.3 * 21 MAY 0640 201       1.     57.4  1273.4
```

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

21	MAY	0002	2	0.	0.0	1264.0	*	21	MAY	0322	102	0.	18.4	1267.6	*	21	MAY	0642	202	1.	57.4	1273.4
21	MAY	0004	3	0.	0.0	1264.0	*	21	MAY	0324	103	0.	19.7	1267.8	*	21	MAY	0644	203	1.	57.4	1273.4
21	MAY	0006	4	0.	0.0	1264.0	*	21	MAY	0326	104	0.	20.9	1268.0	*	21	MAY	0646	204	1.	57.4	1273.4
21	MAY	0008	5	0.	0.0	1264.0	*	21	MAY	0328	105	0.	22.0	1268.2	*	21	MAY	0648	205	1.	57.5	1273.4
21	MAY	0010	6	0.	0.0	1264.0	*	21	MAY	0330	106	0.	23.1	1268.4	*	21	MAY	0650	206	1.	57.5	1273.4
21	MAY	0012	7	0.	0.0	1264.0	*	21	MAY	0332	107	0.	24.1	1268.5	*	21	MAY	0652	207	1.	57.5	1273.4
21	MAY	0014	8	0.	0.0	1264.0	*	21	MAY	0334	108	0.	25.0	1268.7	*	21	MAY	0654	208	1.	57.5	1273.4
21	MAY	0016	9	0.	0.0	1264.0	*	21	MAY	0336	109	0.	25.8	1268.8	*	21	MAY	0656	209	1.	57.6	1273.4
21	MAY	0018	10	0.	0.0	1264.0	*	21	MAY	0338	110	0.	26.6	1269.0	*	21	MAY	0658	210	1.	57.6	1273.4
21	MAY	0020	11	0.	0.0	1264.0	*	21	MAY	0340	111	0.	27.4	1269.1	*	21	MAY	0700	211	1.	57.6	1273.4
21	MAY	0022	12	0.	0.0	1264.0	*	21	MAY	0342	112	0.	28.1	1269.2	*	21	MAY	0702	212	1.	57.6	1273.4
21	MAY	0024	13	0.	0.0	1264.0	*	21	MAY	0344	113	0.	28.8	1269.3	*	21	MAY	0704	213	1.	57.6	1273.4
21	MAY	0026	14	0.	0.0	1264.0	*	21	MAY	0346	114	0.	29.5	1269.4	*	21	MAY	0706	214	1.	57.7	1273.4
21	MAY	0028	15	0.	0.0	1264.0	*	21	MAY	0348	115	0.	30.2	1269.5	*	21	MAY	0708	215	1.	57.7	1273.5
21	MAY	0030	16	0.	0.0	1264.0	*	21	MAY	0350	116	0.	30.9	1269.6	*	21	MAY	0710	216	1.	57.7	1273.5
21	MAY	0032	17	0.	0.0	1264.0	*	21	MAY	0352	117	0.	31.6	1269.8	*	21	MAY	0712	217	1.	57.7	1273.5
21	MAY	0034	18	0.	0.0	1264.0	*	21	MAY	0354	118	0.	32.3	1269.9	*	21	MAY	0714	218	1.	57.7	1273.5
21	MAY	0036	19	0.	0.0	1264.0	*	21	MAY	0356	119	0.	33.1	1270.0	*	21	MAY	0716	219	1.	57.7	1273.5
21	MAY	0038	20	0.	0.0	1264.0	*	21	MAY	0358	120	1.	33.8	1270.1	*	21	MAY	0718	220	1.	57.8	1273.5
21	MAY	0040	21	0.	0.1	1264.0	*	21	MAY	0400	121	1.	34.6	1270.2	*	21	MAY	0720	221	1.	57.8	1273.5
21	MAY	0042	22	0.	0.1	1264.0	*	21	MAY	0402	122	1.	35.3	1270.3	*	21	MAY	0722	222	1.	57.8	1273.5
21	MAY	0044	23	0.	0.1	1264.0	*	21	MAY	0404	123	1.	36.1	1270.4	*	21	MAY	0724	223	1.	57.8	1273.5
21	MAY	0046	24	0.	0.1	1264.0	*	21	MAY	0406	124	1.	36.9	1270.6	*	21	MAY	0726	224	1.	57.8	1273.5
21	MAY	0048	25	0.	0.1	1264.0	*	21	MAY	0408	125	1.	37.7	1270.7	*	21	MAY	0728	225	1.	57.8	1273.5
21	MAY	0050	26	0.	0.1	1264.0	*	21	MAY	0410	126	1.	38.5	1270.8	*	21	MAY	0730	226	1.	57.8	1273.5
21	MAY	0052	27	0.	0.1	1264.0	*	21	MAY	0412	127	1.	39.3	1270.9	*	21	MAY	0732	227	1.	57.8	1273.5
21	MAY	0054	28	0.	0.1	1264.0	*	21	MAY	0414	128	1.	40.1	1271.0	*	21	MAY	0734	228	1.	57.8	1273.5
21	MAY	0056	29	0.	0.1	1264.0	*	21	MAY	0416	129	1.	40.9	1271.1	*	21	MAY	0736	229	1.	57.9	1273.5
21	MAY	0058	30	0.	0.2	1264.0	*	21	MAY	0418	130	1.	41.6	1271.2	*	21	MAY	0738	230	1.	57.9	1273.5
21	MAY	0100	31	0.	0.2	1264.0	*	21	MAY	0420	131	1.	42.4	1271.3	*	21	MAY	0740	231	1.	57.9	1273.5
21	MAY	0102	32	0.	0.2	1264.0	*	21	MAY	0422	132	1.	43.2	1271.4	*	21	MAY	0742	232	1.	57.9	1273.5
21	MAY	0104	33	0.	0.2	1264.0	*	21	MAY	0424	133	1.	44.0	1271.6	*	21	MAY	0744	233	1.	57.9	1273.5
21	MAY	0106	34	0.	0.2	1264.0	*	21	MAY	0426	134	1.	44.7	1271.7	*	21	MAY	0746	234	1.	57.9	1273.5
21	MAY	0108	35	0.	0.2	1264.0	*	21	MAY	0428	135	1.	45.5	1271.8	*	21	MAY	0748	235	1.	57.9	1273.5
21	MAY	0110	36	0.	0.2	1264.0	*	21	MAY	0430	136	1.	46.1	1271.9	*	21	MAY	0750	236	1.	57.9	1273.5
21	MAY	0112	37	0.	0.2	1264.1	*	21	MAY	0432	137	1.	46.8	1271.9	*	21	MAY	0752	237	1.	57.9	1273.5
21	MAY	0114	38	0.	0.3	1264.1	*	21	MAY	0434	138	1.	47.3	1272.0	*	21	MAY	0754	238	1.	57.9	1273.5
21	MAY	0116	39	0.	0.3	1264.1	*	21	MAY	0436	139	1.	47.9	1272.1	*	21	MAY	0756	239	1.	57.9	1273.5
21	MAY	0118	40	0.	0.3	1264.1	*	21	MAY	0438	140	1.	48.4	1272.2	*	21	MAY	0758	240	1.	57.9	1273.5
21	MAY	0120	41	0.	0.3	1264.1	*	21	MAY	0440	141	1.	48.9	1272.3	*	21	MAY	0800	241	1.	57.9	1273.5
21	MAY	0122	42	0.	0.3	1264.1	*	21	MAY	0442	142	1.	49.3	1272.3	*	21	MAY	0802	242	1.	57.9	1273.5
21	MAY	0124	43	0.	0.3	1264.1	*	21	MAY	0444	143	1.	49.7	1272.4	*	21	MAY	0804	243	1.	58.0	1273.5
21	MAY	0126	44	0.	0.3	1264.1	*	21	MAY	0446	144	1.	50.1	1272.4	*	21	MAY	0806	244	1.	58.0	1273.5
21	MAY	0128	45	0.	0.3	1264.1	*	21	MAY	0448	145	1.	50.5	1272.5	*	21	MAY	0808	245	1.	58.0	1273.5
21	MAY	0130	46	0.	0.4	1264.1	*	21	MAY	0450	146	1.	50.9	1272.5	*	21	MAY	0810	246	1.	58.0	1273.5

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

21	MAY	0132	47	0.	0.4	1264.1	*	21	MAY	0452	147	1.	51.2	1272.6	*	21	MAY	0812	247	1.	58.0	1273.5
21	MAY	0134	48	0.	0.4	1264.1	*	21	MAY	0454	148	1.	51.5	1272.6	*	21	MAY	0814	248	1.	58.0	1273.5
21	MAY	0136	49	0.	0.4	1264.1	*	21	MAY	0456	149	1.	51.8	1272.7	*	21	MAY	0816	249	1.	58.0	1273.5
21	MAY	0138	50	0.	0.4	1264.1	*	21	MAY	0458	150	1.	52.0	1272.7	*	21	MAY	0818	250	1.	58.0	1273.5
21	MAY	0140	51	0.	0.4	1264.1	*	21	MAY	0500	151	1.	52.3	1272.7	*	21	MAY	0820	251	1.	58.0	1273.5
21	MAY	0142	52	0.	0.4	1264.1	*	21	MAY	0502	152	1.	52.5	1272.8	*	21	MAY	0822	252	1.	58.0	1273.5
21	MAY	0144	53	0.	0.5	1264.1	*	21	MAY	0504	153	1.	52.7	1272.8	*	21	MAY	0824	253	1.	58.0	1273.5
21	MAY	0146	54	0.	0.5	1264.1	*	21	MAY	0506	154	1.	53.0	1272.8	*	21	MAY	0826	254	1.	58.0	1273.5
21	MAY	0148	55	0.	0.5	1264.1	*	21	MAY	0508	155	1.	53.2	1272.9	*	21	MAY	0828	255	1.	58.0	1273.5
21	MAY	0150	56	0.	0.5	1264.1	*	21	MAY	0510	156	1.	53.3	1272.9	*	21	MAY	0830	256	1.	58.0	1273.5
21	MAY	0152	57	0.	0.5	1264.1	*	21	MAY	0512	157	1.	53.5	1272.9	*	21	MAY	0832	257	1.	58.0	1273.5
21	MAY	0154	58	0.	0.6	1264.1	*	21	MAY	0514	158	1.	53.7	1272.9	*	21	MAY	0834	258	1.	58.0	1273.5
21	MAY	0156	59	0.	0.6	1264.1	*	21	MAY	0516	159	1.	53.8	1273.0	*	21	MAY	0836	259	1.	58.0	1273.5
21	MAY	0158	60	0.	0.6	1264.1	*	21	MAY	0518	160	1.	54.0	1273.0	*	21	MAY	0838	260	1.	58.0	1273.5
21	MAY	0200	61	0.	0.6	1264.1	*	21	MAY	0520	161	1.	54.1	1273.0	*	21	MAY	0840	261	1.	58.0	1273.5
21	MAY	0202	62	0.	0.6	1264.1	*	21	MAY	0522	162	1.	54.3	1273.0	*	21	MAY	0842	262	1.	58.0	1273.5
21	MAY	0204	63	0.	0.7	1264.1	*	21	MAY	0524	163	1.	54.4	1273.0	*	21	MAY	0844	263	1.	58.0	1273.5
21	MAY	0206	64	0.	0.7	1264.1	*	21	MAY	0526	164	1.	54.5	1273.1	*	21	MAY	0846	264	1.	58.0	1273.5
21	MAY	0208	65	0.	0.7	1264.2	*	21	MAY	0528	165	1.	54.7	1273.1	*	21	MAY	0848	265	1.	58.0	1273.5
21	MAY	0210	66	0.	0.8	1264.2	*	21	MAY	0530	166	1.	54.8	1273.1	*	21	MAY	0850	266	1.	58.0	1273.5
21	MAY	0212	67	0.	0.8	1264.2	*	21	MAY	0532	167	1.	54.9	1273.1	*	21	MAY	0852	267	1.	58.0	1273.5
21	MAY	0214	68	0.	0.8	1264.2	*	21	MAY	0534	168	1.	55.0	1273.1	*	21	MAY	0854	268	1.	58.0	1273.5
21	MAY	0216	69	0.	0.9	1264.2	*	21	MAY	0536	169	1.	55.1	1273.1	*	21	MAY	0856	269	1.	58.0	1273.5
21	MAY	0218	70	0.	0.9	1264.2	*	21	MAY	0538	170	1.	55.2	1273.1	*	21	MAY	0858	270	1.	58.0	1273.5
21	MAY	0220	71	0.	0.9	1264.2	*	21	MAY	0540	171	1.	55.3	1273.1	*	21	MAY	0900	271	1.	58.0	1273.5
21	MAY	0222	72	0.	1.0	1264.2	*	21	MAY	0542	172	1.	55.4	1273.2	*	21	MAY	0902	272	1.	58.0	1273.5
21	MAY	0224	73	0.	1.0	1264.2	*	21	MAY	0544	173	1.	55.5	1273.2	*	21	MAY	0904	273	1.	58.0	1273.5
21	MAY	0226	74	0.	1.1	1264.2	*	21	MAY	0546	174	1.	55.6	1273.2	*	21	MAY	0906	274	1.	58.0	1273.5
21	MAY	0228	75	0.	1.1	1264.2	*	21	MAY	0548	175	1.	55.7	1273.2	*	21	MAY	0908	275	1.	58.0	1273.5
21	MAY	0230	76	0.	1.2	1264.2	*	21	MAY	0550	176	1.	55.8	1273.2	*	21	MAY	0910	276	1.	58.0	1273.5
21	MAY	0232	77	0.	1.2	1264.3	*	21	MAY	0552	177	1.	55.9	1273.2	*	21	MAY	0912	277	1.	58.0	1273.5
21	MAY	0234	78	0.	1.2	1264.3	*	21	MAY	0554	178	1.	55.9	1273.2	*	21	MAY	0914	278	1.	58.0	1273.5
21	MAY	0236	79	0.	1.3	1264.3	*	21	MAY	0556	179	1.	56.0	1273.2	*	21	MAY	0916	279	1.	58.0	1273.5
21	MAY	0238	80	0.	1.4	1264.3	*	21	MAY	0558	180	1.	56.1	1273.3	*	21	MAY	0918	280	1.	58.0	1273.5
21	MAY	0240	81	0.	1.4	1264.3	*	21	MAY	0600	181	1.	56.2	1273.3	*	21	MAY	0920	281	1.	58.0	1273.5
21	MAY	0242	82	0.	1.5	1264.3	*	21	MAY	0602	182	1.	56.3	1273.3	*	21	MAY	0922	282	1.	58.0	1273.5
21	MAY	0244	83	0.	1.6	1264.3	*	21	MAY	0604	183	1.	56.3	1273.3	*	21	MAY	0924	283	1.	58.0	1273.5
21	MAY	0246	84	0.	1.7	1264.4	*	21	MAY	0606	184	1.	56.4	1273.3	*	21	MAY	0926	284	1.	58.0	1273.5
21	MAY	0248	85	0.	1.8	1264.4	*	21	MAY	0608	185	1.	56.5	1273.3	*	21	MAY	0928	285	1.	58.0	1273.5
21	MAY	0250	86	0.	1.9	1264.4	*	21	MAY	0610	186	1.	56.6	1273.3	*	21	MAY	0930	286	1.	58.0	1273.5
21	MAY	0252	87	0.	2.1	1264.4	*	21	MAY	0612	187	1.	56.6	1273.3	*	21	MAY	0932	287	1.	58.0	1273.5
21	MAY	0254	88	0.	2.3	1264.5	*	21	MAY	0614	188	1.	56.7	1273.3	*	21	MAY	0934	288	1.	58.0	1273.5
21	MAY	0256	89	0.	2.5	1264.5	*	21	MAY	0616	189	1.	56.8	1273.3	*	21	MAY	0936	289	1.	58.0	1273.5
21	MAY	0258	90	0.	2.9	1264.6	*	21	MAY	0618	190	1.	56.8	1273.3	*	21	MAY	0938	290	1.	58.0	1273.5
21	MAY	0300	91	0.	3.3	1264.7	*	21	MAY	0620	191	1.	56.9	1273.4	*	21	MAY	0940	291	1.	58.0	1273.5

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

21 MAY 0302	92	0.	3.9	1264.8	*	21 MAY 0622	192	1.	57.0	1273.4	*	21 MAY 0942	292	1.	58.0	1273.5
21 MAY 0304	93	0.	4.8	1265.0	*	21 MAY 0624	193	1.	57.0	1273.4	*	21 MAY 0944	293	1.	58.0	1273.5
21 MAY 0306	94	0.	6.2	1265.3	*	21 MAY 0626	194	1.	57.1	1273.4	*	21 MAY 0946	294	1.	58.0	1273.5
21 MAY 0308	95	0.	7.8	1265.6	*	21 MAY 0628	195	1.	57.1	1273.4	*	21 MAY 0948	295	1.	58.0	1273.5
21 MAY 0310	96	0.	9.5	1265.9	*	21 MAY 0630	196	1.	57.2	1273.4	*	21 MAY 0950	296	1.	58.0	1273.5
21 MAY 0312	97	0.	11.2	1266.2	*	21 MAY 0632	197	1.	57.2	1273.4	*	21 MAY 0952	297	1.	58.0	1273.5
21 MAY 0314	98	0.	12.8	1266.5	*	21 MAY 0634	198	1.	57.3	1273.4	*	21 MAY 0954	298	1.	58.0	1273.5
21 MAY 0316	99	0.	14.3	1266.8	*	21 MAY 0636	199	1.	57.3	1273.4	*	21 MAY 0956	299	1.	58.0	1273.5
21 MAY 0318	100	0.	15.7	1267.1	*	21 MAY 0638	200	1.	57.3	1273.4	*	21 MAY 0958	300	1.	58.0	1273.5
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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1.	9.97		1.	1.	1.	1.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	0.	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
58.	9.97	55.	35.	35.	35.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1273.50	9.97	1273.08	1269.88	1269.88	1269.88

CUMULATIVE AREA = 0.00 SQ MI

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00		
	ROUTED TO									

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

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+                    RETAIN        1.    9.97        1.        1.        1.     0.00
+                                                                                 1273.50        9.97
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*** NORMAL END OF HEC-1 ***

Condition No. 5
Proposed 100-yr Detention Basin
No Outflow from Detention Basin During Storm

Alternative Condition Number 6

68th Street, Arcadia Drain

Pipe	Upstream Node	Downstream Node	Section Size	Discharge (cfs)	Velocity (ft/s)	Upstream Ground Elevation (ft)	Upstream HGL (ft)	Upstream Invert Elevation (ft)	Downstream Ground Elevation (ft)	Downstream HGL (ft)	Downstream Invert Elevation (ft)
P-98	Paiute Outlet	PI 60+67	54 inch	44.00	2.77	1,257.00	1,259.54	1,245.32	1,257.50	1,259.52	1,245.10
P-99	PI 60+67	PI 61+29	54 inch	44.00	2.77	1,257.50	1,259.55	1,245.10	1,257.50	1,259.52	1,244.84
P-100	PI 61+29	MH 63+40	54 inch	44.00	2.77	1,257.50	1,259.61	1,244.84	1,257.80	1,259.52	1,243.92
P-101	MH 63+40	MH 66+80	54 inch	44.00	2.77	1,257.80	1,259.67	1,243.92	1,259.50	1,259.52	1,242.53
P-102	MH 66+80	I NAVAJO	54 inch	44.00	2.77	1,259.50	1,259.62	1,242.53	1,260.00	1,259.52	1,241.55
P-103	I NAVAJO	MH 71+80	60 inch	103.00	5.25	1,260.00	1,258.21	1,241.05	1,259.90	1,257.86	1,240.00
P-104	MH 71+80	I PINTO (72+43)	60 inch	137.00	6.98	1,259.90	1,257.82	1,240.00	1,259.70	1,257.68	1,239.77
P-105	I PINTO (72+43)	MH 81+60	60 inch	137.00	6.98	1,259.70	1,257.10	1,239.77	1,256.00	1,254.93	1,236.43
P-107	I 82+05	J 81+82	18 inch	6.00	3.40	1,255.93	1,254.98	1,251.60	1,256.10	1,254.89	1,238.48
P-106	MH 81+60	J 81+82	78 inch	137.00	4.13	1,256.00	1,254.91	1,234.93	1,256.10	1,254.89	1,234.83
P-165	Arcadia	I 68TH (82+63)	30 inch	30.00	6.11	1,274.00	1,269.27	1,264.20	1,256.00	1,254.79	1,234.35
P-108	J 81+82	I 68TH (82+63)	78 inch	143.00	4.31	1,256.10	1,254.84	1,234.83	1,256.00	1,254.79	1,234.45
P-109	I 68TH (82+63)	PI 86+80	78 inch	273.00	8.23	1,256.00	1,253.89	1,234.45	1,253.00	1,252.93	1,232.48
P-110	PI 86+80	PI 87+30	78 inch	273.00	8.23	1,253.00	1,252.48	1,232.48	1,253.00	1,252.36	1,232.25
P-112	I 88+87	J 88+87	18 inch	6.00	3.40	1,253.24	1,251.69	1,246.74	1,253.00	1,251.59	1,236.49
P-111	PI 87+30	J 88+87	78 inch	273.00	8.23	1,253.00	1,251.94	1,232.25	1,253.00	1,251.59	1,231.51
P-113	J 88+87	J 93+01 (SUPAI)	78 inch	279.00	8.41	1,253.00	1,251.51	1,231.51	1,252.00	1,250.50	1,229.58
P-114	I 93+01	J 93+01 (SUPAI)	12 inch	3.00	3.52	1,251.79	1,250.81	1,235.75	1,252.00	1,250.50	1,231.54
P-116	I 95+10	MH 95+10	18 inch	4.00	2.26	1,250.65	1,249.21	1,247.30	1,251.40	1,249.16	1,229.90
P-115	J 93+01 (SUPAI)	MH 95+10	78 inch	315.00	9.49	1,252.00	1,249.80	1,229.58	1,251.40	1,249.16	1,228.59
P-117	MH 95+10	I 95+72 (70th)	90 inch	319.00	7.22	1,251.40	1,249.16	1,227.64	1,251.35	1,249.07	1,227.55
P-119	I 101+70	MH 101+90	18 inch	6.00	3.40	1,247.51	1,247.24	1,243.18	1,247.53	1,247.13	1,232.47
P-118	I 95+72 (70th)	MH 101+90	90 inch	372.00	8.42	1,251.35	1,248.38	1,227.55	1,247.53	1,247.13	1,226.62
P-121	I 104+56	J-104+56	18 inch	8.00	4.53	1,247.37	1,245.41	1,241.04	1,246.96	1,245.36	1,232.68
P-120	MH 101+90	J-104+56	90 inch	378.00	8.56	1,247.53	1,245.90	1,226.62	1,246.96	1,245.36	1,226.23
P-122	J-104+56	J 106+36	90 inch	386.00	8.74	1,246.96	1,245.27	1,226.23	1,246.72	1,244.86	1,225.94
P-123	I 106+36	J 106+36	18 inch	5.00	2.83	1,246.64	1,244.88	1,240.31	1,246.72	1,244.86	1,232.68
P-124A	I 108+08	J 107+92	18 inch	5.00	2.83	1,245.71	1,244.44	1,241.38	1,245.96	1,244.42	1,232.25
P-124	J 106+36	J 107+92	90 inch	391.00	8.85	1,246.72	1,244.75	1,225.94	1,245.96	1,244.42	1,225.72
P-125	J 107+92	J 110+50	90 inch	396.00	8.96	1,245.96	1,244.36	1,225.72	1,244.80	1,243.79	1,225.27
P-126	J 110+50	I 115+32	90 inch	396.00	8.96	1,244.80	1,243.73	1,225.32	1,242.63	1,242.63	1,224.60
P-128	I 118+50	J 118+50	18 inch	5.00	2.83	1,241.11	1,240.49	1,234.78	1,241.81	1,240.42	1,229.96
P-127	I 115+32	J 118+50	90 inch	422.00	9.55	1,242.63	1,241.24	1,224.60	1,241.81	1,240.42	1,224.13
P-129	J 118+50	J 121+40	90 inch	436.00	9.87	1,241.81	1,240.18	1,224.13	1,241.02	1,239.24	1,223.69
P-130	I 121+35	J 121+40	18 inch	3.00	1.70	1,241.15	1,239.27	1,234.82	1,241.02	1,239.24	1,229.52
P-131	J 121+40	J 123+00	10 x 4 ft	441.00	11.03	1,241.02	1,239.04	1,223.69	1,240.37	1,238.26	1,223.53
P-131A	J 123+00	I 128+79	90 inch	441.00	9.98	1,240.37	1,238.04	1,223.43	1,238.69	1,236.41	1,222.85

68th Street, Arcadia Drain

Pipe	Upstream Node	Downstream Node	Section Size	Discharge (cfs)	Velocity (ft/s)	Upstream Ground Elevation (ft)	Upstream HGL (ft)	Upstream Invert Elevation (ft)	Downstream Ground Elevation (ft)	Downstream HGL (ft)	Downstream Invert Elevation (ft)
P-132	I 128+79	MH 133+00	90 inch	441.00	9.98	1,238.69	1,236.21	1,222.85	1,237.38	1,235.03	1,222.43
P-134	MH 133+00	I 134+56 (CIVIC)	90 inch	441.00	9.98	1,237.38	1,234.95	1,222.43	1,236.00	1,234.51	1,222.27
P-135	I 134+56 (CIVIC)	MH 135+54	90 inch	477.00	10.80	1,236.00	1,234.14	1,222.27	1,235.65	1,233.82	1,222.17
P-136A	I 141+10	J 141+10	24 inch	18.00	5.73	1,233.25	1,232.66	1,229.92	1,233.34	1,232.32	1,224.14
P-136	MH 135+54	J 141+10	96 inch	477.00	9.49	1,235.65	1,233.62	1,222.17	1,233.34	1,232.32	1,221.64
P-138A	I 144+00	24" CV1	24 inch	4.00	1.27	1,232.40	1,232.30	1,228.90	1,232.40	1,232.29	1,224.82
P-136B	J 141+10	J 141+56	96 inch	495.00	9.85	1,233.34	1,232.19	1,221.64	1,233.12	1,232.08	1,221.59
P-137	I 141+56 (75th)	J 141+56	36 inch	34.00	4.81	1,233.35	1,232.24	1,225.26	1,233.12	1,232.08	1,222.34
P-138D	I 146+32	24" CV2	24 inch	6.00	1.91	1,231.61	1,231.76	1,227.11	1,232.11	1,231.73	1,224.00
P-138B	24" CV1	J 144+00	24 inch	4.00	1.27	1,232.40	1,231.04	1,224.82	1,232.40	1,231.04	1,223.47
P-138	J 141+56	J 144+00	10 x 6 ft	529.00	8.82	1,233.12	1,231.58	1,221.59	1,232.40	1,231.04	1,221.36
P-138G	I 147+77	24" CV3	24 inch	5.00	1.59	1,231.31	1,231.31	1,223.87	1,231.31	1,231.29	1,222.26
P-138E	24" CV2	J 146+32	24 inch	6.00	1.91	1,232.11	1,230.48	1,224.00	1,231.60	1,230.48	1,223.10
P-138C	J 144+00	J 146+32	10 x 6 ft	533.00	8.88	1,232.40	1,230.99	1,221.36	1,231.60	1,230.48	1,221.10
P-138H	24" CV3	MH 147+95	24 inch	5.00	1.59	1,231.31	1,230.04	1,222.26	1,231.33	1,230.04	1,222.21
P-138F	J 146+32	MH 147+95	10 x 6 ft	539.00	8.98	1,231.60	1,230.43	1,221.10	1,231.33	1,230.04	1,220.94
P-139	MH 147+95	I 148+49 (MILLER)	10 x 6 ft	544.00	9.07	1,231.33	1,229.97	1,220.96	1,231.34	1,229.80	1,220.82
P-140	I 148+49 (MILLER)	PI 148+67	10 x 6 ft	589.00	9.82	1,231.34	1,229.06	1,220.82	1,231.00	1,229.02	1,220.79
P-141	PI 148+67	PI 149+36	10 x 6 ft	589.00	9.82	1,231.00	1,228.42	1,220.79	1,231.00	1,228.23	1,220.65
P-142	PI 149+36	IBW	10 x 6 ft	589.00	9.82	1,231.00	1,227.60	1,220.65	1,228.00	1,224.00	1,218.00

68th Street, Arcadia Drain

Pipe	Upstream Node	Downstream Node	Section Size	Discharge (cfs)	Velocity (ft/s)	Upstream Ground Elevation (ft)	Upstream HGL (ft)	Upstream Invert Elevation (ft)	Downstream Ground Elevation (ft)	Downstream HGL (ft)	Downstream Invert Elevation (ft)
P-98	Paiute Outlet	PI 60+67	54 inch	44.00	2.77	1,257.00	1,259.65	1,245.32	1,257.50	1,259.63	1,245.10
P-99	PI 60+67	PI 61+29	54 inch	44.00	2.77	1,257.50	1,259.65	1,245.10	1,257.50	1,259.63	1,244.84
P-100	PI 61+29	MH 63+40	54 inch	44.00	2.77	1,257.50	1,259.72	1,244.84	1,257.80	1,259.63	1,243.92
P-101	MH 63+40	MH 66+80	54 inch	44.00	2.77	1,257.80	1,259.77	1,243.92	1,259.50	1,259.63	1,242.53
P-102	MH 66+80	I NAVAJO	54 inch	44.00	2.77	1,259.50	1,259.73	1,242.53	1,260.00	1,259.63	1,241.55
P-103	I NAVAJO	MH 71+80	60 inch	103.00	5.25	1,260.00	1,258.32	1,241.05	1,259.90	1,257.97	1,240.00
P-104	MH 71+80	I PINTO (72+43)	60 inch	137.00	6.98	1,259.90	1,257.93	1,240.00	1,259.70	1,257.78	1,239.77
P-105	I PINTO (72+43)	MH 81+60	60 inch	137.00	6.98	1,259.70	1,257.20	1,239.77	1,256.00	1,255.04	1,236.43
P-107	I 82+05	J 81+82	18 inch	6.00	3.40	1,255.93	1,255.09	1,251.60	1,256.10	1,255.00	1,238.48
P-106	MH 81+60	J 81+82	78 inch	137.00	4.13	1,256.00	1,255.01	1,234.93	1,256.10	1,255.00	1,234.83
P-165	Arcadia	I 68TH (82+63)	30 inch	35.00	7.13	1,274.00	1,274.60	1,264.20	1,256.00	1,254.90	1,234.35
P-108	J 81+82	I 68TH (82+63)	78 inch	143.00	4.31	1,256.10	1,254.95	1,234.83	1,256.00	1,254.90	1,234.45
P-109	I 68TH (82+63)	PI 86+80	78 inch	278.00	8.38	1,256.00	1,254.00	1,234.45	1,253.00	1,253.00	1,232.48
P-110	PI 86+80	PI 87+30	78 inch	278.00	8.38	1,253.00	1,252.68	1,232.48	1,253.00	1,252.56	1,232.25
P-112	I 88+87	J 88+87	18 inch	6.00	3.40	1,253.24	1,251.86	1,246.74	1,253.00	1,251.76	1,236.49
P-111	PI 87+30	J 88+87	78 inch	278.00	8.38	1,253.00	1,252.13	1,232.25	1,253.00	1,251.76	1,231.51
P-113	J 88+87	J 93+01 (SUPAI)	78 inch	284.00	8.56	1,253.00	1,251.68	1,231.51	1,252.00	1,250.64	1,229.58
P-114	I 93+01	J 93+01 (SUPAI)	12 inch	3.00	3.52	1,251.79	1,250.95	1,235.75	1,252.00	1,250.64	1,231.54
P-116	I 95+10	MH 95+10	18 inch	4.00	2.26	1,250.65	1,249.32	1,247.30	1,251.40	1,249.28	1,229.90
P-115	J 93+01 (SUPAI)	MH 95+10	78 inch	320.00	9.64	1,252.00	1,249.94	1,229.58	1,251.40	1,249.28	1,228.59
P-117	MH 95+10	I 95+72 (70th)	90 inch	324.00	7.33	1,251.40	1,249.28	1,227.64	1,251.35	1,249.18	1,227.55
P-119	I 101+70	MH 101+90	18 inch	6.00	3.40	1,247.51	1,247.32	1,243.18	1,247.53	1,247.21	1,232.47
P-118	I 95+72 (70th)	MH 101+90	90 inch	377.00	8.53	1,251.35	1,248.49	1,227.55	1,247.53	1,247.21	1,226.62
P-121	I 104+56	J-104+56	18 inch	8.00	4.53	1,247.37	1,245.47	1,241.04	1,246.96	1,245.42	1,232.68
P-120	MH 101+90	J-104+56	90 inch	383.00	8.67	1,247.53	1,245.98	1,226.62	1,246.96	1,245.42	1,226.23
P-122	J-104+56	J 106+36	90 inch	391.00	8.85	1,246.96	1,245.33	1,226.23	1,246.72	1,244.91	1,225.94
P-123	I 106+36	J 106+36	18 inch	5.00	2.83	1,246.64	1,244.93	1,240.31	1,246.72	1,244.91	1,232.68
P-124A	I 108+08	J 107+92	18 inch	5.00	2.83	1,245.71	1,244.49	1,241.38	1,245.96	1,244.46	1,232.25
P-124	J 106+36	J 107+92	90 inch	396.00	8.96	1,246.72	1,244.80	1,225.94	1,245.96	1,244.46	1,225.72
P-125	J 107+92	J 110+50	90 inch	401.00	9.08	1,245.96	1,244.40	1,225.72	1,244.80	1,243.82	1,225.27
P-126	J 110+50	I 115+32	90 inch	401.00	9.08	1,244.80	1,243.75	1,225.32	1,242.63	1,242.63	1,224.60
P-128	I 118+50	J 118+50	18 inch	5.00	2.83	1,241.11	1,240.73	1,234.78	1,241.81	1,240.66	1,229.96
P-127	I 115+32	J 118+50	90 inch	427.00	9.67	1,242.63	1,241.50	1,224.60	1,241.81	1,240.66	1,224.13
P-129	J 118+50	J 121+40	90 inch	441.00	9.98	1,241.81	1,240.42	1,224.13	1,241.02	1,239.46	1,223.69
P-130	I 121+35	J 121+40	18 inch	3.00	1.70	1,241.15	1,239.49	1,234.82	1,241.02	1,239.46	1,229.52
P-131	J 121+40	J 123+00	10 x 4 ft	446.00	11.15	1,241.02	1,239.26	1,223.69	1,240.37	1,238.47	1,223.53
P-131A	J 123+00	I 128+79	90 inch	446.00	10.10	1,240.37	1,238.25	1,223.43	1,238.69	1,236.57	1,222.85

68th Street, Arcadia Drain

Pipe	Upstream Node	Downstream Node	Section Size	Discharge (cfs)	Velocity (ft/s)	Upstream Ground Elevation (ft)	Upstream HGL (ft)	Upstream Invert Elevation (ft)	Downstream Ground Elevation (ft)	Downstream HGL (ft)	Downstream Invert Elevation (ft)
P-132	I 128+79	MH 133+00	90 inch	446.00	10.10	1,238.69	1,236.37	1,222.85	1,237.38	1,235.17	1,222.43
P-134	MH 133+00	I 134+56 (CIVIC)	90 inch	446.00	10.10	1,237.38	1,235.09	1,222.43	1,236.00	1,234.64	1,222.27
P-135	I 134+56 (CIVIC)	MH 135+54	90 inch	482.00	10.91	1,236.00	1,234.27	1,222.27	1,235.65	1,233.94	1,222.17
P-136A	I 141+10	J 141+10	24 inch	18.00	5.73	1,233.25	1,232.75	1,229.92	1,233.34	1,232.42	1,224.14
P-136	MH 135+54	J 141+10	96 inch	482.00	9.59	1,235.65	1,233.74	1,222.17	1,233.34	1,232.42	1,221.64
P-138A	I 144+00	24" CV1	24 inch	4.00	1.27	1,232.40	1,232.39	1,228.90	1,232.40	1,232.38	1,224.82
P-136B	J 141+10	J 141+56	96 inch	500.00	9.95	1,233.34	1,232.29	1,221.64	1,233.12	1,232.17	1,221.59
P-137	I 141+56 (75th)	J 141+56	36 inch	34.00	4.81	1,233.35	1,232.33	1,225.26	1,233.12	1,232.17	1,222.34
P-138D	I 146+32	24" CV2	24 inch	6.00	1.91	1,231.61	1,231.83	1,227.11	1,232.11	1,231.80	1,224.00
P-138B	24" CV1	J 144+00	24 inch	4.00	1.27	1,232.40	1,231.13	1,224.82	1,232.40	1,231.12	1,223.47
P-138	J 141+56	J 144+00	10 x 6 ft	534.00	8.90	1,233.12	1,231.67	1,221.59	1,232.40	1,231.12	1,221.36
P-138G	I 147+77	24" CV3	24 inch	5.00	1.59	1,231.31	1,231.33	1,223.87	1,231.31	1,231.31	1,222.26
P-138E	24" CV2	J 146+32	24 inch	6.00	1.91	1,232.11	1,230.55	1,224.00	1,231.60	1,230.55	1,223.10
P-138C	J 144+00	J 146+32	10 x 6 ft	538.00	8.97	1,232.40	1,231.07	1,221.36	1,231.60	1,230.55	1,221.10
P-138H	24" CV3	MH 147+95	24 inch	5.00	1.59	1,231.31	1,230.11	1,222.26	1,231.33	1,230.10	1,222.21
P-138F	J 146+32	MH 147+95	10 x 6 ft	544.00	9.07	1,231.60	1,230.50	1,221.10	1,231.33	1,230.10	1,220.94
P-139	MH 147+95	I 148+49 (MILLER)	10 x 6 ft	549.00	9.15	1,231.33	1,230.04	1,220.96	1,231.34	1,229.86	1,220.82
P-140	I 148+49 (MILLER)	PI 148+67	10 x 6 ft	593.00	9.88	1,231.34	1,229.12	1,220.82	1,231.00	1,229.08	1,220.79
P-141	PI 148+67	PI 149+36	10 x 6 ft	593.00	9.88	1,231.00	1,228.47	1,220.79	1,231.00	1,228.28	1,220.65
P-142	PI 149+36	IBW	10 x 6 ft	593.00	9.88	1,231.00	1,227.65	1,220.65	1,228.00	1,224.00	1,218.00

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 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  14:19:02  *
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
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X     X  X        X     X        XX
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XXXXXXX  XXXX     X        XXXXX  X
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X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

1 HEC-1 INPUT PAGE 1

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

  1           ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
  2           ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
  3           ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
  4           ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
  5           ID
  6           ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
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Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

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 7          ID          ALTERNATIVE CONDITION NO. 6- EXISTING DETENTION BASIN,
 8          ID                                       EXISTING OUTFALL AND 30" OSBORN CONNECTO
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: EXTEXT2.DAT
13          ID
14          IT       2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI       0       0       0       0       0       0       0       0       0       0
18          QI       0       1       1       1       1       2       2       3       3       4
19          QI       4       4       4       4       4       4       4       4       4       4
20          QI       4       4       4       4       5       5       5       5       5       5
21          QI       5       5       5       5       5       5       5       5       5       5
22          QI       5       6       6       6       6       7       7       7       8       8
23          QI       9       9      10      10      11      12      12      13      13      14
24          QI      14      15      15      16      16      17      17      18      19      21
25          QI      24      27      32      38      46      56      68      82     101     128
26          QI     176     265     411     558     635     634     597     554     522     503
27          QI     491     477     455     426     396     367     342     319     299     280
28          QI     263     254     249     248     253     260     264     269     273     276
29          QI     280     285     290     292     291     290     283     276     278     287
30          QI     297     286     275     263     250     237     222     207     193     180
31          QI     168     158     148     139     130     122     115     107     101      95
32          QI      89      84      79      75      70      66      63      60      57      54
33          QI      52      50      48      46      44      43      41      40      39      38
34          QI      37      36      35      34      34      33      32      32      31      30
35          QI      30      29      29      28      28      27      26      26      25      24
36          QI      23      21      20      19      18      17      16      15      14      13
37          QI      13      12      11      11      10      10       9       9       9       8
38          QI       8       8       7       7       7       7       6       6       6       6
39          QI       5       5       5       5       5       5       4       4       4       4
40          QI       4       4       4       4       3       3       3       3       3       3
41          QI       3       3       3       3       3       2       2       2       2       2
42          QI       2       2       2       2       2       2       2       2       2       2
43          QI       2       2       2       2       2       2       1       1       1       1
44          QI       1       1       1       1       1       1       1       1       1       1
45          QI       1       1       1       1       1       1       1       1       1       1
46          QI       1       1       1       1       1       1       1       1       1       1

47          KK  RETAIN
48          KM   EXISTING RETENTION BASIN NORTH OF ARIZONA CANAL
```

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

```
          49          KM   ASSUME VERTICAL STORAGE ABOVE ELEVATION 1274.0
          50          KM   ASSUME FIXED OUTFLOW ABOVE ELEVATION 1274.0
          51          KM   ASSUME UNRESTRICTED OUTFLOW FROM EXISTING OUTLET PLUS 35 CFS TO OSBORN
          52          RS       1    STOR       0
          53          SA    0.13    0.18    0.21    0.25    0.29    0.32    0.36    0.40    1.38    1.38
1                                                HEC-1 INPUT                                                PAGE  2

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

          54          SE    1265    1266    1267    1268    1269    1270    1271    1272    1274    1300
                      * SQ     0      40      80     120     160     200     240     320     343       3
          55          SQ       0      75     115     155     195     235     275     355     378     378
          56          SE    1265 1267.08 1267.61 1268.53 1269.37 1270.20 1271.09 1273.25  1274.0    1300
          57          ZZ
1*****************************************                                  *****************************************
 *                                       *                                  *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                  *    U.S. ARMY CORPS OF ENGINEERS       *
 *              MAY   1991               *                                  *    HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.0.1E             *                                  *          609 SECOND STREET            *
 *     Lahey F77L-EM/32 version 5.01     *                                  *       DAVIS, CALIFORNIA 95616         *
 *       Dodson & Associates, Inc.       *                                  *           (916) 551-1748              *
 *  RUN DATE  04/06/00  TIME  14:19:02   *                                  *                                       *
 *****************************************                                  *****************************************
```

COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 6- EXISTING DETENTION BASIN,
EXISTING OUTFALL AND 30" OSBORN CONNECTO

ALAN HUMPHREY
9/99

FILE: EXTEXT2.DAT

```
     IT          HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
```

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

```
IDATE      21MAY97  STARTING DATE
ITIME         0000  STARTING TIME
  NQ           300  NUMBER OF HYDROGRAPH ORDINATES
NDDATE     21MAY97  ENDING DATE
NDTIME        0958  ENDING TIME
ICENT           19  CENTURY MARK

COMPUTATION INTERVAL    0.03 HOURS
     TOTAL TIME BASE    9.97 HOURS

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

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

          **************
          *            *
 15 KK    *     FLOOD  *
          *            *
          **************
                    68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

             SUBBASIN RUNOFF DATA

  0 BA          SUBBASIN CHARACTERISTICS
                     TAREA        0.00  SUBBASIN AREA

                                                    ***

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

                                        HYDROGRAPH AT STATION    FLOOD

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

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
					*						*						*					
21	MAY	0000	1	0.	*	21	MAY	0230	76	17.	*	21	MAY	0500	151	89.	*	21	MAY	0730	226	5.
21	MAY	0002	2	0.	*	21	MAY	0232	77	17.	*	21	MAY	0502	152	84.	*	21	MAY	0732	227	4.
21	MAY	0004	3	0.	*	21	MAY	0234	78	18.	*	21	MAY	0504	153	79.	*	21	MAY	0734	228	4.
21	MAY	0006	4	0.	*	21	MAY	0236	79	19.	*	21	MAY	0506	154	75.	*	21	MAY	0736	229	4.
21	MAY	0008	5	0.	*	21	MAY	0238	80	21.	*	21	MAY	0508	155	70.	*	21	MAY	0738	230	4.
21	MAY	0010	6	0.	*	21	MAY	0240	81	24.	*	21	MAY	0510	156	66.	*	21	MAY	0740	231	4.
21	MAY	0012	7	0.	*	21	MAY	0242	82	27.	*	21	MAY	0512	157	63.	*	21	MAY	0742	232	4.
21	MAY	0014	8	0.	*	21	MAY	0244	83	32.	*	21	MAY	0514	158	60.	*	21	MAY	0744	233	4.
21	MAY	0016	9	0.	*	21	MAY	0246	84	38.	*	21	MAY	0516	159	57.	*	21	MAY	0746	234	4.
21	MAY	0018	10	0.	*	21	MAY	0248	85	46.	*	21	MAY	0518	160	54.	*	21	MAY	0748	235	3.
21	MAY	0020	11	0.	*	21	MAY	0250	86	56.	*	21	MAY	0520	161	52.	*	21	MAY	0750	236	3.
21	MAY	0022	12	1.	*	21	MAY	0252	87	68.	*	21	MAY	0522	162	50.	*	21	MAY	0752	237	3.
21	MAY	0024	13	1.	*	21	MAY	0254	88	82.	*	21	MAY	0524	163	48.	*	21	MAY	0754	238	3.
21	MAY	0026	14	1.	*	21	MAY	0256	89	101.	*	21	MAY	0526	164	46.	*	21	MAY	0756	239	3.
21	MAY	0028	15	1.	*	21	MAY	0258	90	128.	*	21	MAY	0528	165	44.	*	21	MAY	0758	240	3.
21	MAY	0030	16	2.	*	21	MAY	0300	91	176.	*	21	MAY	0530	166	43.	*	21	MAY	0800	241	3.
21	MAY	0032	17	2.	*	21	MAY	0302	92	265.	*	21	MAY	0532	167	41.	*	21	MAY	0802	242	3.
21	MAY	0034	18	3.	*	21	MAY	0304	93	411.	*	21	MAY	0534	168	40.	*	21	MAY	0804	243	3.
21	MAY	0036	19	3.	*	21	MAY	0306	94	558.	*	21	MAY	0536	169	39.	*	21	MAY	0806	244	3.
21	MAY	0038	20	4.	*	21	MAY	0308	95	635.	*	21	MAY	0538	170	38.	*	21	MAY	0808	245	3.
21	MAY	0040	21	4.	*	21	MAY	0310	96	634.	*	21	MAY	0540	171	37.	*	21	MAY	0810	246	2.
21	MAY	0042	22	4.	*	21	MAY	0312	97	597.	*	21	MAY	0542	172	36.	*	21	MAY	0812	247	2.
21	MAY	0044	23	4.	*	21	MAY	0314	98	554.	*	21	MAY	0544	173	35.	*	21	MAY	0814	248	2.
21	MAY	0046	24	4.	*	21	MAY	0316	99	522.	*	21	MAY	0546	174	34.	*	21	MAY	0816	249	2.
21	MAY	0048	25	4.	*	21	MAY	0318	100	503.	*	21	MAY	0548	175	34.	*	21	MAY	0818	250	2.
21	MAY	0050	26	4.	*	21	MAY	0320	101	491.	*	21	MAY	0550	176	33.	*	21	MAY	0820	251	2.
21	MAY	0052	27	4.	*	21	MAY	0322	102	477.	*	21	MAY	0552	177	32.	*	21	MAY	0822	252	2.
21	MAY	0054	28	4.	*	21	MAY	0324	103	455.	*	21	MAY	0554	178	32.	*	21	MAY	0824	253	2.
21	MAY	0056	29	4.	*	21	MAY	0326	104	426.	*	21	MAY	0556	179	31.	*	21	MAY	0826	254	2.
21	MAY	0058	30	4.	*	21	MAY	0328	105	396.	*	21	MAY	0558	180	30.	*	21	MAY	0828	255	2.
21	MAY	0100	31	4.	*	21	MAY	0330	106	367.	*	21	MAY	0600	181	30.	*	21	MAY	0830	256	2.
21	MAY	0102	32	4.	*	21	MAY	0332	107	342.	*	21	MAY	0602	182	29.	*	21	MAY	0832	257	2.
21	MAY	0104	33	4.	*	21	MAY	0334	108	319.	*	21	MAY	0604	183	29.	*	21	MAY	0834	258	2.
21	MAY	0106	34	4.	*	21	MAY	0336	109	299.	*	21	MAY	0606	184	28.	*	21	MAY	0836	259	2.
21	MAY	0108	35	5.	*	21	MAY	0338	110	280.	*	21	MAY	0608	185	28.	*	21	MAY	0838	260	2.
21	MAY	0110	36	5.	*	21	MAY	0340	111	263.	*	21	MAY	0610	186	27.	*	21	MAY	0840	261	2.
21	MAY	0112	37	5.	*	21	MAY	0342	112	254.	*	21	MAY	0612	187	26.	*	21	MAY	0842	262	2.
21	MAY	0114	38	5.	*	21	MAY	0344	113	249.	*	21	MAY	0614	188	26.	*	21	MAY	0844	263	2.
21	MAY	0116	39	5.	*	21	MAY	0346	114	248.	*	21	MAY	0616	189	25.	*	21	MAY	0846	264	2.
21	MAY	0118	40	5.	*	21	MAY	0348	115	253.	*	21	MAY	0618	190	24.	*	21	MAY	0848	265	2.
21	MAY	0120	41	5.	*	21	MAY	0350	116	260.	*	21	MAY	0620	191	23.	*	21	MAY	0850	266	2.
21	MAY	0122	42	5.	*	21	MAY	0352	117	264.	*	21	MAY	0622	192	21.	*	21	MAY	0852	267	1.

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.
21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
			*				*				*			

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 635.	3.13		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

CUMULATIVE AREA = 0.00 SQ MI

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          **************
          *            *
 47 KK    *    RETAIN  *
          *            *
          **************
                         EXISTING RETENTION BASIN NORTH OF ARIZONA CANAL
                         ASSUME VERTICAL STORAGE ABOVE ELEVATION 1274.0
                         ASSUME FIXED OUTFLOW ABOVE ELEVATION 1274.0
                         ASSUME UNRESTRICTED OUTFLOW FROM EXISTING OUTLET PLUS 35 CFS TO OSBORN

            HYDROGRAPH ROUTING DATA

 52 RS        STORAGE ROUTING
                   NSTPS          1  NUMBER OF SUBREACHES
                    ITYP       STOR  TYPE OF INITIAL CONDITION
                  RSVRIC       0.00  INITIAL CONDITION
                       X       0.00 WORKING R AND D COEFFICIENT

 53 SA            AREA        0.1      0.2      0.2      0.3      0.3      0.3      0.4      0.4      1.4      1.4

 54 SE        ELEVATION    1265.00  1266.00  1267.00  1268.00  1269.00  1270.00  1271.00  1272.00  1274.00  1300.00

 55 SQ        DISCHARGE        0.       75.     115.     155.     195.     235.     275.     355.     378.     378.

 56 SE        ELEVATION    1265.00  1267.08  1267.61  1268.53  1269.37  1270.20  1271.09  1273.25  1274.00  1300.00
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COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	0.15	0.35	0.58	0.85	1.15	1.49	1.87	3.56	39.44
ELEVATION	1265.00	1266.00	1267.00	1268.00	1269.00	1270.00	1271.00	1272.00	1274.00	1300.00

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.15	0.35	0.37	0.48	0.58	0.72	0.85	0.96	1.15
OUTFLOW	0.00	36.06	72.12	75.00	115.00	131.96	155.00	177.38	195.00	225.36
ELEVATION	1265.00	1266.00	1267.00	1267.08	1267.61	1268.00	1268.53	1269.00	1269.37	1270.00

STORAGE	1.22	1.49	1.53	1.87	2.69	3.56	39.44
OUTFLOW	235.00	270.96	275.00	308.70	355.00	378.00	378.00
ELEVATION	1270.20	1271.00	1271.09	1272.00	1273.25	1274.00	1300.00

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HYDROGRAPH AT STATION RETAIN

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
21	MAY	0000	1	0.	0.0	1265.0	*	21	MAY	0320	101	378.	5.6	1275.5	*	21	MAY	0640	201	14.	0.1	1265.4
21	MAY	0002	2	0.	0.0	1265.0	*	21	MAY	0322	102	378.	5.9	1275.7	*	21	MAY	0642	202	13.	0.1	1265.4
21	MAY	0004	3	0.	0.0	1265.0	*	21	MAY	0324	103	378.	6.2	1275.9	*	21	MAY	0644	203	12.	0.1	1265.3
21	MAY	0006	4	0.	0.0	1265.0	*	21	MAY	0326	104	378.	6.3	1276.0	*	21	MAY	0646	204	12.	0.1	1265.3
21	MAY	0008	5	0.	0.0	1265.0	*	21	MAY	0328	105	378.	6.4	1276.1	*	21	MAY	0648	205	11.	0.0	1265.3
21	MAY	0010	6	0.	0.0	1265.0	*	21	MAY	0330	106	378.	6.4	1276.1	*	21	MAY	0650	206	11.	0.0	1265.3
21	MAY	0012	7	0.	0.0	1265.0	*	21	MAY	0332	107	378.	6.4	1276.0	*	21	MAY	0652	207	10.	0.0	1265.3
21	MAY	0014	8	0.	0.0	1265.0	*	21	MAY	0334	108	378.	6.2	1275.9	*	21	MAY	0654	208	10.	0.0	1265.3
21	MAY	0016	9	0.	0.0	1265.0	*	21	MAY	0336	109	378.	6.1	1275.8	*	21	MAY	0656	209	9.	0.0	1265.3
21	MAY	0018	10	0.	0.0	1265.0	*	21	MAY	0338	110	378.	5.8	1275.6	*	21	MAY	0658	210	9.	0.0	1265.2
21	MAY	0020	11	0.	0.0	1265.0	*	21	MAY	0340	111	378.	5.5	1275.4	*	21	MAY	0700	211	8.	0.0	1265.2
21	MAY	0022	12	0.	0.0	1265.0	*	21	MAY	0342	112	378.	5.2	1275.2	*	21	MAY	0702	212	8.	0.0	1265.2
21	MAY	0024	13	1.	0.0	1265.0	*	21	MAY	0344	113	378.	4.8	1274.9	*	21	MAY	0704	213	8.	0.0	1265.2
21	MAY	0026	14	1.	0.0	1265.0	*	21	MAY	0346	114	378.	4.5	1274.7	*	21	MAY	0706	214	7.	0.0	1265.2
21	MAY	0028	15	1.	0.0	1265.0	*	21	MAY	0348	115	378.	4.1	1274.4	*	21	MAY	0708	215	7.	0.0	1265.2
21	MAY	0030	16	1.	0.0	1265.0	*	21	MAY	0350	116	378.	3.8	1274.2	*	21	MAY	0710	216	7.	0.0	1265.2
21	MAY	0032	17	2.	0.0	1265.0	*	21	MAY	0352	117	376.	3.5	1273.9	*	21	MAY	0712	217	7.	0.0	1265.2
21	MAY	0034	18	2.	0.0	1265.1	*	21	MAY	0354	118	368.	3.2	1273.7	*	21	MAY	0714	218	6.	0.0	1265.2
21	MAY	0036	19	3.	0.0	1265.1	*	21	MAY	0356	119	361.	2.9	1273.5	*	21	MAY	0716	219	6.	0.0	1265.2
21	MAY	0038	20	3.	0.0	1265.1	*	21	MAY	0358	120	355.	2.7	1273.3	*	21	MAY	0718	220	6.	0.0	1265.2
21	MAY	0040	21	3.	0.0	1265.1	*	21	MAY	0400	121	344.	2.5	1273.0	*	21	MAY	0720	221	6.	0.0	1265.2
21	MAY	0042	22	4.	0.0	1265.1	*	21	MAY	0402	122	335.	2.3	1272.7	*	21	MAY	0722	222	5.	0.0	1265.2
21	MAY	0044	23	4.	0.0	1265.1	*	21	MAY	0404	123	328.	2.2	1272.5	*	21	MAY	0724	223	5.	0.0	1265.1
21	MAY	0046	24	4.	0.0	1265.1	*	21	MAY	0406	124	323.	2.1	1272.4	*	21	MAY	0726	224	5.	0.0	1265.1

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

21	MAY	0048	25	4.	0.0	1265.1	*	21	MAY	0408	125	318.	2.0	1272.3	*	21	MAY	0728	225	5.	0.0	1265.1
21	MAY	0050	26	4.	0.0	1265.1	*	21	MAY	0410	126	314.	2.0	1272.2	*	21	MAY	0730	226	5.	0.0	1265.1
21	MAY	0052	27	4.	0.0	1265.1	*	21	MAY	0412	127	310.	1.9	1272.0	*	21	MAY	0732	227	5.	0.0	1265.1
21	MAY	0054	28	4.	0.0	1265.1	*	21	MAY	0414	128	304.	1.8	1271.9	*	21	MAY	0734	228	4.	0.0	1265.1
21	MAY	0056	29	4.	0.0	1265.1	*	21	MAY	0416	129	298.	1.8	1271.7	*	21	MAY	0736	229	4.	0.0	1265.1
21	MAY	0058	30	4.	0.0	1265.1	*	21	MAY	0418	130	294.	1.7	1271.6	*	21	MAY	0738	230	4.	0.0	1265.1
21	MAY	0100	31	4.	0.0	1265.1	*	21	MAY	0420	131	294.	1.7	1271.6	*	21	MAY	0740	231	4.	0.0	1265.1
21	MAY	0102	32	4.	0.0	1265.1	*	21	MAY	0422	132	293.	1.7	1271.6	*	21	MAY	0742	232	4.	0.0	1265.1
21	MAY	0104	33	4.	0.0	1265.1	*	21	MAY	0424	133	290.	1.7	1271.5	*	21	MAY	0744	233	4.	0.0	1265.1
21	MAY	0106	34	4.	0.0	1265.1	*	21	MAY	0426	134	285.	1.6	1271.4	*	21	MAY	0746	234	4.	0.0	1265.1
21	MAY	0108	35	4.	0.0	1265.1	*	21	MAY	0428	135	278.	1.6	1271.2	*	21	MAY	0748	235	4.	0.0	1265.1
21	MAY	0110	36	5.	0.0	1265.1	*	21	MAY	0430	136	269.	1.5	1271.0	*	21	MAY	0750	236	3.	0.0	1265.1
21	MAY	0112	37	5.	0.0	1265.1	*	21	MAY	0432	137	257.	1.4	1270.7	*	21	MAY	0752	237	3.	0.0	1265.1
21	MAY	0114	38	5.	0.0	1265.1	*	21	MAY	0434	138	244.	1.3	1270.4	*	21	MAY	0754	238	3.	0.0	1265.1
21	MAY	0116	39	5.	0.0	1265.1	*	21	MAY	0436	139	230.	1.2	1270.1	*	21	MAY	0756	239	3.	0.0	1265.1
21	MAY	0118	40	5.	0.0	1265.1	*	21	MAY	0438	140	215.	1.1	1269.8	*	21	MAY	0758	240	3.	0.0	1265.1
21	MAY	0120	41	5.	0.0	1265.1	*	21	MAY	0440	141	200.	1.0	1269.5	*	21	MAY	0800	241	3.	0.0	1265.1
21	MAY	0122	42	5.	0.0	1265.1	*	21	MAY	0442	142	187.	0.9	1269.2	*	21	MAY	0802	242	3.	0.0	1265.1
21	MAY	0124	43	5.	0.0	1265.1	*	21	MAY	0444	143	175.	0.8	1268.9	*	21	MAY	0804	243	3.	0.0	1265.1
21	MAY	0126	44	5.	0.0	1265.1	*	21	MAY	0446	144	163.	0.8	1268.7	*	21	MAY	0806	244	3.	0.0	1265.1
21	MAY	0128	45	5.	0.0	1265.1	*	21	MAY	0448	145	152.	0.7	1268.5	*	21	MAY	0808	245	3.	0.0	1265.1
21	MAY	0130	46	5.	0.0	1265.1	*	21	MAY	0450	146	142.	0.6	1268.2	*	21	MAY	0810	246	3.	0.0	1265.1
21	MAY	0132	47	5.	0.0	1265.1	*	21	MAY	0452	147	133.	0.6	1268.0	*	21	MAY	0812	247	2.	0.0	1265.1
21	MAY	0134	48	5.	0.0	1265.1	*	21	MAY	0454	148	125.	0.5	1267.8	*	21	MAY	0814	248	2.	0.0	1265.1
21	MAY	0136	49	5.	0.0	1265.1	*	21	MAY	0456	149	116.	0.5	1267.6	*	21	MAY	0816	249	2.	0.0	1265.1
21	MAY	0138	50	5.	0.0	1265.1	*	21	MAY	0458	150	106.	0.5	1267.5	*	21	MAY	0818	250	2.	0.0	1265.1
21	MAY	0140	51	5.	0.0	1265.1	*	21	MAY	0500	151	97.	0.4	1267.4	*	21	MAY	0820	251	2.	0.0	1265.1
21	MAY	0142	52	5.	0.0	1265.1	*	21	MAY	0502	152	90.	0.4	1267.3	*	21	MAY	0822	252	2.	0.0	1265.1
21	MAY	0144	53	6.	0.0	1265.2	*	21	MAY	0504	153	85.	0.4	1267.2	*	21	MAY	0824	253	2.	0.0	1265.1
21	MAY	0146	54	6.	0.0	1265.2	*	21	MAY	0506	154	80.	0.4	1267.1	*	21	MAY	0826	254	2.	0.0	1265.1
21	MAY	0148	55	6.	0.0	1265.2	*	21	MAY	0508	155	75.	0.4	1267.1	*	21	MAY	0828	255	2.	0.0	1265.1
21	MAY	0150	56	6.	0.0	1265.2	*	21	MAY	0510	156	72.	0.4	1267.0	*	21	MAY	0830	256	2.	0.0	1265.1
21	MAY	0152	57	7.	0.0	1265.2	*	21	MAY	0512	157	69.	0.3	1266.9	*	21	MAY	0832	257	2.	0.0	1265.1
21	MAY	0154	58	7.	0.0	1265.2	*	21	MAY	0514	158	66.	0.3	1266.8	*	21	MAY	0834	258	2.	0.0	1265.1
21	MAY	0156	59	7.	0.0	1265.2	*	21	MAY	0516	159	63.	0.3	1266.7	*	21	MAY	0836	259	2.	0.0	1265.1
21	MAY	0158	60	8.	0.0	1265.2	*	21	MAY	0518	160	60.	0.3	1266.7	*	21	MAY	0838	260	2.	0.0	1265.1
21	MAY	0200	61	8.	0.0	1265.2	*	21	MAY	0520	161	57.	0.3	1266.6	*	21	MAY	0840	261	2.	0.0	1265.1
21	MAY	0202	62	8.	0.0	1265.2	*	21	MAY	0522	162	55.	0.3	1266.5	*	21	MAY	0842	262	2.	0.0	1265.1
21	MAY	0204	63	9.	0.0	1265.2	*	21	MAY	0524	163	52.	0.2	1266.5	*	21	MAY	0844	263	2.	0.0	1265.1
21	MAY	0206	64	9.	0.0	1265.3	*	21	MAY	0526	164	50.	0.2	1266.4	*	21	MAY	0846	264	2.	0.0	1265.1
21	MAY	0208	65	10.	0.0	1265.3	*	21	MAY	0528	165	48.	0.2	1266.3	*	21	MAY	0848	265	2.	0.0	1265.1
21	MAY	0210	66	11.	0.0	1265.3	*	21	MAY	0530	166	46.	0.2	1266.3	*	21	MAY	0850	266	2.	0.0	1265.1
21	MAY	0212	67	11.	0.0	1265.3	*	21	MAY	0532	167	45.	0.2	1266.2	*	21	MAY	0852	267	2.	0.0	1265.0
21	MAY	0214	68	12.	0.1	1265.3	*	21	MAY	0534	168	43.	0.2	1266.2	*	21	MAY	0854	268	1.	0.0	1265.0

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

21	MAY	0216	69	12.	0.1	1265.3	*	21 MAY 0536	169	42.	0.2	1266.2	*	21 MAY 0856	269	1.	0.0	1265.0
21	MAY	0218	70	13.	0.1	1265.4	*	21 MAY 0538	170	40.	0.2	1266.1	*	21 MAY 0858	270	1.	0.0	1265.0
21	MAY	0220	71	13.	0.1	1265.4	*	21 MAY 0540	171	39.	0.2	1266.1	*	21 MAY 0900	271	1.	0.0	1265.0
21	MAY	0222	72	14.	0.1	1265.4	*	21 MAY 0542	172	38.	0.2	1266.1	*	21 MAY 0902	272	1.	0.0	1265.0
21	MAY	0224	73	14.	0.1	1265.4	*	21 MAY 0544	173	37.	0.2	1266.0	*	21 MAY 0904	273	1.	0.0	1265.0
21	MAY	0226	74	15.	0.1	1265.4	*	21 MAY 0546	174	36.	0.2	1266.0	*	21 MAY 0906	274	1.	0.0	1265.0
21	MAY	0228	75	15.	0.1	1265.4	*	21 MAY 0548	175	35.	0.1	1266.0	*	21 MAY 0908	275	1.	0.0	1265.0
21	MAY	0230	76	16.	0.1	1265.4	*	21 MAY 0550	176	34.	0.1	1266.0	*	21 MAY 0910	276	1.	0.0	1265.0
21	MAY	0232	77	16.	0.1	1265.5	*	21 MAY 0552	177	33.	0.1	1265.9	*	21 MAY 0912	277	1.	0.0	1265.0
21	MAY	0234	78	17.	0.1	1265.5	*	21 MAY 0554	178	33.	0.1	1265.9	*	21 MAY 0914	278	1.	0.0	1265.0
21	MAY	0236	79	18.	0.1	1265.5	*	21 MAY 0556	179	32.	0.1	1265.9	*	21 MAY 0916	279	1.	0.0	1265.0
21	MAY	0238	80	19.	0.1	1265.5	*	21 MAY 0558	180	31.	0.1	1265.9	*	21 MAY 0918	280	1.	0.0	1265.0
21	MAY	0240	81	21.	0.1	1265.6	*	21 MAY 0600	181	31.	0.1	1265.9	*	21 MAY 0920	281	1.	0.0	1265.0
21	MAY	0242	82	23.	0.1	1265.6	*	21 MAY 0602	182	30.	0.1	1265.8	*	21 MAY 0922	282	1.	0.0	1265.0
21	MAY	0244	83	26.	0.1	1265.7	*	21 MAY 0604	183	30.	0.1	1265.8	*	21 MAY 0924	283	1.	0.0	1265.0
21	MAY	0246	84	30.	0.1	1265.8	*	21 MAY 0606	184	29.	0.1	1265.8	*	21 MAY 0926	284	1.	0.0	1265.0
21	MAY	0248	85	36.	0.2	1266.0	*	21 MAY 0608	185	29.	0.1	1265.8	*	21 MAY 0928	285	1.	0.0	1265.0
21	MAY	0250	86	42.	0.2	1266.2	*	21 MAY 0610	186	28.	0.1	1265.8	*	21 MAY 0930	286	1.	0.0	1265.0
21	MAY	0252	87	50.	0.2	1266.4	*	21 MAY 0612	187	27.	0.1	1265.8	*	21 MAY 0932	287	1.	0.0	1265.0
21	MAY	0254	88	60.	0.3	1266.7	*	21 MAY 0614	188	27.	0.1	1265.7	*	21 MAY 0934	288	1.	0.0	1265.0
21	MAY	0256	89	73.	0.4	1267.0	*	21 MAY 0616	189	26.	0.1	1265.7	*	21 MAY 0936	289	1.	0.0	1265.0
21	MAY	0258	90	98.	0.4	1267.4	*	21 MAY 0618	190	25.	0.1	1265.7	*	21 MAY 0938	290	1.	0.0	1265.0
21	MAY	0300	91	126.	0.5	1267.9	*	21 MAY 0620	191	24.	0.1	1265.7	*	21 MAY 0940	291	1.	0.0	1265.0
21	MAY	0302	92	162.	0.8	1268.7	*	21 MAY 0622	192	23.	0.1	1265.6	*	21 MAY 0942	292	1.	0.0	1265.0
21	MAY	0304	93	225.	1.2	1270.0	*	21 MAY 0624	193	22.	0.1	1265.6	*	21 MAY 0944	293	1.	0.0	1265.0
21	MAY	0306	94	298.	1.8	1271.7	*	21 MAY 0626	194	21.	0.1	1265.6	*	21 MAY 0946	294	1.	0.0	1265.0
21	MAY	0308	95	346.	2.5	1273.0	*	21 MAY 0628	195	20.	0.1	1265.5	*	21 MAY 0948	295	1.	0.0	1265.0
21	MAY	0310	96	371.	3.3	1273.8	*	21 MAY 0630	196	19.	0.1	1265.5	*	21 MAY 0950	296	1.	0.0	1265.0
21	MAY	0312	97	378.	3.9	1274.3	*	21 MAY 0632	197	18.	0.1	1265.5	*	21 MAY 0952	297	1.	0.0	1265.0
21	MAY	0314	98	378.	4.5	1274.7	*	21 MAY 0634	198	17.	0.1	1265.5	*	21 MAY 0954	298	1.	0.0	1265.0
21	MAY	0316	99	378.	4.9	1275.0	*	21 MAY 0636	199	16.	0.1	1265.4	*	21 MAY 0956	299	1.	0.0	1265.0
21	MAY	0318	100	378.	5.3	1275.3	*	21 MAY 0638	200	15.	0.1	1265.4	*	21 MAY 0958	300	1.	0.0	1265.0
							*						*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 378.	3.20		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

PEAK STORAGE TIME MAXIMUM AVERAGE STORAGE

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
6.	3.50	1.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1276.09	3.50	1267.92	1266.78	1266.78	1266.78

CUMULATIVE AREA = 0.00 SQ MI

1

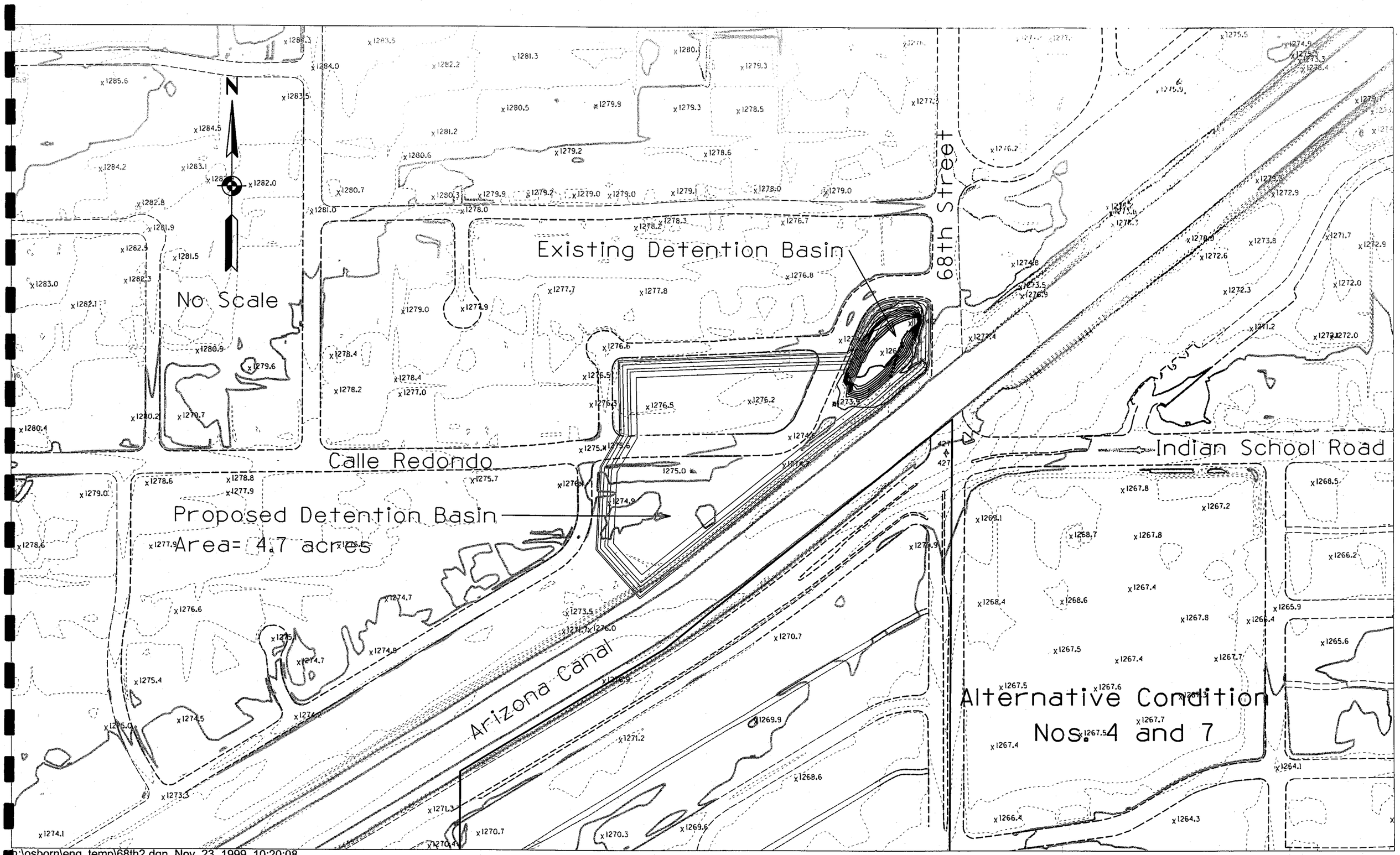
RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00		
+	ROUTED TO	RETAIN	378.	3.20	116.	71.	71.	0.00		
+									1276.09	3.50

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

Condition No. 6
Existing Detention Basin
Existing Discharge Pipe Under Inlet Control
35 cfs Discharge to Osborn Outfall

Alternative Condition Number 7



h:\osborn\eng_temp\68th2.dgn Nov. 23, 1999 10:20:08

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     \Lahey F77L-EM/32 version 5.01   *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  14:20:49  *
 ****************************************
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

1 HEC-1 INPUT PAGE 1

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

   1          ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
   2          ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
   3          ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
   4          ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
   5          ID
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Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

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 6          ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
 7          ID          ALTERNATIVE CONDITION NO. 7- PROPOSED 100-YEAR DETENTION BASIN
 8          ID                                       EXISTING OUTFALL LIMITED TO 100 CFS
 9          ID                                       ASSUME CONNECTION TO OSBORN AT 35 CFS
10          ID
11          ID          ALAN HUMPHREY
12          ID          9/99
13          ID
14          ID          FILE: OSBEXT.DAT
15          ID
16          IT      2 21MAY97    0000     300

17          KK   FLOOD
18          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
19          QI      0       0       0       0       0       0       0       0       0       0
20          QI      0       1       1       1       1       2       2       3       3       4
21          QI      4       4       4       4       4       4       4       4       4       4
22          QI      4       4       4       4       5       5       5       5       5       5
23          QI      5       5       5       5       5       5       5       5       5       5
24          QI      5       6       6       6       6       7       7       7       8       8
25          QI      9       9      10      10      11      12      12      13      13      14
26          QI     14      15      15      16      16      17      17      18      19      21
27          QI     24      27      32      38      46      56      68      82     101     128
28          QI    176     265     411     558     635     634     597     554     522     503
29          QI    491     477     455     426     396     367     342     319     299     280
30          QI    263     254     249     248     253     260     264     269     273     276
31          QI    280     285     290     292     291     290     283     276     278     287
32          QI    297     286     275     263     250     237     222     207     193     180
33          QI    168     158     148     139     130     122     115     107     101      95
34          QI     89      84      79      75      70      66      63      60      57      54
35          QI     52      50      48      46      44      43      41      40      39      38
36          QI     37      36      35      34      34      33      32      32      31      30
37          QI     30      29      29      28      28      27      26      26      25      24
38          QI     23      21      20      19      18      17      16      15      14      13
39          QI     13      12      11      11      10      10       9       9       9       8
40          QI      8       8       7       7       7       7       6       6       6       6
41          QI      5       5       5       5       5       5       4       4       4       4
42          QI      4       4       4       4       3       3       3       3       3       3
43          QI      3       3       3       3       3       2       2       2       2       2
44          QI      2       2       2       2       2       2       2       2       2       2
45          QI      2       2       2       2       2       2       1       1       1       1
46          QI      1       1       1       1       1       1       1       1       1       1
47          QI      1       1       1       1       1       1       1       1       1       1
```

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

```
            48          QI       1       1       1       1       1       1       1       1       1       1
1                                                   HEC-1 INPUT                                                    PAGE  2

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


            49          KK  RETAIN
            50          KM   RETENTION BASIN NORTH OF ARIZONA CANAL
            51          KM   REMOVE 5 HOUSES
            52          RS       1    STOR       0
            53          SA    3.04    3.57    3.85    4.27    4.56
            54          SE    1264    1268    1270    1273    1275
                        * ADD 35 CFS TO DISCHARGE FROM EXISTING PIPE- MAX DISCHARGE = 135 CFS
                        * SQ     0      40      80     100     100     100     100     100     100
            55          SQ       0      75     115     135     135     135     135     135     135
            56          SE    1265 1267.08 1267.61 1268.53 1269.37 1270.20 1271.09 1273.25 1274.58
            57          ZZ
1*****************************************                                    *****************************************
 *                                       *                                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS       *
 *              MAY   1991               *                                    *    HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.0.1E             *                                    *          609 SECOND STREET            *
 *     Lahey F77L-EM/32 version 5.01     *                                    *       DAVIS, CALIFORNIA 95616         *
 *       Dodson & Associates, Inc.       *                                    *           (916) 551-1748              *
 *  RUN DATE  04/06/00  TIME  14:20:49   *                                    *                                       *
 *****************************************                                    *****************************************
```

COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 7- PROPOSED 100-YEAR DETENTION BASIN
EXISTING OUTFALL LIMITED TO 100 CFS
ASSUME CONNECTION TO OSBORN AT 35 CFS

ALAN HUMPHREY
9/99

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

FILE: OSBEXT.DAT

```
IT          HYDROGRAPH TIME DATA
                  NMIN           2  MINUTES IN COMPUTATION INTERVAL
                 IDATE     21MAY97  STARTING DATE
                 ITIME        0000  STARTING TIME
                    NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     21MAY97  ENDING DATE
                NDTIME        0958  ENDING TIME
                 ICENT          19  CENTURY MARK

              COMPUTATION INTERVAL    0.03 HOURS
                   TOTAL TIME BASE    9.97 HOURS

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

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

           **************
           *            *
  17 KK    *     FLOOD  *
           *            *
           **************
                         68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

             SUBBASIN RUNOFF DATA

   0 BA        SUBBASIN CHARACTERISTICS
                 TAREA        0.00  SUBBASIN AREA

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Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

HYDROGRAPH AT STATION FLOOD

DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	21 MAY 0230	76	17.	21 MAY 0500	151	89.	21 MAY 0730	226	5.
21 MAY 0002	2	0.	21 MAY 0232	77	17.	21 MAY 0502	152	84.	21 MAY 0732	227	4.
21 MAY 0004	3	0.	21 MAY 0234	78	18.	21 MAY 0504	153	79.	21 MAY 0734	228	4.
21 MAY 0006	4	0.	21 MAY 0236	79	19.	21 MAY 0506	154	75.	21 MAY 0736	229	4.
21 MAY 0008	5	0.	21 MAY 0238	80	21.	21 MAY 0508	155	70.	21 MAY 0738	230	4.
21 MAY 0010	6	0.	21 MAY 0240	81	24.	21 MAY 0510	156	66.	21 MAY 0740	231	4.
21 MAY 0012	7	0.	21 MAY 0242	82	27.	21 MAY 0512	157	63.	21 MAY 0742	232	4.
21 MAY 0014	8	0.	21 MAY 0244	83	32.	21 MAY 0514	158	60.	21 MAY 0744	233	4.
21 MAY 0016	9	0.	21 MAY 0246	84	38.	21 MAY 0516	159	57.	21 MAY 0746	234	4.
21 MAY 0018	10	0.	21 MAY 0248	85	46.	21 MAY 0518	160	54.	21 MAY 0748	235	3.
21 MAY 0020	11	0.	21 MAY 0250	86	56.	21 MAY 0520	161	52.	21 MAY 0750	236	3.
21 MAY 0022	12	1.	21 MAY 0252	87	68.	21 MAY 0522	162	50.	21 MAY 0752	237	3.
21 MAY 0024	13	1.	21 MAY 0254	88	82.	21 MAY 0524	163	48.	21 MAY 0754	238	3.
21 MAY 0026	14	1.	21 MAY 0256	89	101.	21 MAY 0526	164	46.	21 MAY 0756	239	3.
21 MAY 0028	15	1.	21 MAY 0258	90	128.	21 MAY 0528	165	44.	21 MAY 0758	240	3.
21 MAY 0030	16	2.	21 MAY 0300	91	176.	21 MAY 0530	166	43.	21 MAY 0800	241	3.
21 MAY 0032	17	2.	21 MAY 0302	92	265.	21 MAY 0532	167	41.	21 MAY 0802	242	3.
21 MAY 0034	18	3.	21 MAY 0304	93	411.	21 MAY 0534	168	40.	21 MAY 0804	243	3.
21 MAY 0036	19	3.	21 MAY 0306	94	558.	21 MAY 0536	169	39.	21 MAY 0806	244	3.
21 MAY 0038	20	4.	21 MAY 0308	95	635.	21 MAY 0538	170	38.	21 MAY 0808	245	3.
21 MAY 0040	21	4.	21 MAY 0310	96	634.	21 MAY 0540	171	37.	21 MAY 0810	246	2.
21 MAY 0042	22	4.	21 MAY 0312	97	597.	21 MAY 0542	172	36.	21 MAY 0812	247	2.
21 MAY 0044	23	4.	21 MAY 0314	98	554.	21 MAY 0544	173	35.	21 MAY 0814	248	2.
21 MAY 0046	24	4.	21 MAY 0316	99	522.	21 MAY 0546	174	34.	21 MAY 0816	249	2.
21 MAY 0048	25	4.	21 MAY 0318	100	503.	21 MAY 0548	175	34.	21 MAY 0818	250	2.
21 MAY 0050	26	4.	21 MAY 0320	101	491.	21 MAY 0550	176	33.	21 MAY 0820	251	2.
21 MAY 0052	27	4.	21 MAY 0322	102	477.	21 MAY 0552	177	32.	21 MAY 0822	252	2.
21 MAY 0054	28	4.	21 MAY 0324	103	455.	21 MAY 0554	178	32.	21 MAY 0824	253	2.
21 MAY 0056	29	4.	21 MAY 0326	104	426.	21 MAY 0556	179	31.	21 MAY 0826	254	2.
21 MAY 0058	30	4.	21 MAY 0328	105	396.	21 MAY 0558	180	30.	21 MAY 0828	255	2.
21 MAY 0100	31	4.	21 MAY 0330	106	367.	21 MAY 0600	181	30.	21 MAY 0830	256	2.
21 MAY 0102	32	4.	21 MAY 0332	107	342.	21 MAY 0602	182	29.	21 MAY 0832	257	2.
21 MAY 0104	33	4.	21 MAY 0334	108	319.	21 MAY 0604	183	29.	21 MAY 0834	258	2.
21 MAY 0106	34	4.	21 MAY 0336	109	299.	21 MAY 0606	184	28.	21 MAY 0836	259	2.

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

21 MAY 0108	35	5.	*	21 MAY 0338	110	280.	*	21 MAY 0608	185	28.	*	21 MAY 0838	260	2.
21 MAY 0110	36	5.	*	21 MAY 0340	111	263.	*	21 MAY 0610	186	27.	*	21 MAY 0840	261	2.
21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.
21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
			*				*				*			

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Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 635.	3.13		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

CUMULATIVE AREA = 0.00 SQ MI

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              **************
              *            *
   49 KK      *    RETAIN  *
              *            *
              **************
                             RETENTION BASIN NORTH OF ARIZONA CANAL
                             REMOVE 5 HOUSES

                HYDROGRAPH ROUTING DATA

   52 RS          STORAGE ROUTING
                       NSTPS          1  NUMBER OF SUBREACHES
                        ITYP       STOR  TYPE OF INITIAL CONDITION
                      RSVRIC       0.00  INITIAL CONDITION
                           X       0.00 WORKING R AND D COEFFICIENT

   53 SA                AREA        3.0       3.6       3.8       4.3       4.6

   54 SE          ELEVATION    1264.00   1268.00   1270.00   1273.00   1275.00

   55 SQ          DISCHARGE         0.       75.      115.      135.      135.      135.      135.      135.      135.

   56 SE          ELEVATION    1265.00   1267.08   1267.61   1268.53   1269.37   1270.20   1271.09   1273.25   1274.58
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Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	13.21	20.62	32.80	41.63
ELEVATION	1264.00	1268.00	1270.00	1273.00	1275.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	3.10	9.98	11.82	13.21	15.12	18.23	20.62	21.40	24.90
OUTFLOW	0.00	0.00	75.00	115.00	123.48	135.00	135.00	135.00	135.00	135.00
ELEVATION	1264.00	1265.00	1267.08	1267.61	1268.00	1268.53	1269.37	1270.00	1270.20	1271.09

STORAGE	32.80	33.87	39.72	41.63
OUTFLOW	135.00	135.00	135.00	135.00
ELEVATION	1273.00	1273.25	1274.58	1275.00

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HYDROGRAPH AT STATION RETAIN

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
21	MAY	0000	1	0.	0.0	1264.0	*	21	MAY	0320	101	135.	15.2	1268.5	*	21	MAY	0640	201	135.	18.4	1269.4
21	MAY	0002	2	0.	0.0	1264.0	*	21	MAY	0322	102	135.	16.1	1268.8	*	21	MAY	0642	202	135.	18.1	1269.3
21	MAY	0004	3	0.	0.0	1264.0	*	21	MAY	0324	103	135.	17.0	1269.0	*	21	MAY	0644	203	135.	17.8	1269.2
21	MAY	0006	4	0.	0.0	1264.0	*	21	MAY	0326	104	135.	17.9	1269.3	*	21	MAY	0646	204	135.	17.4	1269.2
21	MAY	0008	5	0.	0.0	1264.0	*	21	MAY	0328	105	135.	18.6	1269.5	*	21	MAY	0648	205	135.	17.1	1269.1
21	MAY	0010	6	0.	0.0	1264.0	*	21	MAY	0330	106	135.	19.3	1269.7	*	21	MAY	0650	206	135.	16.7	1269.0
21	MAY	0012	7	0.	0.0	1264.0	*	21	MAY	0332	107	135.	19.9	1269.8	*	21	MAY	0652	207	135.	16.4	1268.9
21	MAY	0014	8	0.	0.0	1264.0	*	21	MAY	0334	108	135.	20.5	1270.0	*	21	MAY	0654	208	135.	16.0	1268.8
21	MAY	0016	9	0.	0.0	1264.0	*	21	MAY	0336	109	135.	20.9	1270.1	*	21	MAY	0656	209	135.	15.7	1268.7
21	MAY	0018	10	0.	0.0	1264.0	*	21	MAY	0338	110	135.	21.4	1270.2	*	21	MAY	0658	210	135.	15.3	1268.6
21	MAY	0020	11	0.	0.0	1264.0	*	21	MAY	0340	111	135.	21.7	1270.3	*	21	MAY	0700	211	134.	15.0	1268.5
21	MAY	0022	12	0.	0.0	1264.0	*	21	MAY	0342	112	135.	22.1	1270.4	*	21	MAY	0702	212	132.	14.6	1268.4
21	MAY	0024	13	0.	0.0	1264.0	*	21	MAY	0344	113	135.	22.4	1270.5	*	21	MAY	0704	213	130.	14.3	1268.3
21	MAY	0026	14	0.	0.0	1264.0	*	21	MAY	0346	114	135.	22.7	1270.5	*	21	MAY	0706	214	128.	14.0	1268.2
21	MAY	0028	15	0.	0.0	1264.0	*	21	MAY	0348	115	135.	23.0	1270.6	*	21	MAY	0708	215	126.	13.6	1268.1
21	MAY	0030	16	0.	0.0	1264.0	*	21	MAY	0350	116	135.	23.4	1270.7	*	21	MAY	0710	216	124.	13.3	1268.0
21	MAY	0032	17	0.	0.0	1264.0	*	21	MAY	0352	117	135.	23.7	1270.8	*	21	MAY	0712	217	122.	13.0	1267.9
21	MAY	0034	18	0.	0.0	1264.0	*	21	MAY	0354	118	135.	24.1	1270.9	*	21	MAY	0714	218	120.	12.7	1267.8
21	MAY	0036	19	0.	0.0	1264.0	*	21	MAY	0356	119	135.	24.5	1271.0	*	21	MAY	0716	219	118.	12.4	1267.8
21	MAY	0038	20	0.	0.0	1264.0	*	21	MAY	0358	120	135.	24.8	1271.1	*	21	MAY	0718	220	116.	12.1	1267.7

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

21	MAY	0040	21	0.	0.1	1264.0	*	21	MAY	0400	121	135.	25.2	1271.2	*	21	MAY	0720	221	113.	11.8	1267.6
21	MAY	0042	22	0.	0.1	1264.0	*	21	MAY	0402	122	135.	25.6	1271.3	*	21	MAY	0722	222	107.	11.5	1267.5
21	MAY	0044	23	0.	0.1	1264.0	*	21	MAY	0404	123	135.	26.1	1271.4	*	21	MAY	0724	223	101.	11.2	1267.4
21	MAY	0046	24	0.	0.1	1264.0	*	21	MAY	0406	124	135.	26.5	1271.5	*	21	MAY	0726	224	96.	10.9	1267.4
21	MAY	0048	25	0.	0.1	1264.0	*	21	MAY	0408	125	135.	26.9	1271.6	*	21	MAY	0728	225	90.	10.7	1267.3
21	MAY	0050	26	0.	0.1	1264.0	*	21	MAY	0410	126	135.	27.3	1271.7	*	21	MAY	0730	226	85.	10.5	1267.2
21	MAY	0052	27	0.	0.1	1264.0	*	21	MAY	0412	127	135.	27.8	1271.8	*	21	MAY	0732	227	81.	10.2	1267.2
21	MAY	0054	28	0.	0.1	1264.0	*	21	MAY	0414	128	135.	28.2	1271.9	*	21	MAY	0734	228	76.	10.0	1267.1
21	MAY	0056	29	0.	0.1	1264.0	*	21	MAY	0416	129	135.	28.6	1272.0	*	21	MAY	0736	229	74.	9.8	1267.0
21	MAY	0058	30	0.	0.2	1264.0	*	21	MAY	0418	130	135.	29.0	1272.1	*	21	MAY	0738	230	71.	9.7	1267.0
21	MAY	0100	31	0.	0.2	1264.1	*	21	MAY	0420	131	135.	29.4	1272.2	*	21	MAY	0740	231	69.	9.5	1266.9
21	MAY	0102	32	0.	0.2	1264.1	*	21	MAY	0422	132	135.	29.8	1272.3	*	21	MAY	0742	232	68.	9.3	1266.9
21	MAY	0104	33	0.	0.2	1264.1	*	21	MAY	0424	133	135.	30.2	1272.4	*	21	MAY	0744	233	66.	9.1	1266.8
21	MAY	0106	34	0.	0.2	1264.1	*	21	MAY	0426	134	135.	30.6	1272.5	*	21	MAY	0746	234	64.	9.0	1266.8
21	MAY	0108	35	0.	0.2	1264.1	*	21	MAY	0428	135	135.	30.9	1272.5	*	21	MAY	0748	235	62.	8.8	1266.7
21	MAY	0110	36	0.	0.2	1264.1	*	21	MAY	0430	136	135.	31.2	1272.6	*	21	MAY	0750	236	60.	8.6	1266.7
21	MAY	0112	37	0.	0.2	1264.1	*	21	MAY	0432	137	135.	31.5	1272.7	*	21	MAY	0752	237	59.	8.5	1266.6
21	MAY	0114	38	0.	0.3	1264.1	*	21	MAY	0434	138	135.	31.7	1272.7	*	21	MAY	0754	238	57.	8.3	1266.6
21	MAY	0116	39	0.	0.3	1264.1	*	21	MAY	0436	139	135.	31.9	1272.8	*	21	MAY	0756	239	55.	8.2	1266.5
21	MAY	0118	40	0.	0.3	1264.1	*	21	MAY	0438	140	135.	32.0	1272.8	*	21	MAY	0758	240	54.	8.0	1266.5
21	MAY	0120	41	0.	0.3	1264.1	*	21	MAY	0440	141	135.	32.1	1272.8	*	21	MAY	0800	241	52.	7.9	1266.5
21	MAY	0122	42	0.	0.3	1264.1	*	21	MAY	0442	142	135.	32.2	1272.9	*	21	MAY	0802	242	51.	7.8	1266.4
21	MAY	0124	43	0.	0.3	1264.1	*	21	MAY	0444	143	135.	32.3	1272.9	*	21	MAY	0804	243	49.	7.6	1266.4
21	MAY	0126	44	0.	0.3	1264.1	*	21	MAY	0446	144	135.	32.3	1272.9	*	21	MAY	0806	244	48.	7.5	1266.3
21	MAY	0128	45	0.	0.3	1264.1	*	21	MAY	0448	145	135.	32.3	1272.9	*	21	MAY	0808	245	47.	7.4	1266.3
21	MAY	0130	46	0.	0.4	1264.1	*	21	MAY	0450	146	135.	32.3	1272.9	*	21	MAY	0810	246	45.	7.3	1266.3
21	MAY	0132	47	0.	0.4	1264.1	*	21	MAY	0452	147	135.	32.2	1272.9	*	21	MAY	0812	247	44.	7.1	1266.2
21	MAY	0134	48	0.	0.4	1264.1	*	21	MAY	0454	148	135.	32.1	1272.8	*	21	MAY	0814	248	43.	7.0	1266.2
21	MAY	0136	49	0.	0.4	1264.1	*	21	MAY	0456	149	135.	32.1	1272.8	*	21	MAY	0816	249	42.	6.9	1266.2
21	MAY	0138	50	0.	0.4	1264.1	*	21	MAY	0458	150	135.	32.0	1272.8	*	21	MAY	0818	250	40.	6.8	1266.1
21	MAY	0140	51	0.	0.4	1264.1	*	21	MAY	0500	151	135.	31.8	1272.8	*	21	MAY	0820	251	39.	6.7	1266.1
21	MAY	0142	52	0.	0.4	1264.1	*	21	MAY	0502	152	135.	31.7	1272.7	*	21	MAY	0822	252	38.	6.6	1266.1
21	MAY	0144	53	0.	0.5	1264.1	*	21	MAY	0504	153	135.	31.6	1272.7	*	21	MAY	0824	253	37.	6.5	1266.0
21	MAY	0146	54	0.	0.5	1264.2	*	21	MAY	0506	154	135.	31.4	1272.7	*	21	MAY	0826	254	36.	6.4	1266.0
21	MAY	0148	55	0.	0.5	1264.2	*	21	MAY	0508	155	135.	31.2	1272.6	*	21	MAY	0828	255	35.	6.3	1266.0
21	MAY	0150	56	0.	0.5	1264.2	*	21	MAY	0510	156	135.	31.0	1272.6	*	21	MAY	0830	256	34.	6.2	1265.9
21	MAY	0152	57	0.	0.5	1264.2	*	21	MAY	0512	157	135.	30.9	1272.5	*	21	MAY	0832	257	33.	6.1	1265.9
21	MAY	0154	58	0.	0.6	1264.2	*	21	MAY	0514	158	135.	30.6	1272.5	*	21	MAY	0834	258	32.	6.1	1265.9
21	MAY	0156	59	0.	0.6	1264.2	*	21	MAY	0516	159	135.	30.4	1272.4	*	21	MAY	0836	259	31.	6.0	1265.9
21	MAY	0158	60	0.	0.6	1264.2	*	21	MAY	0518	160	135.	30.2	1272.4	*	21	MAY	0838	260	30.	5.9	1265.8
21	MAY	0200	61	0.	0.6	1264.2	*	21	MAY	0520	161	135.	30.0	1272.3	*	21	MAY	0840	261	30.	5.8	1265.8
21	MAY	0202	62	0.	0.6	1264.2	*	21	MAY	0522	162	135.	29.8	1272.3	*	21	MAY	0842	262	29.	5.7	1265.8
21	MAY	0204	63	0.	0.7	1264.2	*	21	MAY	0524	163	135.	29.5	1272.2	*	21	MAY	0844	263	28.	5.7	1265.8

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

21 MAY 0206	64	0.	0.7	1264.2	*	21 MAY 0526	164	135.	29.3	1272.1	*	21 MAY 0846	264	27.	5.6	1265.8
21 MAY 0208	65	0.	0.7	1264.2	*	21 MAY 0528	165	135.	29.0	1272.1	*	21 MAY 0848	265	27.	5.5	1265.7
21 MAY 0210	66	0.	0.8	1264.2	*	21 MAY 0530	166	135.	28.8	1272.0	*	21 MAY 0850	266	26.	5.5	1265.7
21 MAY 0212	67	0.	0.8	1264.3	*	21 MAY 0532	167	135.	28.5	1272.0	*	21 MAY 0852	267	25.	5.4	1265.7
21 MAY 0214	68	0.	0.8	1264.3	*	21 MAY 0534	168	135.	28.3	1271.9	*	21 MAY 0854	268	24.	5.3	1265.7
21 MAY 0216	69	0.	0.9	1264.3	*	21 MAY 0536	169	135.	28.0	1271.8	*	21 MAY 0856	269	24.	5.3	1265.7
21 MAY 0218	70	0.	0.9	1264.3	*	21 MAY 0538	170	135.	27.7	1271.8	*	21 MAY 0858	270	23.	5.2	1265.6
21 MAY 0220	71	0.	0.9	1264.3	*	21 MAY 0540	171	135.	27.5	1271.7	*	21 MAY 0900	271	22.	5.2	1265.6
21 MAY 0222	72	0.	1.0	1264.3	*	21 MAY 0542	172	135.	27.2	1271.6	*	21 MAY 0902	272	22.	5.1	1265.6
21 MAY 0224	73	0.	1.0	1264.3	*	21 MAY 0544	173	135.	26.9	1271.6	*	21 MAY 0904	273	21.	5.0	1265.6
21 MAY 0226	74	0.	1.1	1264.3	*	21 MAY 0546	174	135.	26.6	1271.5	*	21 MAY 0906	274	21.	5.0	1265.6
21 MAY 0228	75	0.	1.1	1264.4	*	21 MAY 0548	175	135.	26.4	1271.4	*	21 MAY 0908	275	20.	4.9	1265.6
21 MAY 0230	76	0.	1.2	1264.4	*	21 MAY 0550	176	135.	26.1	1271.4	*	21 MAY 0910	276	19.	4.9	1265.5
21 MAY 0232	77	0.	1.2	1264.4	*	21 MAY 0552	177	135.	25.8	1271.3	*	21 MAY 0912	277	19.	4.8	1265.5
21 MAY 0234	78	0.	1.2	1264.4	*	21 MAY 0554	178	135.	25.5	1271.2	*	21 MAY 0914	278	18.	4.8	1265.5
21 MAY 0236	79	0.	1.3	1264.4	*	21 MAY 0556	179	135.	25.2	1271.2	*	21 MAY 0916	279	18.	4.7	1265.5
21 MAY 0238	80	0.	1.4	1264.4	*	21 MAY 0558	180	135.	24.9	1271.1	*	21 MAY 0918	280	17.	4.7	1265.5
21 MAY 0240	81	0.	1.4	1264.5	*	21 MAY 0600	181	135.	24.7	1271.0	*	21 MAY 0920	281	17.	4.6	1265.5
21 MAY 0242	82	0.	1.5	1264.5	*	21 MAY 0602	182	135.	24.4	1271.0	*	21 MAY 0922	282	16.	4.6	1265.5
21 MAY 0244	83	0.	1.6	1264.5	*	21 MAY 0604	183	135.	24.1	1270.9	*	21 MAY 0924	283	16.	4.6	1265.4
21 MAY 0246	84	0.	1.7	1264.5	*	21 MAY 0606	184	135.	23.8	1270.8	*	21 MAY 0926	284	15.	4.5	1265.4
21 MAY 0248	85	0.	1.8	1264.6	*	21 MAY 0608	185	135.	23.5	1270.7	*	21 MAY 0928	285	15.	4.5	1265.4
21 MAY 0250	86	0.	1.9	1264.6	*	21 MAY 0610	186	135.	23.2	1270.7	*	21 MAY 0930	286	15.	4.4	1265.4
21 MAY 0252	87	0.	2.1	1264.7	*	21 MAY 0612	187	135.	22.9	1270.6	*	21 MAY 0932	287	14.	4.4	1265.4
21 MAY 0254	88	0.	2.3	1264.7	*	21 MAY 0614	188	135.	22.6	1270.5	*	21 MAY 0934	288	14.	4.4	1265.4
21 MAY 0256	89	0.	2.5	1264.8	*	21 MAY 0616	189	135.	22.3	1270.4	*	21 MAY 0936	289	13.	4.3	1265.4
21 MAY 0258	90	0.	2.9	1264.9	*	21 MAY 0618	190	135.	22.0	1270.4	*	21 MAY 0938	290	13.	4.3	1265.4
21 MAY 0300	91	2.	3.3	1265.1	*	21 MAY 0620	191	135.	21.7	1270.3	*	21 MAY 0940	291	13.	4.3	1265.4
21 MAY 0302	92	8.	3.9	1265.2	*	21 MAY 0622	192	135.	21.4	1270.2	*	21 MAY 0942	292	12.	4.2	1265.3
21 MAY 0304	93	18.	4.8	1265.5	*	21 MAY 0624	193	135.	21.1	1270.1	*	21 MAY 0944	293	12.	4.2	1265.3
21 MAY 0306	94	32.	6.0	1265.9	*	21 MAY 0626	194	135.	20.7	1270.0	*	21 MAY 0946	294	12.	4.2	1265.3
21 MAY 0308	95	49.	7.6	1266.3	*	21 MAY 0628	195	135.	20.4	1269.9	*	21 MAY 0948	295	11.	4.1	1265.3
21 MAY 0310	96	66.	9.2	1266.8	*	21 MAY 0630	196	135.	20.1	1269.9	*	21 MAY 0950	296	11.	4.1	1265.3
21 MAY 0312	97	89.	10.6	1267.3	*	21 MAY 0632	197	135.	19.8	1269.8	*	21 MAY 0952	297	11.	4.1	1265.3
21 MAY 0314	98	116.	11.9	1267.6	*	21 MAY 0634	198	135.	19.4	1269.7	*	21 MAY 0954	298	10.	4.1	1265.3
21 MAY 0316	99	123.	13.1	1268.0	*	21 MAY 0636	199	135.	19.1	1269.6	*	21 MAY 0956	299	10.	4.0	1265.3
21 MAY 0318	100	129.	14.2	1268.3	*	21 MAY 0638	200	135.	18.8	1269.5	*	21 MAY 0958	300	10.	4.0	1265.3
					*						*					

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)				

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

		(CFS)				
+ 135.	3.33		107.	66.	66.	66.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	53.	54.	54.	54.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
32.	4.77	19.	12.	12.	12.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1272.88	4.77	1269.42	1267.45	1267.45	1267.45

CUMULATIVE AREA = 0.00 SQ MI

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00		
+	ROUTED TO	RETAIN	135.	3.33	107.	66.	66.	0.00		
+									1272.88	4.77

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

Condition No. 7
Existing Detention Basin
Existing Discharge Pipe = 100 cfs Max
35 cfs to Osborn Outfall

Alternative Condition Number 8

Hypothetical Storm Drain, 400 cfs

Pipe	Upstream Node	Downstream Node	Section Size	Length (ft)	Discharge (cfs)	Velocity (ft/s)	Upstream Ground Elevation (ft)	Upstream HGL (ft)	Upstream Invert Elevation (ft)	Downstream Ground Elevation (ft)	Downstream HGL (ft)	Downstream Invert Elevation (ft)
P-1	I-1	Outlet	102 inch	11,200.00	400.00	11.54	1,275.00	1,268.99	1,264.00	1,235.00	1,228.50	1,217.00

Hypothetical Storm Drain, Max 514 cfs

Pipe	Upstream Node	Downstream Node	Section Size	Length (ft)	Discharge (cfs)	Velocity (ft/s)	Upstream Ground Elevation (ft)	Upstream HGL (ft)	Upstream Invert Elevation (ft)	Downstream Ground Elevation (ft)	Downstream HGL (ft)	Downstream Invert Elevation (ft)
P-1	I-1	Outlet	102 inch	11,200.00	514.00	12.74	1,275.00	1,269.69	1,264.00	1,235.00	1,228.50	1,217.00

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              MAY   1991              *
 *           VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01    *
 *       Dodson & Associates, Inc.      *
 *  RUN DATE  04/06/00  TIME  14:27:33  *
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

1 HEC-1 INPUT PAGE 1

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

  1           ID          COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
  2           ID          68TH STREET.  FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
  3           ID          BASIN 17 AND ARCADIA DRAINAGE STUDY.
  4           ID          INPUT HYDROGRAPH PROVIDED BY FCDMC
  5           ID
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Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

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 6          ID          DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
 7          ID          ALTERNATIVE CONDITION NO. 8- EXISTING DETENTION BASIN
 8          ID                                       HYPOTHETICAL OUTFALL UNDER INLET CONTROL
 9          ID          ALAN HUMPHREY
10          ID          9/99
11          ID
12          ID          FILE: HYPONO.DAT
13          ID
14          IT       2 21MAY97    0000     300

15          KK   FLOOD
16          KM   68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL
17          QI       0       0       0       0       0       0       0       0       0       0
18          QI       0       1       1       1       1       2       2       3       3       4
19          QI       4       4       4       4       4       4       4       4       4       4
20          QI       4       4       4       4       5       5       5       5       5       5
21          QI       5       5       5       5       5       5       5       5       5       5
22          QI       5       6       6       6       6       7       7       7       8       8
23          QI       9       9      10      10      11      12      12      13      13      14
24          QI      14      15      15      16      16      17      17      18      19      21
25          QI      24      27      32      38      46      56      68      82     101     128
26          QI     176     265     411     558     635     634     597     554     522     503
27          QI     491     477     455     426     396     367     342     319     299     280
28          QI     263     254     249     248     253     260     264     269     273     276
29          QI     280     285     290     292     291     290     283     276     278     287
30          QI     297     286     275     263     250     237     222     207     193     180
31          QI     168     158     148     139     130     122     115     107     101      95
32          QI      89      84      79      75      70      66      63      60      57      54
33          QI      52      50      48      46      44      43      41      40      39      38
34          QI      37      36      35      34      34      33      32      32      31      30
35          QI      30      29      29      28      28      27      26      26      25      24
36          QI      23      21      20      19      18      17      16      15      14      13
37          QI      13      12      11      11      10      10       9       9       9       8
38          QI       8       8       7       7       7       7       6       6       6       6
39          QI       5       5       5       5       5       5       4       4       4       4
40          QI       4       4       4       4       3       3       3       3       3       3
41          QI       3       3       3       3       3       2       2       2       2       2
42          QI       2       2       2       2       2       2       2       2       2       2
43          QI       2       2       2       2       2       2       1       1       1       1
44          QI       1       1       1       1       1       1       1       1       1       1
45          QI       1       1       1       1       1       1       1       1       1       1
46          QI       1       1       1       1       1       1       1       1       1       1
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Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

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47          KK  RETAIN
48          KM   EXISTING DETENTION BASIN NORTH OF ARIZONA CANAL
49          KM   HYPOTHETICAL 102" DISCHARGE PIPE
50          KM   ASSUME 3 FEET OF TAILWATER ABOVE TOP OF PIPE AT INDIAN BEND WASH
51          KM   HY8/STORMCAD ANALYSIS SHOWS SYSTEM UNDER INLET CONTROL UP TO 500 CFS
52          KM   ASSUME VERTICAL STORAGE ABOVE ELEVATION 1274.0
53          KM   ASSUME FIXED OUTFLOW ABOVE ELEVATION 1274.0
1                                    HEC-1 INPUT                                    PAGE  2

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

       54           RS       1    STOR       0
       55           SA    0.13    0.18    0.21    0.25    0.29    0.32    0.36    0.40    1.38    1.38
       56           SE    1265    1266    1267    1268    1269    1270    1271    1272    1274    1300
       57           SQ       0     100     200     250     400     500     514     514
       58           SE    1265  1270.1  1270.9  1271.3  1272.6  1273.8    1274    1300
       59           ZZ
1*****************************************                                  ****************************************
 *                                       *                                  *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                  *    U.S. ARMY CORPS OF ENGINEERS      *
 *              MAY   1991               *                                  *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.0.1E             *                                  *          609 SECOND STREET           *
 *     Lahey F77L-EM/32 version 5.01     *                                  *       DAVIS, CALIFORNIA 95616        *
 *       Dodson & Associates, Inc.       *                                  *           (916) 551-1748             *
 *  RUN DATE  04/06/00  TIME  14:27:33   *                                  *                                      *
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COMBINATION OF THE HYDROGRAPHS FOR THE 100-YEAR, 6-HOUR FLOW AT
68TH STREET. FLOWS CONTRIBUTED FROM CITY OF SCOTTSDALE
BASIN 17 AND ARCADIA DRAINAGE STUDY.
INPUT HYDROGRAPH PROVIDED BY FCDMC

DETENTION BASIN MODELING BY PARSONS BRINCKERHOFF
ALTERNATIVE CONDITION NO. 8- EXISTING DETENTION BASIN
HYPOTHETICAL OUTFALL UNDER INLET CONTROL

ALAN HUMPHREY
9/99

FILE: HYPONO.DAT

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

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IT          HYDROGRAPH TIME DATA
                  NMIN           2  MINUTES IN COMPUTATION INTERVAL
                 IDATE     21MAY97  STARTING DATE
                 ITIME        0000  STARTING TIME
                    NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     21MAY97  ENDING DATE
                NDTIME        0958  ENDING TIME
                 ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.03 HOURS
                 TOTAL TIME BASE    9.97 HOURS

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


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


          **************
          *            *
 15 KK    *     FLOOD  *
          *            *
          **************
                         68TH STREET AND LAFAYETTE, NORTH OF ARIZONA CANAL

             SUBBASIN RUNOFF DATA

  0 BA         SUBBASIN CHARACTERISTICS
                    TAREA        0.00  SUBBASIN AREA

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Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

HYDROGRAPH AT STATION FLOOD

DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW
21 MAY 0000	1	0.	21 MAY 0230	76	17.	21 MAY 0500	151	89.	21 MAY 0730	226	5.
21 MAY 0002	2	0.	21 MAY 0232	77	17.	21 MAY 0502	152	84.	21 MAY 0732	227	4.
21 MAY 0004	3	0.	21 MAY 0234	78	18.	21 MAY 0504	153	79.	21 MAY 0734	228	4.
21 MAY 0006	4	0.	21 MAY 0236	79	19.	21 MAY 0506	154	75.	21 MAY 0736	229	4.
21 MAY 0008	5	0.	21 MAY 0238	80	21.	21 MAY 0508	155	70.	21 MAY 0738	230	4.
21 MAY 0010	6	0.	21 MAY 0240	81	24.	21 MAY 0510	156	66.	21 MAY 0740	231	4.
21 MAY 0012	7	0.	21 MAY 0242	82	27.	21 MAY 0512	157	63.	21 MAY 0742	232	4.
21 MAY 0014	8	0.	21 MAY 0244	83	32.	21 MAY 0514	158	60.	21 MAY 0744	233	4.
21 MAY 0016	9	0.	21 MAY 0246	84	38.	21 MAY 0516	159	57.	21 MAY 0746	234	4.
21 MAY 0018	10	0.	21 MAY 0248	85	46.	21 MAY 0518	160	54.	21 MAY 0748	235	3.
21 MAY 0020	11	0.	21 MAY 0250	86	56.	21 MAY 0520	161	52.	21 MAY 0750	236	3.
21 MAY 0022	12	1.	21 MAY 0252	87	68.	21 MAY 0522	162	50.	21 MAY 0752	237	3.
21 MAY 0024	13	1.	21 MAY 0254	88	82.	21 MAY 0524	163	48.	21 MAY 0754	238	3.
21 MAY 0026	14	1.	21 MAY 0256	89	101.	21 MAY 0526	164	46.	21 MAY 0756	239	3.
21 MAY 0028	15	1.	21 MAY 0258	90	128.	21 MAY 0528	165	44.	21 MAY 0758	240	3.
21 MAY 0030	16	2.	21 MAY 0300	91	176.	21 MAY 0530	166	43.	21 MAY 0800	241	3.
21 MAY 0032	17	2.	21 MAY 0302	92	265.	21 MAY 0532	167	41.	21 MAY 0802	242	3.
21 MAY 0034	18	3.	21 MAY 0304	93	411.	21 MAY 0534	168	40.	21 MAY 0804	243	3.
21 MAY 0036	19	3.	21 MAY 0306	94	558.	21 MAY 0536	169	39.	21 MAY 0806	244	3.
21 MAY 0038	20	4.	21 MAY 0308	95	635.	21 MAY 0538	170	38.	21 MAY 0808	245	3.
21 MAY 0040	21	4.	21 MAY 0310	96	634.	21 MAY 0540	171	37.	21 MAY 0810	246	2.
21 MAY 0042	22	4.	21 MAY 0312	97	597.	21 MAY 0542	172	36.	21 MAY 0812	247	2.
21 MAY 0044	23	4.	21 MAY 0314	98	554.	21 MAY 0544	173	35.	21 MAY 0814	248	2.
21 MAY 0046	24	4.	21 MAY 0316	99	522.	21 MAY 0546	174	34.	21 MAY 0816	249	2.
21 MAY 0048	25	4.	21 MAY 0318	100	503.	21 MAY 0548	175	34.	21 MAY 0818	250	2.
21 MAY 0050	26	4.	21 MAY 0320	101	491.	21 MAY 0550	176	33.	21 MAY 0820	251	2.
21 MAY 0052	27	4.	21 MAY 0322	102	477.	21 MAY 0552	177	32.	21 MAY 0822	252	2.
21 MAY 0054	28	4.	21 MAY 0324	103	455.	21 MAY 0554	178	32.	21 MAY 0824	253	2.
21 MAY 0056	29	4.	21 MAY 0326	104	426.	21 MAY 0556	179	31.	21 MAY 0826	254	2.
21 MAY 0058	30	4.	21 MAY 0328	105	396.	21 MAY 0558	180	30.	21 MAY 0828	255	2.
21 MAY 0100	31	4.	21 MAY 0330	106	367.	21 MAY 0600	181	30.	21 MAY 0830	256	2.
21 MAY 0102	32	4.	21 MAY 0332	107	342.	21 MAY 0602	182	29.	21 MAY 0832	257	2.
21 MAY 0104	33	4.	21 MAY 0334	108	319.	21 MAY 0604	183	29.	21 MAY 0834	258	2.
21 MAY 0106	34	4.	21 MAY 0336	109	299.	21 MAY 0606	184	28.	21 MAY 0836	259	2.
21 MAY 0108	35	5.	21 MAY 0338	110	280.	21 MAY 0608	185	28.	21 MAY 0838	260	2.
21 MAY 0110	36	5.	21 MAY 0340	111	263.	21 MAY 0610	186	27.	21 MAY 0840	261	2.

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

21 MAY 0112	37	5.	*	21 MAY 0342	112	254.	*	21 MAY 0612	187	26.	*	21 MAY 0842	262	2.
21 MAY 0114	38	5.	*	21 MAY 0344	113	249.	*	21 MAY 0614	188	26.	*	21 MAY 0844	263	2.
21 MAY 0116	39	5.	*	21 MAY 0346	114	248.	*	21 MAY 0616	189	25.	*	21 MAY 0846	264	2.
21 MAY 0118	40	5.	*	21 MAY 0348	115	253.	*	21 MAY 0618	190	24.	*	21 MAY 0848	265	2.
21 MAY 0120	41	5.	*	21 MAY 0350	116	260.	*	21 MAY 0620	191	23.	*	21 MAY 0850	266	2.
21 MAY 0122	42	5.	*	21 MAY 0352	117	264.	*	21 MAY 0622	192	21.	*	21 MAY 0852	267	1.
21 MAY 0124	43	5.	*	21 MAY 0354	118	269.	*	21 MAY 0624	193	20.	*	21 MAY 0854	268	1.
21 MAY 0126	44	5.	*	21 MAY 0356	119	273.	*	21 MAY 0626	194	19.	*	21 MAY 0856	269	1.
21 MAY 0128	45	5.	*	21 MAY 0358	120	276.	*	21 MAY 0628	195	18.	*	21 MAY 0858	270	1.
21 MAY 0130	46	5.	*	21 MAY 0400	121	280.	*	21 MAY 0630	196	17.	*	21 MAY 0900	271	1.
21 MAY 0132	47	5.	*	21 MAY 0402	122	285.	*	21 MAY 0632	197	16.	*	21 MAY 0902	272	1.
21 MAY 0134	48	5.	*	21 MAY 0404	123	290.	*	21 MAY 0634	198	15.	*	21 MAY 0904	273	1.
21 MAY 0136	49	5.	*	21 MAY 0406	124	292.	*	21 MAY 0636	199	14.	*	21 MAY 0906	274	1.
21 MAY 0138	50	5.	*	21 MAY 0408	125	291.	*	21 MAY 0638	200	13.	*	21 MAY 0908	275	1.
21 MAY 0140	51	5.	*	21 MAY 0410	126	290.	*	21 MAY 0640	201	13.	*	21 MAY 0910	276	1.
21 MAY 0142	52	6.	*	21 MAY 0412	127	283.	*	21 MAY 0642	202	12.	*	21 MAY 0912	277	1.
21 MAY 0144	53	6.	*	21 MAY 0414	128	276.	*	21 MAY 0644	203	11.	*	21 MAY 0914	278	1.
21 MAY 0146	54	6.	*	21 MAY 0416	129	278.	*	21 MAY 0646	204	11.	*	21 MAY 0916	279	1.
21 MAY 0148	55	6.	*	21 MAY 0418	130	287.	*	21 MAY 0648	205	10.	*	21 MAY 0918	280	1.
21 MAY 0150	56	7.	*	21 MAY 0420	131	297.	*	21 MAY 0650	206	10.	*	21 MAY 0920	281	1.
21 MAY 0152	57	7.	*	21 MAY 0422	132	286.	*	21 MAY 0652	207	9.	*	21 MAY 0922	282	1.
21 MAY 0154	58	7.	*	21 MAY 0424	133	275.	*	21 MAY 0654	208	9.	*	21 MAY 0924	283	1.
21 MAY 0156	59	8.	*	21 MAY 0426	134	263.	*	21 MAY 0656	209	9.	*	21 MAY 0926	284	1.
21 MAY 0158	60	8.	*	21 MAY 0428	135	250.	*	21 MAY 0658	210	8.	*	21 MAY 0928	285	1.
21 MAY 0200	61	9.	*	21 MAY 0430	136	237.	*	21 MAY 0700	211	8.	*	21 MAY 0930	286	1.
21 MAY 0202	62	9.	*	21 MAY 0432	137	222.	*	21 MAY 0702	212	8.	*	21 MAY 0932	287	1.
21 MAY 0204	63	10.	*	21 MAY 0434	138	207.	*	21 MAY 0704	213	7.	*	21 MAY 0934	288	1.
21 MAY 0206	64	10.	*	21 MAY 0436	139	193.	*	21 MAY 0706	214	7.	*	21 MAY 0936	289	1.
21 MAY 0208	65	11.	*	21 MAY 0438	140	180.	*	21 MAY 0708	215	7.	*	21 MAY 0938	290	1.
21 MAY 0210	66	12.	*	21 MAY 0440	141	168.	*	21 MAY 0710	216	7.	*	21 MAY 0940	291	1.
21 MAY 0212	67	12.	*	21 MAY 0442	142	158.	*	21 MAY 0712	217	6.	*	21 MAY 0942	292	1.
21 MAY 0214	68	13.	*	21 MAY 0444	143	148.	*	21 MAY 0714	218	6.	*	21 MAY 0944	293	1.
21 MAY 0216	69	13.	*	21 MAY 0446	144	139.	*	21 MAY 0716	219	6.	*	21 MAY 0946	294	1.
21 MAY 0218	70	14.	*	21 MAY 0448	145	130.	*	21 MAY 0718	220	6.	*	21 MAY 0948	295	1.
21 MAY 0220	71	14.	*	21 MAY 0450	146	122.	*	21 MAY 0720	221	5.	*	21 MAY 0950	296	1.
21 MAY 0222	72	15.	*	21 MAY 0452	147	115.	*	21 MAY 0722	222	5.	*	21 MAY 0952	297	1.
21 MAY 0224	73	15.	*	21 MAY 0454	148	107.	*	21 MAY 0724	223	5.	*	21 MAY 0954	298	1.
21 MAY 0226	74	16.	*	21 MAY 0456	149	101.	*	21 MAY 0726	224	5.	*	21 MAY 0956	299	1.
21 MAY 0228	75	16.	*	21 MAY 0458	150	95.	*	21 MAY 0728	225	5.	*	21 MAY 0958	300	1.
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PEAK FLOW TIME MAXIMUM AVERAGE FLOW

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

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                                        6-HR        24-HR       72-HR       9.97-HR
+   (CFS)       (HR)
                              (CFS)
+     635.      3.13                    116.         71.         71.          71.
                          (INCHES)     0.000       0.000       0.000        0.000
                           (AC-FT)      58.         58.         58.          58.

                          CUMULATIVE AREA =    0.00 SQ MI


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            **************
            *            *
  47 KK     *    RETAIN  *
            *            *
            **************
                           EXISTING DETENTION BASIN NORTH OF ARIZONA CANAL
                           HYPOTHETICAL 102" DISCHARGE PIPE
                           ASSUME 3 FEET OF TAILWATER ABOVE TOP OF PIPE AT INDIAN BEND WASH
                           HY8/STORMCAD ANALYSIS SHOWS SYSTEM UNDER INLET CONTROL UP TO 500 CFS
                           ASSUME VERTICAL STORAGE ABOVE ELEVATION 1274.0
                           ASSUME FIXED OUTFLOW ABOVE ELEVATION 1274.0

              HYDROGRAPH ROUTING DATA

  54 RS         STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       STOR  TYPE OF INITIAL CONDITION
                     RSVRIC       0.00  INITIAL CONDITION
                          X       0.00 WORKING R AND D COEFFICIENT

  55 SA                AREA        0.1       0.2       0.2       0.3       0.3       0.3       0.4       0.4       1.4       1.4

  56 SE           ELEVATION    1265.00   1266.00   1267.00   1268.00   1269.00   1270.00   1271.00   1272.00   1274.00   1300.00

  57 SQ           DISCHARGE         0.      100.      200.      250.      400.      500.      514.      514.
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Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

58 SE	ELEVATION	1265.00	1270.10	1270.90	1271.30	1272.60	1273.80	1274.00	1300.00

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COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	0.15	0.35	0.58	0.85	1.15	1.49	1.87	3.56	39.44
ELEVATION	1265.00	1266.00	1267.00	1268.00	1269.00	1270.00	1271.00	1272.00	1274.00	1300.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.15	0.35	0.58	0.85	1.15	1.19	1.46	1.49	1.60
OUTFLOW	0.00	19.61	39.22	58.82	78.43	98.04	100.00	200.00	212.50	250.00
ELEVATION	1265.00	1266.00	1267.00	1268.00	1269.00	1270.00	1270.10	1270.90	1271.00	1271.30

STORAGE	1.87	2.18	3.29	3.56	39.44
OUTFLOW	330.77	400.00	500.00	514.00	514.00
ELEVATION	1272.00	1272.60	1273.80	1274.00	1300.00

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HYDROGRAPH AT STATION RETAIN

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DA MON HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA MON HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA MON HRMN	ORD	OUTFLOW	STORAGE	STAGE
21 MAY 0000	1	0.	0.0	1265.0	*	21 MAY 0320	101	514.	3.6	1274.0	*	21 MAY 0640	201	15.	0.1	1265.8
21 MAY 0002	2	0.	0.0	1265.0	*	21 MAY 0322	102	513.	3.5	1274.0	*	21 MAY 0642	202	14.	0.1	1265.7
21 MAY 0004	3	0.	0.0	1265.0	*	21 MAY 0324	103	507.	3.4	1273.9	*	21 MAY 0644	203	14.	0.1	1265.7
21 MAY 0006	4	0.	0.0	1265.0	*	21 MAY 0326	104	496.	3.2	1273.8	*	21 MAY 0646	204	13.	0.1	1265.7
21 MAY 0008	5	0.	0.0	1265.0	*	21 MAY 0328	105	477.	3.0	1273.5	*	21 MAY 0648	205	12.	0.1	1265.6
21 MAY 0010	6	0.	0.0	1265.0	*	21 MAY 0330	106	456.	2.8	1273.3	*	21 MAY 0650	206	11.	0.1	1265.6
21 MAY 0012	7	0.	0.0	1265.0	*	21 MAY 0332	107	434.	2.6	1273.0	*	21 MAY 0652	207	11.	0.1	1265.6
21 MAY 0014	8	0.	0.0	1265.0	*	21 MAY 0334	108	411.	2.3	1272.7	*	21 MAY 0654	208	10.	0.1	1265.5
21 MAY 0016	9	0.	0.0	1265.0	*	21 MAY 0336	109	375.	2.1	1272.4	*	21 MAY 0656	209	10.	0.1	1265.5
21 MAY 0018	10	0.	0.0	1265.0	*	21 MAY 0338	110	335.	1.9	1272.0	*	21 MAY 0658	210	10.	0.1	1265.5
21 MAY 0020	11	0.	0.0	1265.0	*	21 MAY 0340	111	299.	1.8	1271.7	*	21 MAY 0700	211	9.	0.1	1265.5
21 MAY 0022	12	0.	0.0	1265.0	*	21 MAY 0342	112	275.	1.7	1271.5	*	21 MAY 0702	212	9.	0.1	1265.4
21 MAY 0024	13	0.	0.0	1265.0	*	21 MAY 0344	113	261.	1.6	1271.4	*	21 MAY 0704	213	8.	0.1	1265.4
21 MAY 0026	14	1.	0.0	1265.0	*	21 MAY 0346	114	254.	1.6	1271.3	*	21 MAY 0706	214	8.	0.1	1265.4
21 MAY 0028	15	1.	0.0	1265.0	*	21 MAY 0348	115	252.	1.6	1271.3	*	21 MAY 0708	215	8.	0.1	1265.4

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

21	MAY	0030	16	1.	0.0	1265.0	*	21	MAY	0350	116	255.	1.6	1271.3	*	21	MAY	0710	216	7.	0.1	1265.4
21	MAY	0032	17	1.	0.0	1265.1	*	21	MAY	0352	117	259.	1.6	1271.4	*	21	MAY	0712	217	7.	0.1	1265.4
21	MAY	0034	18	2.	0.0	1265.1	*	21	MAY	0354	118	263.	1.6	1271.4	*	21	MAY	0714	218	7.	0.1	1265.3
21	MAY	0036	19	2.	0.0	1265.1	*	21	MAY	0356	119	268.	1.7	1271.5	*	21	MAY	0716	219	7.	0.1	1265.3
21	MAY	0038	20	2.	0.0	1265.1	*	21	MAY	0358	120	272.	1.7	1271.5	*	21	MAY	0718	220	6.	0.1	1265.3
21	MAY	0040	21	3.	0.0	1265.1	*	21	MAY	0400	121	275.	1.7	1271.5	*	21	MAY	0720	221	6.	0.0	1265.3
21	MAY	0042	22	3.	0.0	1265.2	*	21	MAY	0402	122	280.	1.7	1271.6	*	21	MAY	0722	222	6.	0.0	1265.3
21	MAY	0044	23	3.	0.0	1265.2	*	21	MAY	0404	123	284.	1.7	1271.6	*	21	MAY	0724	223	6.	0.0	1265.3
21	MAY	0046	24	4.	0.0	1265.2	*	21	MAY	0406	124	288.	1.7	1271.6	*	21	MAY	0726	224	5.	0.0	1265.3
21	MAY	0048	25	4.	0.0	1265.2	*	21	MAY	0408	125	290.	1.7	1271.6	*	21	MAY	0728	225	5.	0.0	1265.3
21	MAY	0050	26	4.	0.0	1265.2	*	21	MAY	0410	126	290.	1.7	1271.6	*	21	MAY	0730	226	5.	0.0	1265.3
21	MAY	0052	27	4.	0.0	1265.2	*	21	MAY	0412	127	288.	1.7	1271.6	*	21	MAY	0732	227	5.	0.0	1265.3
21	MAY	0054	28	4.	0.0	1265.2	*	21	MAY	0414	128	283.	1.7	1271.6	*	21	MAY	0734	228	5.	0.0	1265.2
21	MAY	0056	29	4.	0.0	1265.2	*	21	MAY	0416	129	280.	1.7	1271.6	*	21	MAY	0736	229	4.	0.0	1265.2
21	MAY	0058	30	4.	0.0	1265.2	*	21	MAY	0418	130	281.	1.7	1271.6	*	21	MAY	0738	230	4.	0.0	1265.2
21	MAY	0100	31	4.	0.0	1265.2	*	21	MAY	0420	131	288.	1.7	1271.6	*	21	MAY	0740	231	4.	0.0	1265.2
21	MAY	0102	32	4.	0.0	1265.2	*	21	MAY	0422	132	290.	1.7	1271.6	*	21	MAY	0742	232	4.	0.0	1265.2
21	MAY	0104	33	4.	0.0	1265.2	*	21	MAY	0424	133	284.	1.7	1271.6	*	21	MAY	0744	233	4.	0.0	1265.2
21	MAY	0106	34	4.	0.0	1265.2	*	21	MAY	0426	134	275.	1.7	1271.5	*	21	MAY	0746	234	4.	0.0	1265.2
21	MAY	0108	35	4.	0.0	1265.2	*	21	MAY	0428	135	264.	1.7	1271.4	*	21	MAY	0748	235	4.	0.0	1265.2
21	MAY	0110	36	4.	0.0	1265.2	*	21	MAY	0430	136	252.	1.6	1271.3	*	21	MAY	0750	236	4.	0.0	1265.2
21	MAY	0112	37	5.	0.0	1265.2	*	21	MAY	0432	137	238.	1.6	1271.2	*	21	MAY	0752	237	3.	0.0	1265.2
21	MAY	0114	38	5.	0.0	1265.2	*	21	MAY	0434	138	223.	1.5	1271.1	*	21	MAY	0754	238	3.	0.0	1265.2
21	MAY	0116	39	5.	0.0	1265.2	*	21	MAY	0436	139	208.	1.5	1271.0	*	21	MAY	0756	239	3.	0.0	1265.2
21	MAY	0118	40	5.	0.0	1265.2	*	21	MAY	0438	140	194.	1.4	1270.9	*	21	MAY	0758	240	3.	0.0	1265.2
21	MAY	0120	41	5.	0.0	1265.2	*	21	MAY	0440	141	181.	1.4	1270.7	*	21	MAY	0800	241	3.	0.0	1265.2
21	MAY	0122	42	5.	0.0	1265.3	*	21	MAY	0442	142	169.	1.4	1270.6	*	21	MAY	0802	242	3.	0.0	1265.2
21	MAY	0124	43	5.	0.0	1265.3	*	21	MAY	0444	143	158.	1.3	1270.6	*	21	MAY	0804	243	3.	0.0	1265.2
21	MAY	0126	44	5.	0.0	1265.3	*	21	MAY	0446	144	148.	1.3	1270.5	*	21	MAY	0806	244	3.	0.0	1265.2
21	MAY	0128	45	5.	0.0	1265.3	*	21	MAY	0448	145	139.	1.3	1270.4	*	21	MAY	0808	245	3.	0.0	1265.2
21	MAY	0130	46	5.	0.0	1265.3	*	21	MAY	0450	146	130.	1.3	1270.3	*	21	MAY	0810	246	3.	0.0	1265.1
21	MAY	0132	47	5.	0.0	1265.3	*	21	MAY	0452	147	122.	1.2	1270.3	*	21	MAY	0812	247	3.	0.0	1265.1
21	MAY	0134	48	5.	0.0	1265.3	*	21	MAY	0454	148	115.	1.2	1270.2	*	21	MAY	0814	248	2.	0.0	1265.1
21	MAY	0136	49	5.	0.0	1265.3	*	21	MAY	0456	149	108.	1.2	1270.2	*	21	MAY	0816	249	2.	0.0	1265.1
21	MAY	0138	50	5.	0.0	1265.3	*	21	MAY	0458	150	101.	1.2	1270.1	*	21	MAY	0818	250	2.	0.0	1265.1
21	MAY	0140	51	5.	0.0	1265.3	*	21	MAY	0500	151	99.	1.2	1270.0	*	21	MAY	0820	251	2.	0.0	1265.1
21	MAY	0142	52	5.	0.0	1265.3	*	21	MAY	0502	152	97.	1.1	1269.9	*	21	MAY	0822	252	2.	0.0	1265.1
21	MAY	0144	53	5.	0.0	1265.3	*	21	MAY	0504	153	94.	1.1	1269.8	*	21	MAY	0824	253	2.	0.0	1265.1
21	MAY	0146	54	6.	0.0	1265.3	*	21	MAY	0506	154	92.	1.1	1269.7	*	21	MAY	0826	254	2.	0.0	1265.1
21	MAY	0148	55	6.	0.0	1265.3	*	21	MAY	0508	155	88.	1.0	1269.5	*	21	MAY	0828	255	2.	0.0	1265.1
21	MAY	0150	56	6.	0.0	1265.3	*	21	MAY	0510	156	85.	1.0	1269.3	*	21	MAY	0830	256	2.	0.0	1265.1
21	MAY	0152	57	6.	0.0	1265.3	*	21	MAY	0512	157	82.	0.9	1269.2	*	21	MAY	0832	257	2.	0.0	1265.1
21	MAY	0154	58	6.	0.1	1265.3	*	21	MAY	0514	158	78.	0.8	1269.0	*	21	MAY	0834	258	2.	0.0	1265.1

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

21	MAY	0156	59	7.	0.1	1265.3	*	21	MAY	0516	159	75.	0.8	1268.8	*	21	MAY	0836	259	2.	0.0	1265.1
21	MAY	0158	60	7.	0.1	1265.4	*	21	MAY	0518	160	71.	0.8	1268.6	*	21	MAY	0838	260	2.	0.0	1265.1
21	MAY	0200	61	8.	0.1	1265.4	*	21	MAY	0520	161	68.	0.7	1268.5	*	21	MAY	0840	261	2.	0.0	1265.1
21	MAY	0202	62	8.	0.1	1265.4	*	21	MAY	0522	162	65.	0.7	1268.3	*	21	MAY	0842	262	2.	0.0	1265.1
21	MAY	0204	63	8.	0.1	1265.4	*	21	MAY	0524	163	62.	0.6	1268.2	*	21	MAY	0844	263	2.	0.0	1265.1
21	MAY	0206	64	9.	0.1	1265.5	*	21	MAY	0526	164	59.	0.6	1268.0	*	21	MAY	0846	264	2.	0.0	1265.1
21	MAY	0208	65	9.	0.1	1265.5	*	21	MAY	0528	165	56.	0.5	1267.9	*	21	MAY	0848	265	2.	0.0	1265.1
21	MAY	0210	66	10.	0.1	1265.5	*	21	MAY	0530	166	54.	0.5	1267.7	*	21	MAY	0850	266	2.	0.0	1265.1
21	MAY	0212	67	11.	0.1	1265.5	*	21	MAY	0532	167	51.	0.5	1267.6	*	21	MAY	0852	267	2.	0.0	1265.1
21	MAY	0214	68	11.	0.1	1265.6	*	21	MAY	0534	168	49.	0.5	1267.5	*	21	MAY	0854	268	2.	0.0	1265.1
21	MAY	0216	69	12.	0.1	1265.6	*	21	MAY	0536	169	47.	0.4	1267.4	*	21	MAY	0856	269	1.	0.0	1265.1
21	MAY	0218	70	12.	0.1	1265.6	*	21	MAY	0538	170	45.	0.4	1267.3	*	21	MAY	0858	270	1.	0.0	1265.1
21	MAY	0220	71	13.	0.1	1265.7	*	21	MAY	0540	171	44.	0.4	1267.2	*	21	MAY	0900	271	1.	0.0	1265.1
21	MAY	0222	72	13.	0.1	1265.7	*	21	MAY	0542	172	42.	0.4	1267.1	*	21	MAY	0902	272	1.	0.0	1265.1
21	MAY	0224	73	14.	0.1	1265.7	*	21	MAY	0544	173	41.	0.4	1267.1	*	21	MAY	0904	273	1.	0.0	1265.1
21	MAY	0226	74	14.	0.1	1265.7	*	21	MAY	0546	174	39.	0.4	1267.0	*	21	MAY	0906	274	1.	0.0	1265.1
21	MAY	0228	75	15.	0.1	1265.8	*	21	MAY	0548	175	38.	0.3	1266.9	*	21	MAY	0908	275	1.	0.0	1265.1
21	MAY	0230	76	15.	0.1	1265.8	*	21	MAY	0550	176	37.	0.3	1266.9	*	21	MAY	0910	276	1.	0.0	1265.1
21	MAY	0232	77	16.	0.1	1265.8	*	21	MAY	0552	177	36.	0.3	1266.8	*	21	MAY	0912	277	1.	0.0	1265.1
21	MAY	0234	78	16.	0.1	1265.8	*	21	MAY	0554	178	35.	0.3	1266.8	*	21	MAY	0914	278	1.	0.0	1265.1
21	MAY	0236	79	17.	0.1	1265.9	*	21	MAY	0556	179	34.	0.3	1266.7	*	21	MAY	0916	279	1.	0.0	1265.1
21	MAY	0238	80	18.	0.1	1265.9	*	21	MAY	0558	180	33.	0.3	1266.7	*	21	MAY	0918	280	1.	0.0	1265.1
21	MAY	0240	81	19.	0.2	1266.0	*	21	MAY	0600	181	32.	0.3	1266.7	*	21	MAY	0920	281	1.	0.0	1265.1
21	MAY	0242	82	21.	0.2	1266.1	*	21	MAY	0602	182	32.	0.3	1266.6	*	21	MAY	0922	282	1.	0.0	1265.1
21	MAY	0244	83	23.	0.2	1266.2	*	21	MAY	0604	183	31.	0.3	1266.6	*	21	MAY	0924	283	1.	0.0	1265.1
21	MAY	0246	84	26.	0.2	1266.3	*	21	MAY	0606	184	30.	0.3	1266.6	*	21	MAY	0926	284	1.	0.0	1265.1
21	MAY	0248	85	30.	0.3	1266.5	*	21	MAY	0608	185	30.	0.3	1266.5	*	21	MAY	0928	285	1.	0.0	1265.1
21	MAY	0250	86	35.	0.3	1266.8	*	21	MAY	0610	186	29.	0.3	1266.5	*	21	MAY	0930	286	1.	0.0	1265.1
21	MAY	0252	87	41.	0.4	1267.1	*	21	MAY	0612	187	29.	0.2	1266.5	*	21	MAY	0932	287	1.	0.0	1265.1
21	MAY	0254	88	48.	0.5	1267.5	*	21	MAY	0614	188	28.	0.2	1266.4	*	21	MAY	0934	288	1.	0.0	1265.1
21	MAY	0256	89	57.	0.6	1267.9	*	21	MAY	0616	189	27.	0.2	1266.4	*	21	MAY	0936	289	1.	0.0	1265.1
21	MAY	0258	90	68.	0.7	1268.5	*	21	MAY	0618	190	27.	0.2	1266.4	*	21	MAY	0938	290	1.	0.0	1265.1
21	MAY	0300	91	83.	0.9	1269.2	*	21	MAY	0620	191	26.	0.2	1266.3	*	21	MAY	0940	291	1.	0.0	1265.1
21	MAY	0302	92	121.	1.2	1270.3	*	21	MAY	0622	192	25.	0.2	1266.3	*	21	MAY	0942	292	1.	0.0	1265.1
21	MAY	0304	93	263.	1.6	1271.4	*	21	MAY	0624	193	24.	0.2	1266.2	*	21	MAY	0944	293	1.	0.0	1265.1
21	MAY	0306	94	381.	2.1	1272.4	*	21	MAY	0626	194	23.	0.2	1266.2	*	21	MAY	0946	294	1.	0.0	1265.1
21	MAY	0308	95	439.	2.6	1273.1	*	21	MAY	0628	195	22.	0.2	1266.1	*	21	MAY	0948	295	1.	0.0	1265.1
21	MAY	0310	96	482.	3.1	1273.6	*	21	MAY	0630	196	21.	0.2	1266.1	*	21	MAY	0950	296	1.	0.0	1265.1
21	MAY	0312	97	507.	3.4	1273.9	*	21	MAY	0632	197	20.	0.2	1266.0	*	21	MAY	0952	297	1.	0.0	1265.1
21	MAY	0314	98	514.	3.6	1274.0	*	21	MAY	0634	198	18.	0.1	1265.9	*	21	MAY	0954	298	1.	0.0	1265.1
21	MAY	0316	99	514.	3.7	1274.1	*	21	MAY	0636	199	17.	0.1	1265.9	*	21	MAY	0956	299	1.	0.0	1265.1
21	MAY	0318	100	514.	3.7	1274.1	*	21	MAY	0638	200	16.	0.1	1265.8	*	21	MAY	0958	300	1.	0.0	1265.1
							*								*							

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	9.97-HR
+ (CFS)	(HR)					
		(CFS)				
+ 514.	3.23		116.	71.	71.	71.
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	58.	58.	58.	58.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (AC-FT)	(HR)				
4.	3.27	1.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	9.97-HR
+ (FEET)	(HR)				
1274.08	3.27	1268.17	1266.96	1266.96	1266.96

CUMULATIVE AREA = 0.00 SQ MI

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	FLOOD	635.	3.13	116.	71.	71.	0.00		
+	ROUTED TO	RETAIN	514.	3.23	116.	71.	71.	0.00		
+									1274.08	3.27

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

Condition No. 8
Existing Detention Basin
No Discharge From Existing Pipe
Hypothetical 102" Discharge Pipe

Cost Estimates

Prepared for: Flood Control District of Maricopa County
Prepared by: Parsons Brinckerhoff

FLOODING INVESTIGATION
68th Street and Arcadia
Alternative Condition Number 2

TEM NO.	ITEM DESCRIPTION	UNIT	QUANT.	UNIT COST	TOTAL
105-1	Partnering	L. SUM	1	$8,000	$8,000
107-1	NDPES/SWPPP Plans and Permits	L. SUM	1	$10,000	$10,000
107-2	Public Information Allowance	L. SUM	1	$20,000	$20,000
107-3	Project Signs Allowance	L. SUM	1	$10,000	$10,000
107-4	Purchase Right-of-Way (3 Houses and Lots)	EACH	3	$500,000	$1,500,000
200-1	Excavate Basin-68th Street and Calle Redondo	L. SUM	1	$73,000	$73,000
336-1	Pavement Replacement, "T"-Top (Std. Det. 200)	SQ.YD.	50	$30	$1,500
340-1	Remove and Replace Curb and Gutter M.A.G. Det. 220, Type A	L. FT.	100	$25	$2,500
340-3	Remove and Replace Sidewalk M.A.G. Det. 230, 8" Thick	SQ. FT.	100	$5	$500
340-4	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type A, 8" Thick	SQ. FT.	50	$15	$750
340-5	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type B, 8" Thick	SQ. FT.	50	$15	$750
340-6	Remove and Replace Driveway COS. Det. 2250, 8" Thick	SQ. FT.	50	$10	$500
350-1	Removal of Existing Improvements	L. SUM	1	$40,000	$40,000
401-1	Traffic Control	L. SUM	1	$20,000	$20,000
610-1	Utility Relocations/Replacements	L. SUM	1	$100,000	$100,000
	Subtotal				**$1,787,500**
	Mobilization (5%)				$89,400
	Quality Control (2%)				$35,800
	Landscaping and Irrigation (3%)				$53,600
	Water Supply/Dust Palliative (2%)				$35,800
	Construction Survey (1%)				$17,900
	Construction Engineering & Contingencies (30%)				$536,300
	Subtotal				**$679,400**
	TOTAL				***$2,500,000***

Prepared for: Flood Control District of Maricopa County
Prepared by: Parsons Brinckerhoff

FLOODING INVESTIGATION
68th Street and Arcadia
Alternative Condition Number 3

TEM NO.	ITEM DESCRIPTION	UNIT	QUANT.	UNIT COST	TOTAL
105-1	Partnering	L. SUM	1	$8,000	$8,000
107-1	NDPES/SWPPP Plans and Permits	L. SUM	1	$10,000	$10,000
107-2	Public Information Allowance	L. SUM	1	$20,000	$20,000
107-3	Project Signs Allowance	L. SUM	1	$10,000	$10,000
107-4	Purchase Right-of-Way (3 Houses and Lots)	EACH	3	$500,000	$1,500,000
200-1	Excavate Basin-68th Street and Calle Redondo	L. SUM	1	$170,000	$170,000
336-1	Pavement Replacement, "T"-Top (Std. Det. 200)	SQ.YD.	50	$30	$1,500
340-1	Remove and Replace Curb and Gutter M.A.G. Det. 220, Type A	L. FT.	100	$25	$2,500
340-3	Remove and Replace Sidewalk M.A.G. Det. 230, 8" Thick	SQ. FT.	100	$5	$500
340-4	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type A, 8" Thick	SQ. FT.	50	$15	$750
340-5	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type B, 8" Thick	SQ. FT.	50	$15	$750
340-6	Remove and Replace Driveway COS. Det. 2250, 8" Thick	SQ. FT.	50	$10	$500
350-1	Removal of Existing Improvements	L. SUM	1	$40,000	$40,000
401-1	Traffic Control	L. SUM	1	$20,000	$20,000
610-1	Utility Relocations/Replacements	L. SUM	1	$100,000	$100,000
	Subtotal				**$1,884,500**
	Mobilization (5%)				$94,200
	Quality Control (2%)				$37,700
	Landscaping and Irrigation (3%)				$56,500
	Water Supply/Dust Palliative (2%)				$37,700
	Construction Survey (1%)				$18,800
	Construction Engineering & Contingencies (30%)				$565,400
	Subtotal				**$716,100**
	TOTAL				***$2,600,000***

Prepared for: Flood Control District of Maricopa County
Prepared by: Parsons Brinckerhoff

FLOODING INVESTIGATION
68th Street and Arcadia
Alternative Condition Number 4

TEM NO.	ITEM DESCRIPTION	UNIT	QUANT.	UNIT COST	TOTAL
105-1	Partnering	L. SUM	1	$8,000	$8,000
107-1	NDPES/SWPPP Plans and Permits	L. SUM	1	$10,000	$10,000
107-2	Public Information Allowance	L. SUM	1	$20,000	$20,000
107-3	Project Signs Allowance	L. SUM	1	$10,000	$10,000
107-4	Purchase Right-of-Way (5 Houses and Lots)	EACH	5	$500,000	$2,500,000
200-1	Excavate Basin-68th Street and Calle Redondo	L. SUM	1	$237,000	$237,000
336-1	Pavement Replacement, "T"-Top (Std. Det. 200)	SQ.YD.	50	$30	$1,500
340-1	Remove and Replace Curb and Gutter M.A.G. Det. 220, Type A	L. FT.	100	$25	$2,500
340-3	Remove and Replace Sidewalk M.A.G. Det. 230, 8" Thick	SQ. FT.	100	$5	$500
340-4	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type A, 8" Thick	SQ. FT.	50	$15	$750
340-5	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type B, 8" Thick	SQ. FT.	50	$15	$750
340-6	Remove and Replace Driveway COS. Det. 2250, 8" Thick	SQ. FT.	50	$10	$500
350-1	Removal of Existing Improvements	L. SUM	1	$40,000	$40,000
401-1	Traffic Control	L. SUM	1	$20,000	$20,000
610-1	Utility Relocations/Replacements	L. SUM	1	$100,000	$100,000
	Subtotal				**$2,951,500**
	Mobilization (5%)				$147,600
	Quality Control (2%)				$59,000
	Landscaping and Irrigation (3%)				$88,500
	Water Supply/Dust Palliative (2%)				$59,000
	Construction Survey (1%)				$29,500
	Construction Engineering & Contingencies (30%)				$885,500
	Subtotal				**$1,121,500**
	TOTAL				***$4,100,000***

Prepared for: Flood Control District of Maricopa County
Prepared by: Parsons Brinckerhoff

FLOODING INVESTIGATION
68th Street and Arcadia
Alternative Condition Number 5

TEM NO.	ITEM DESCRIPTION	UNIT	QUANT.	UNIT COST	TOTAL
105-1	Partnering	L. SUM	1	$8,000	$8,000
107-1	NDPES/SWPPP Plans and Permits	L. SUM	1	$10,000	$10,000
107-2	Public Information Allowance	L. SUM	1	$20,000	$20,000
107-3	Project Signs Allowance	L. SUM	1	$10,000	$10,000
107-4	Purchase Right-of-Way (16 Houses and Lots)	EACH	16	$500,000	$8,000,000
200-1	Excavate Basin-68th Street and Calle Redondo	L. SUM	1	$419,000	$419,000
336-1	Pavement Replacement, "T"-Top (Std. Det. 200)	SQ.YD.	50	$30	$1,500
340-1	Remove and Replace Curb and Gutter M.A.G. Det. 220, Type A	L. FT.	100	$25	$2,500
340-3	Remove and Replace Sidewalk M.A.G. Det. 230, 8" Thick	SQ. FT.	100	$5	$500
340-4	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type A, 8" Thick	SQ. FT.	50	$15	$750
340-5	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type B, 8" Thick	SQ. FT.	50	$15	$750
340-6	Remove and Replace Driveway COS. Det. 2250, 8" Thick	SQ. FT.	50	$10	$500
350-1	Removal of Existing Improvements	L. SUM	1	$40,000	$40,000
401-1	Traffic Control	L. SUM	1	$20,000	$20,000
610-1	Utility Relocations/Replacements	L. SUM	1	$100,000	$100,000
	Subtotal				**$8,633,500**
	Mobilization (5%)				$431,700
	Quality Control (2%)				$172,700
	Landscaping and Irrigation (3%)				$259,000
	Water Supply/Dust Palliative (2%)				$172,700
	Construction Survey (1%)				$86,300
	Construction Engineering & Contingencies (30%)				$2,590,100
	Subtotal				**$3,280,800**
	TOTAL				***$11,900,000***

Prepared for: Flood Control District of Maricopa County
Prepared by: Parsons Brinckerhoff

FLOODING INVESTIGATION
68th Street and Arcadia
Alternative Condition Number 6

TEM NO.	ITEM DESCRIPTION	UNIT	QUANT.	UNIT COST	TOTAL
105-1	Partnering	L. SUM	1	$8,000	$8,000
107-1	NDPES/SWPPP Plans and Permits	L. SUM	1	$10,000	$10,000
107-2	Public Information Allowance	L. SUM	1	$20,000	$20,000
107-3	Project Signs Allowance	L. SUM	1	$10,000	$10,000
336-1	Pavement Replacement, "T"-Top (Std. Det. 200)	SQ.YD.	50	$30	$1,500
340-1	Remove and Replace Curb and Gutter M.A.G. Det. 220, Type A	L. FT.	100	$25	$2,500
340-3	Remove and Replace Sidewalk M.A.G. Det. 230, 8" Thick	SQ. FT.	100	$5	$500
340-4	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type A, 8" Thick	SQ. FT.	50	$15	$750
340-5	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type B, 8" Thick	SQ. FT.	50	$15	$750
340-6	Remove and Replace Driveway COS. Det. 2250, 8" Thick	SQ. FT.	50	$10	$500
350-1	Removal of Existing Improvements	L. SUM	1	$40,000	$40,000
401-1	Traffic Control	L. SUM	1	$20,000	$20,000
401-3	ReplaceTraffic Signal Loop Detector	EACH	1	$1,800	$1,800
405-1	Remove & Reinstall Survey Makers M.A.G Det. 120-1-B	EACH	2	$300	$600
505-1	Special Junction Structures	EACH	1	$4,000	$4,000
610-1	Utility Relocations/Replacements	L. SUM	1	$100,000	$100,000
618-5	30" Storm Drain Pipe	L.FT.	2,811	$100	$281,100
625-1	Storm Drain Manhole, 48" Pipe and Smaller (Std. Det. 520 & 522)	EACH	7	$3,000	$21,000
	Subtotal				**$1,523,000**
	Mobilization (5%)				$76,200
	Quality Control (2%)				$30,500
	Water Supply/Dust Palliative (2%)				$30,500
	Construction Survey (1%)				$15,200
	Construction Engineering & Contingencies (30%)				$456,900
	Subtotal				**$533,100**
	TOTAL				***$2,100,000***

Prepared for: Flood Control District of Maricopa County
Prepared by: Parsons Brinckerhoff

FLOODING INVESTIGATION
68th Street and Arcadia
Alternative Condition Number 7

TEM NO.	ITEM DESCRIPTION	UNIT	QUANT.	UNIT COST	TOTAL
105-1	Partnering	L. SUM	1	$8,000	$8,000
107-1	NDPES/SWPPP Plans and Permits	L. SUM	1	$10,000	$10,000
107-2	Public Information Allowance	L. SUM	1	$20,000	$20,000
107-3	Project Signs Allowance	L. SUM	1	$10,000	$10,000
107-4	Purchase Right-of-Way (5 Houses and Lots)	EACH	5	$500,000	$2,500,000
200-1	Excavate Basin-68th Street and Calle Redondo	L. SUM	1	$237,000	$237,000
336-1	Pavement Replacement, "T"-Top (Std. Det. 200)	SQ.YD.	50	$30	$1,500
340-1	Remove and Replace Curb and Gutter M.A.G. Det. 220, Type A	L. FT.	100	$25	$2,500
340-3	Remove and Replace Sidewalk M.A.G. Det. 230, 8" Thick	SQ. FT.	100	$5	$500
340-4	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type A, 8" Thick	SQ. FT.	50	$15	$750
340-5	Remove and Replace Sidewalk Ramp M.A.G. Det. 232 Type B, 8" Thick	SQ. FT.	50	$15	$750
340-6	Remove and Replace Driveway COS. Det. 2250, 8" Thick	SQ. FT.	50	$10	$500
350-1	Removal of Existing Improvements	L. SUM	1	$40,000	$40,000
401-1	Traffic Control	L. SUM	1	$20,000	$20,000
401-3	ReplaceTraffic Signal Loop Detector	EACH	1	$1,800	$1,800
405-1	Remove & Reinstall Survey Makers M.A.G Det. 120-1-B	EACH	2	$300	$600
505-1	Special Junction Structures	EACH	1	$4,000	$4,000
610-1	Utility Relocations/Replacements	L. SUM	1	$100,000	$100,000
618-5	30" Storm Drain Pipe	L.FT.	2,811	$100	$281,100
625-1	Storm Drain Manhole, 48" Pipe and Smaller (Std. Det. 520 & 522)	EACH	7	$3,000	$21,000
	Subtotal				**$3,260,000**
	Mobilization (5%)				$163,000
	Quality Control (2%)				$65,200
	Landscaping and Irrigation (3%)				$97,800
	Water Supply/Dust Palliative (2%)				$65,200
	Construction Survey (1%)				$32,600
	Construction Engineering & Contingencies (30%)				$978,000
	Subtotal				**$1,238,800**
	TOTAL				***$4,500,000***